Mayor Weill
Mayor Pro Tem Mallotto
Council Member Downs
Council Member Fromberg Edelstein
Council Member O'Keefe

Thursday, November 6, 2025, 1:00 PM
City Council Chamber
69-825 Highway 111
Rancho Mirage, CA 92270

REGULAR MEETING OF THE RANCHO MIRAGE CITY COUNCIL AND COMMUNITY SERVICES DISTRICT, ENERGY AUTHORITY, HOUSING AUTHORITY, JOINT POWERS FINANCE AUTHORITY, LIBRARY AND OBSERVATORY, AND REDEVELOPMENT SUCCESSOR AGENCY BOARDS

AGENDA

1. GENERAL

1.A. Call to Order

1.B. Flag Salute

1.C. Roll Call: Downs, Fromberg Edelstein, O'Keefe, Mallotto, Weill

2. PRESENTATIONS

2.A. Performance of "The Star-Spangled Banner" by Coachella Acappella

2.B. Presentation of a Proclamation Recognizing Retired Teachers Week

3. COUNCIL MEMBER COMMENTS/REPORTS

4. CITY MANAGER COMMENTS/REPORTS

5. CONSENT CALENDAR

5.A. Waive Full Reading of Any Ordinance Introduced or Adopted Pursuant to this Agenda

5.B. October 16, 2025, Regular City Council Meeting Minutes

— RECOMMENDED ACTION: Approve the October 16, 2025, Regular City Council Meeting Minutes as presented.

5.C. October 28, 2025, Special City Council Meeting Minutes

— RECOMMENDED ACTION: Approve the October 28, 2025, Special City Council Meeting Minutes as presented.

5.D. Rancho Mirage Traffic Safety Commission Appointment

— RECOMMENDED ACTION: Appoint Mark Jacobs to serve on the Rancho Mirage Traffic Safety Commission for the remainder of the current term.

5.E. City Capital Project CP 14-313 - Congestion Mitigation and Sand Fence Installation

— RECOMMENDED ACTION: Reject all bids received on August 28, 2025, related to City Capital Project CP 14-313, and direct staff to readvertise the project.

5.F. Coachella Valley Association of Governments (CVAG) Transportation Uniform Mitigation Fee (TUMF) Inflation Adjustment

— RECOMMENDED ACTION: Adopt Resolution No. 2025-(Next-in-Order), Implementing the Coachella Valley Association of Government's (CVAG) Inflation Adjustment for the Transportation Uniform Mitigation Fee (TUMF) Collected by the City of Rancho Mirage as Required by CVAG for Calendar Year 2026.

5.G. Extension of Completion Date for Parcel Map No. 38106 (Via Josefina)

— RECOMMENDED ACTION: Authorize an amendment to the Subdivision Improvement Agreement, which provides for the extension of the completion date for Parcel Map No. 38106 until November 6, 2026.

5.H. Quarterly Treasurer's Report for the Quarter Ending September 30, 2025

— RECOMMENDED ACTION: Receive and File the September 30, 2025, Quarterly Treasurer's Report.

5.I. Demands

— RECOMMENDED ACTION: Approve the demands as presented.

6. PUBLIC HEARINGS

6.A. Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) – Applicant: Farhad Zomorodi. Consideration of a 9-Lot Residential Subdivision on 5.04 Gross Acres. The Project Requests Approval of a Variance to the Very Low Density Residential (R-L-2) Minimum Required Lot Size From 18,000 Sq. Ft. to 16,000 Sq. Ft. Located at 72094 Ginger Rogers Road (APN: 685-080-002)

— RECOMMENDED ACTION: 1) Approve the filing of a Mitigated Negative Declaration (SCH# 2025051428) based on Environmental Assessment Case No. EA23-0003; 2) Approve Variance Case No. VAR24-0002; and 3) Approve Tentative Tract Map Case No. TTM23-0001 (TTM 38636), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

6.B. Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) – Applicant: Phillip Fomotor. Consideration of a 16-Lot Residential Subdivision on 19.81 Gross Acres. The Project Requests Approval of a Minor Variance to the Residential Estate (R-E) Minimum Required Lot Size of 1 Acre to .98 Acre for Two Lots. Located North of the Intersection of Mirage Cove Drive and Peterson Road (APN's: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022)

— RECOMMENDED ACTION: 1) Approve the filing of a Mitigated Negative Declaration (SCH# 2025070800) based on Environmental Assessment Case No. EA24-0009; 2) Approve Minor Variance Case No. VAR24-0005; and 3) Approve Tentative Tract Map Case No. TTM24-0003 (TTM 38971), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

7. ACTION CALENDAR

7.A. Revision of the Library & Observatory Collection Development Policy in Compliance with the California Freedom to Read Act (AB 1825)

— RECOMMENDED ACTION: Introduce Ordinance No. (Next-in-Order), 1st Reading, Amending Section 9.30.072 ("Collection Development Policy") of Chapter 9.30 ("Use of Library and Observatory") of Division III ("Offenses Against Public Peace") of Title 9 ("Public Peace, Morals and Welfare") of the Rancho Mirage Municipal Code.

8. NON-AGENDA PUBLIC COMMENTS

An opportunity for the public to speak on issues not on the agenda for a maximum of three (3) minutes per speaker.

9. CLOSED SESSION

9.A. Closed Session Agenda

— 1. CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION Pursuant to Government Code Section 54956.9(d)(1). Case name unspecified since disclosure may jeopardize existing settlement negotiations.

9.B. Recess to Closed Session

9.C. Reconvene Open Session

9.D. Closed Session Announcements

10. ADJOURNMENT

PUBLIC NOTICES

Agenda Materials: Any staff reports for agenda items considered in open session, as well as agenda materials for open session items provided to a majority of the legislative body(ies) following distribution of the agenda, are available for inspection in the City Clerk's Office at Rancho Mirage City Hall, located at 69-825 Highway 111, Rancho Mirage, CA 92270, during normal business hours.

Americans with Disabilities Act (ADA): If you are an individual with a disability and need a reasonable modification or accommodation pursuant to the ADA, please contact the City Clerk's Office at (760) 324-4511 Ext. 488, or via e-mail to CityClerk@RanchoMirageCA.gov, prior to the meeting. Providing notice at least 48 hours in advance of the meeting is suggested, so a determination may be made as to whether the request is feasible.

Livestream: This meeting may be viewed via Livestream on the City's website at www.RanchoMirageCA.gov.

Public Comments: Written public comments may be submitted to the City Clerk via email to CityClerk@RanchoMirageCA.gov or mail/delivery to ATTN: City Clerk, City of Rancho Mirage, 69-825 Highway 111, Rancho Mirage, CA 92270. Please submit written public comments at least three (3) hours in advance of the meeting to ensure they may be fully considered. Written public comments received during the meeting will be distributed to the legislative body(ies) and made available to the public following the meeting.

Oral public comments/testimony may be provided in person at the meeting during the non-agenda public comment period and during the public comment/testimony period for each agenda item. Public comments are limited to three (3) minutes per speaker. Please fill out a Request to Speak slip prior to the start of the meeting and submit it to the City Clerk. You will be called upon to speak at the appropriate time. Please submit a separate slip for each item on which you wish to speak.

Declaration of Posting: *I, Kristie Ramos, City Clerk of the City of Rancho Mirage, do hereby declare that the foregoing meeting agenda was posted on the City of Rancho Mirage website at www.RanchoMirageCA.gov, on the Rancho Mirage City Hall bulletin board at 69-825 Highway 111, Rancho Mirage, CA 92270, and at the Rancho Mirage Library & Observatory at 71-100 Highway 111, Rancho Mirage, CA 92270, at least 72 hours in advance of the meeting.*

Kristie Ramos

CITY OF RANCHO MIRAGE CALIFORNIA Incorporated August 3, 1973

Date Posted: October 31, 2025

City Council Staff Report

October 16, 2025, Regular City Council Meeting Minutes

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5B.
Presented To	**Presented By**
Mayor and City Council	Kristie Ramos, City Clerk

RECOMMENDED ACTION

Approve the October 16, 2025, Regular City Council Meeting Minutes as presented.

Attachments

Attachment 1 - Draft 10/16/2025 Regular City Council Meeting Minutes

ATTACHMENT 1

Mayor Weill
Mayor Pro Tem Mallotto
Council Member Downs
Council Member Fromberg Edelstein
Council Member O'Keefe

REGULAR MEETING OF THE RANCHO MIRAGE CITY COUNCIL AND COMMUNITY SERVICES DISTRICT, ENERGY AUTHORITY, HOUSING AUTHORITY, JOINT POWERS FINANCE AUTHORITY, LIBRARY AND OBSERVATORY, AND REDEVELOPMENT SUCCESSOR AGENCY BOARDS

69-825 Highway 111, Rancho Mirage, CA 92270

Thursday, October 16, 2025, 1:00 PM

DRAFT MINUTES

1. GENERAL

1.A. Call to Order

Mayor Weill called the meeting to order at 1:00 P.M.

1.B. Flag Salute

Mayor Weill led the flag salute.

1.C. Roll Call: Downs, Fromberg Edelstein, O'Keefe, Mallotto, Weill

All members were present.

2. PRESENTATIONS

2.A. Rancho Mirage Chamber of Commerce Business Update

Rancho Mirage Chamber of Commerce Board Members Nicole Kent (Director of Sales & Marketing at The Ritz Carlton - Rancho Mirage) and Ken Chavez (Director of Community & Media Affairs at Sunnylands) provided a Chamber business update.

2.B. FIND Food Bank Update

Debbie Espinosa, FIND Food Bank President & CEO, provided an update on the food bank and answered questions posed by Council Members.

3. COUNCIL MEMBER COMMENTS/REPORTS

Mayor Weill held a moment of silence in honor of the late G. Dana Hobart, former Rancho Mirage City Council Member. He then spoke of Mr. Hobart's numerous contributions to the City and surrounding community.

Council Member Fromberg Edelstein commented she was certain Mr. Hobart would appreciate such kind words regarding his legacy. She noted her attendance at the League of California Cities Annual Conference and commended Rancho Mirage

City staff for being forward-thinking.

Council Member O'Keefe recognized the Public Works/Engineering team for repaving Highway 111, the Marketing team on the successful National Night Out event, Director of Development Services Majna Dukic for being named one of the "40 Under 40" by Palms Springs Life, Library Director Aaron Espinosa for being elected Treasurer of the California Library Association, and Multimedia Specialist Kai Beech for earning multiple accolades at the California Public Information Video Star Awards. Council Member O'Keefe also recognized the legendary G. Dana Hobart.

Council Member Downs recognized the contributions and dedication of G. Dana Hobart.

Mayor Pro Tem Mallotto spoke regarding SunLine Transit Agency's efforts toward service expansion and a change in fuel source. She also reflected on G. Dana Hobart's impact on her life, his concern for his fellow citizens, and his work on their behalf.

4. CITY MANAGER COMMENTS/REPORTS

City Manager, Isaiah Hagerman, reported that he, along with the the following individuals, attended the 2025 League of California Cities Annual Conference: Assistant City Manager Ryan Stendell, Council Member Downs, Council Member Fromberg Edelstein, Council Member O'Keefe, and Mayor Pro Tem Mallotto. He also expressed his gratitude for the mentorship of G. Dana Hobart and shared related stories.

5. CONSENT CALENDAR

Isaiah Hagerman, City Manager, presented the Consent Calendar items.

MOVED/SECONDED BY DOWNS/MALLOTTO TO APPROVE THE CONSENT CALENDAR AS PRESENTED. MOTION CARRIED 5/0.

5.A. September 18, 2025, Regular City Council Meeting Minutes

— RECOMMENDED ACTION: Approve the September 18, 2025, Regular City Council Meeting Minutes as presented.

5.B. Final Tract Map No. 38990 - Cotino Town Center

— RECOMMENDED ACTION: Approve Final Tract Map No. 38990, subject to final review and approval by the City Manager, in consultation with the City Attorney.

5.C. Closure of Library and Observatory for the 2026 Rancho Mirage Writers Festival

— RECOMMENDED ACTION: Approve closing the Rancho Mirage Library and Observatory from Tuesday, January 20, 2026, through Saturday, February 7, 2026, for the 2026 Rancho Mirage Writers Festival.

5.D. Contracts

— RECOMMENDED ACTION: Approve the terms of the contracts as presented and authorize the City Manager to execute the subject contracts.

5.E. Demands

— RECOMMENDED ACTION: Approve the demands as presented.

6. PUBLIC HEARINGS

6.A. Annexation No. 199 to Community Facilities District No. 1 in Connection with Tentative Parcel Map No. TPM 38844. Location: Northeast Corner of the Intersection of Bob Hope Drive and Gerald Ford Drive

— RECOMMENDED ACTION: Adopt Resolution No. 2025-(Next-in-Order) Calling an Election on Levying a Special Tax within the Area Proposed to be Annexed to Community Facilities District No. 1 (Annexation No. 199), Declaring the Election Results, Approving the Annexation of the Territory and Directing the Recordation of the Amendment of the Notice of Special Tax Lien.

Jacob De La Cruz, Financial Analyst, presented the staff report.

No public testimony was provided.

Kristie Ramos, City Clerk, declared the election results as follows: the ballot for the 6 eligible votes was received on October 16, 2025, and was in favor; therefore, votes cast in favor equal 100% of total votes cast.

MOVED/SECONDED BY MALLOTTO/DOWNS TO ADOPT RESOLUTION NO. 2025-40, CALLING AN ELECTION ON LEVYING A SPECIAL TAX WITHIN THE AREA PROPOSED TO BE ANNEXED TO COMMUNITY FACILITIES DISTRICT NO. 1 (ANNEXATION NO. 199), DECLARING THE ELECTION RESULTS, APPROVING THE ANNEXATION OF THE TERRITORY AND DIRECTING THE RECORDATION OF THE AMENDMENT OF THE NOTICE OF SPECIAL TAX LIEN. MOTION CARRIED 5/0.

6.B. Annexation No. 200 to Community Facilities District No. 1 in Connection with Tentative Tract Map No. TTM 38990. Location: Section 31 (Cotino) Approximately 650 Feet South from the Intersection of Monterey Avenue and Gerald Ford Drive, on the West Side of Monterey Avenue

— RECOMMENDED ACTION: Adopt Resolution No. 2025-(Next-in-Order), Calling an Election on Levying a Special Tax within the Area Proposed to be Annexed to Community Facilities District No. 1 (Annexation No. 200), Declaring the Election Results, Approving the Annexation of the Territory and Directing the Recordation of the Amendment of the Notice of Special Tax Lien.

Jacob De La Cruz, Financial Analyst, presented the staff report.

No public testimony was provided.

Kristie Ramos, City Clerk, declared the election results as follows: the ballot for the 73 eligible votes was received on October 6, 2025, and was in favor; therefore, votes cast in favor equal 100% of total votes

MOVED/SECONDED BY O'KEEFE/MALLOTTO TO ADOPT RESOLUTION NO. 2025-41, CALLING AN ELECTION ON LEVYING A SPECIAL TAX WITHIN THE AREA PROPOSED TO BE ANNEXED TO COMMUNITY FACILITIES DISTRICT NO. 1 (ANNEXATION NO. 200), DECLARING THE ELECTION RESULTS, APPROVING THE ANNEXATION OF THE TERRITORY AND DIRECTING THE RECORDATION OF THE AMENDMENT OF THE NOTICE OF SPECIAL TAX LIEN. MOTION CARRIED 5/0.

7. ACTION CALENDAR

7.A. Annexation No. 202 to Community Facilities District No. 1 in Connection with Preliminary Development Plan Case No. PDP24-0002. Owner: Rancho Mirage Pacific Associates LP. Location: South of Via Vail, West of Monterey Avenue, and East of the Rancho Mirage Dog Park

— RECOMMENDED ACTION: Adopt Resolution No. 2025-(Next-in-Order), Declaring the City's Intention to Annex Territory to Community Facilities District No. 1 and to Levy a Special Tax Therein for Additional Police and Fire Services, Preliminarily Approve a Map of the Area Proposed to be Annexed, and Schedule a Public Hearing to Consider the Annexation and the Levy of the Special Tax for Annexation No. 202.

Jacob De La Cruz, Financial Analyst, presented the staff report.

A discussion ensued.

MOVED/SECONDED BY FROMBERG EDELSTEIN/O'KEEFE TO ADOPT RESOLUTION NO. 2025-42, DECLARING THE CITY'S INTENTION TO ANNEX TERRITORY TO COMMUNITY FACILITIES DISTRICT NO. 1 AND TO LEVY A SPECIAL TAX THEREIN FOR ADDITIONAL POLICE AND FIRE SERVICES, PRELIMINARILY APPROVE A MAP OF

THE AREA PROPOSED TO BE ANNEXED, AND SCHEDULE A PUBLIC HEARING TO CONSIDER THE ANNEXATION AND THE LEVY OF THE SPECIAL TAX FOR ANNEXATION NO. 202. MOTION CARRIED 5/0.

7.B. Special Event Permit Case No. SE25-0027 – Fireworks Display at the Thunderbird County Club (70737 Country Club Drive) on November 8, 2025

— RECOMMENDED ACTION: Approve a five-minute fireworks display at the Thunderbird Country Club on Saturday, November 8, 2025, at 9:15 p.m.

Colin Kirkpatrick, City Attorney, announced that Council Member Fromberg Edelstein would recuse herself due to her primary residence being in Thunderbird Country Club. Council Member Fromberg Edelstein left the Council Chamber.

Lezlee Perez, Assistant Planner, presented the staff report.

The following individual provided public comments: Mark Bessman.

A discussion ensued.

Council Member Fromberg Edelstein returned to the Council Chamber following the vote for this item.

MOVED/SECONDED BY MALLOTTO/DOWNS TO APPROVE A FIVE-MINUTE FIREWORKS DISPLAY AT THE THUNDERBIRD COUNTRY CLUB ON SATURDAY, NOVEMBER 8, 2025, AT 9:15 P.M. MOTION CARRIED 4/0 (RECUSED: FROMBERG EDELSTEIN).

7.C. Fiscal Year 2024-2025 Financial Summary and Year-End Budget Adjustments

— RECOMMENDED ACTION: Adopt the resolutions identified as Resolutions “1” through “4”, amending the Fiscal Year 2024-2025 budgets for each respective entity; 1) Resolution No. 2025-(Next-in-Order), Amending the Fiscal Year 2024-2025 City Budget; 2) Resolution No. 2025-CSD-(Next-in-Order), Amending the Fiscal Year 2024-2025 Community Services District Budget; 3) Resolution No. 2025-HA-(Next-in-Order), Amending the Fiscal Year 2024-2025 Housing Authority Budget; and 4) Resolution No. 2025-LB-(Next-in-Order), Amending the Fiscal Year 2024-2025 Library and Observatory Budget.

Joseph Carpenter, Assistant Director of Administrative Services, presented the staff report.

A discussion ensued.

MOVED/SECONDED BY MALLOTTO/DOWNS TO 1) ADOPT RESOLUTION NO. 2025-43, AMENDING THE FISCAL YEAR 2024-2025 CITY BUDGET; 2) ADOPT RESOLUTION NO. 2025-CSD-02, AMENDING THE FISCAL YEAR 2024-2025 COMMUNITY SERVICES DISTRICT BUDGET; 3) ADOPT RESOLUTION NO. 2025-HA-03, AMENDING THE FISCAL YEAR 2024-2025 HOUSING AUTHORITY BUDGET; AND 4) ADOPT RESOLUTION NO. 2025-LB-02, AMENDING THE FISCAL YEAR 2024-2025 LIBRARY AND OBSERVATORY BUDGET. MOTION CARRIED 5/0.

8. NON-AGENDA PUBLIC COMMENTS

The following individuals provided non-agenda public comments: Susan Ragsdale, Wally Melendez, and Ernie Demba.

9. CLOSED SESSION

9.A. Closed Session Agenda

— CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION Pursuant to Government Code Section 54956.9(d)(1). Case name unspecified since disclosure may jeopardize existing settlement negotiations.

Colin Kirkpatrick, City Attorney, shared a fond memory of G. Dana Hobart. He then announced that the City Council would recess to Closed Session to confer with legal counsel regarding one existing litigation item, pursuant to Government Code Section 54956.9(d)(1), noting the case name was unspecified since disclosure may jeopardize existing settlement negotiations.

9.B. Recess to Closed Session

Mayor Weill recessed the meeting to Closed Session at 2:48 P.M.

9.C. Reconvene Open Session

Mayor Weill reconvened the meeting at 3:45 P.M., with all members present.

9.D. Closed Session Announcements

Colin Kirkpatrick, City Attorney, reported that no reportable action was taken during Closed Session.

10. ADJOURNMENT

Mayor Weill adjourned the meeting at 3:45 P.M.

Date Approved by City Council:

City Council Staff Report

October 28, 2025, Special City Council Meeting Minutes

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5C.
Presented To	**Presented By**
Mayor and City Council	Kristie Ramos, City Clerk

RECOMMENDED ACTION

Approve the October 28, 2025, Special City Council Meeting Minutes as presented.

Attachments

Attachment 1 - Draft 10/28/2025 Special City Council Meeting Minutes

ATTACHMENT 1

Mayor Weill
Mayor Pro Tem Mallotto
Council Member Downs
Council Member Fromberg Edelstein
Council Member O'Keefe

SPECIAL MEETING OF THE RANCHO MIRAGE CITY COUNCIL AND COMMUNITY SERVICES DISTRICT, ENERGY AUTHORITY, HOUSING AUTHORITY, JOINT POWERS FINANCE AUTHORITY, LIBRARY AND OBSERVATORY, AND REDEVELOPMENT SUCCESSOR AGENCY BOARDS

69-825 Highway 111, Rancho Mirage, CA 92270

Tuesday, October 28, 2025, 9:30 AM

DRAFT MINUTES

1. GENERAL

1.A. Call to Order

Mayor Weill called the meeting to order at 9:32 A.M.

1.B. Flag Salute

Mayor Weill led the flag salute.

1.C. Roll Call - Downs, Fromberg Edelstein, O'Keefe, Mallotto, Weill

All council members were present.

2. PUBLIC COMMENTS

None.

3. RECESS

Mayor Weill recessed the meeting at 9:34 A.M.

4. RECONVENE AT 11:30 A.M. AT OMNI RANCHO LAS PALMAS

The meeting was reconvened, at 11:30 A.M. at Omni Rancho Las Palmas Resort, with all council members present.

5. PRESENTATION ITEM

5.A. 2025 State of the City Program

The City Council presented the 2025 Rancho Mirage State of the City address.

6. ADJOURNMENT

Mayor Weill adjourned the meeting at 1:08 P.M.

Date Approved by City Council:

City Council Staff Report

Rancho Mirage Traffic Safety Commission Appointment

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5D.
Presented To	**Presented By**
Mayor and City Council	Kristie Ramos, City Clerk

RECOMMENDED ACTION

Appoint Mark Jacobs to serve as a member of the Rancho Mirage Traffic Safety Commission for the remainder of the current term.

DISCUSSION

There is currently a vacancy on the Rancho Mirage Traffic Safety Commission, for nomination by Council Member Fromberg-Edelstein. Council Member Fromberg-Edelstein is nominating Mark Jacobs to serve as a member of the Traffic Safety Commission for the remainder of the current term, which ends on June 1, 2026. This nomination requires ratification by the Rancho Mirage City Council. A copy of Mr. Jacobs' application is attached.

Attachments

Attachment 1 - Commission Application

ATTACHMENT 1

CITY OF RANCHO MIRAGE

OFFICE OF THE CITY CLERK
69-825 Highway 111, Rancho Mirage, CA 92270
Phone: (760) 324-4511

BOARD/COMMISSION APPLICATION FORM

Below, please check the box next to the name of the board/commission on which you would like to serve. Please check only one box, as a separate application is required for each board/commission on which you would like to serve.

CITY BOARDS/COMMISSIONS*

- ☐ Community Cultural Commission
- ☐ Community Emergency Preparedness Commission
- ☐ Community Parks & Trails Commission
- ☐ Historic Preservation Commission
- ☐ Housing Commission
- ☐ Library & Observatory Advisory Commission
- ☐ Library & Observatory Foundation Board
- ☐ Mobilehome Fair Practices Commission
- ☐ Planning Commission
- ☐ Traffic Safety Commission

OUTSIDE AGENCY BOARDS/COMMISSION**

- ☐ Coachella Valley Mosquito & Vector Control District Board
- ☐ The Joslyn Center Board
- ☐ Palm Springs International Airport Commission

*Please see attached information sheet for City board/commission descriptions.

**Please note that outside agency board/commission terms differ from City board/commission terms.

Contact Information

Name: Mark C Jacobs

Residence Address: Rancho Mirage, CA 92270

Mailing Address: same as above

Phone: (home) _____ (work) _____

(cell) _____

E-Mail Address: _____

Emergency Contact: (name) _____ (phone #) _____

Additional Information

Occupation: Patent Lawyer-- CA Bar 55354

Name of Employer: Self

Length of Residency in Rancho Mirage: 3+ years

Are you registered to vote in Rancho Mirage? (Please check one) ☑ Yes ☐ No

Conflict of Interest Disclosure

Some boards/commissions are subject to the Conflict of Interest Codes of the City and/or State. If you serve on a board/commission, you may be required to disclose certain economic interests held within the City of Rancho Mirage. If required, are you willing to disclose such information? (Please check one)

☑ Yes ☐ No

Ethics Training

All City board/commission members are required to complete a State-approved two-hour local officials ethics training course upon appointment, and every two years thereafter during continuous service. Are you willing to complete the required ethics training? (Please check one)

☑ Yes ☐ No

Background Check

All City board/commission members are required to submit to a criminal background check (at no cost to the applicant) upon appointment and may not assume office until a successful background check has been completed. Are you willing to submit to a criminal background check? (Please check one)

☑ Yes ☐ No

Background Information

Below, please provide a brief biographical sketch, including education, work experience, civic involvement, and any other information relevant to the position you seek. Please feel free to attach a resume.

I have served on the Board of the Folsom Lake Symphony Orch for 3 years, the Calif Auto Museum in Sacramento for 3 years and one year on a private corporation.
r
Education-
Univ. of Pennsylvania BA Chemistry
Temple Univ. Law School - JD
Univ of Wisconsin Law Schools 2 summers
Georgetown Univ. Masters Degree in Law

Member Calif bar 55354

I ran the Science Fair in Sacramento, Calif for the Sacto Bee Newspaper sponsor.

Hobbies- Travel Photography; - I have been to 26 countries from Iceland to Singapore, France to Peru among others
Art- I do acrylic painting
Music- I enjoy classical music and opera

I live with my significant other, a PhD speech therapist in Rancho Mirage

Please submit your application via email to CityClerk@RanchoMirageCA.gov or mail/deliver to the City Clerk at Rancho Mirage City Hall (69-825 Highway 111, Rancho Mirage, CA 92270).

City Council Staff Report

City Capital Project CP 14-313 - Congestion Mitigation and Sand Fence Installation

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5E.
Presented To	**Presented By**
Mayor and City Council	Ryan Stendell, Assistant City Manager

RECOMMENDED ACTION

Reject all bids received on August 28, 2025, related to City Capital Project CP 14-313, and direct staff to readvertise the project.

DISCUSSION

In calendar year 2014, the City Council was granted approximately $800,000 through a federally funded grant administered by CalTrans. The scope of work includes widening the north side of Ramon Road, construction of curb and gutter, paving improvements, installation of a new dedicated right-turn lane and “porkchop island” at Bob Hope Drive, traffic signal modifications, and placement of double rows of sand fencing along portions of Ramon Road and Dinah Shore Drive.

The right-of-way phase of this project took an inordinate amount of time but was approved to move to the construction phase this summer. Staff advertised the project in July, and bids were opened on August 28th with two sealed bids received.

As the City was reviewing responsive bids, Caltrans informed staff that effective immediately, federal regulations had changed ending the Disadvantaged Business Enterprise (DBE) program. All federally funded contracts must not include any reference to DBE goals, and DBE goals must not be a component of the contractor selection process. After consultation with the city’s legal counsel, staff believe that the most responsible course of action would be to reject the bids and re-advertise the project. This provides a level playing field for all potential bidders and reduces the likelihood of any future bid protest. Secondarily, it is possible that removal of DBE requirements will yield a larger bidding pool and more competitive pricing.

City Council Staff Report

Coachella Valley Association of Governments (CVAG) Transportation Uniform Mitigation Fee (TUMF) Inflation Adjustment

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5F.
Presented To	**Presented By**
Mayor and City Council	Michael Stitt , Building Official

RECOMMENDED ACTION

Adopt Resolution No. 2025-(Next-in-Order), Implementing the Coachella Valley Association of Government's (CVAG) Inflation Adjustment for the Transportation Uniform Mitigation Fee (TUMF) Collected by the City of Rancho Mirage as Required by CVAG for Calendar Year 2026.

DISCUSSION

As a Coachella Valley Association of Governments (CVAG) Member Agency, the City participated in the preparation of the 1987 Coachella Valley Area Transportation Mitigation Fee Act. This resulted in the City's adoption and implementation of CVAG's model TUMF ordinance as Rancho Mirage Municipal Code Chapter 3.40. TUMF, short for Transportation Uniform Mitigation Fee, is a one-time fee charged on all new development occurring within the CVAG region to cover the "fair share" cost of regional transportation projects and improvements deemed necessary to serve growth. The program relies on local agencies (e.g., cities and unincorporated communities) to collect TUMF as development occurs. The City collects and remits TUMF fees as part of the Building permit process as required by CVAG.

In 2018, CVAG commissioned Michael Baker International, Inc. to prepare an updated TUMF study entitled *Transportation Uniform Mitigation Fee (TUMF) 2018 Fee Schedule Update, Nexus Study Report,* to establish updated TUMF levels and program revenue collection targets. The CVAG Executive Committee approved the study on April 30, 2018 by unanimous vote. Following CVAG's approval of the study, the City implemented the 2018 Nexus Study and the updated TUMF Fee Schedule. The 2018 Nexus Study recommended an inflationary adjustment to TUMF by the increase in the Riverside-San Bernardino-Ontario Consumer Price Index (CPI). CVAG has applied regular fee increases since the initial 2018 approval based on CPI.

CVAG adopted the subject TUMF inflation adjustment in April of 2025 and provided the City the Revised Fee Schedule for TUMF, effective January 1, 2026, as attached to the Resolution. CVAG has requested the City update the TUMF collected by the City. Adoption of the attached Resolution will update the TUMF, effective as of January 1, 2026, resulting in an increase in the TUMF consistent with the CPI increase, as authorized in the 2018 Nexus Study.

Adoption of the Resolution is exempt from the requirements of the California Environmental Quality Act and State CEQA Guidelines pursuant to CEQA Guidelines Section 15061(b)(3) because it can be seen with certainty that there is no possibility that the fee update will have a significant effect on the environment because the action simply modifies existing impact fees in accordance with a CPI escalator contemplated in the applicable nexus study, and it can be seen with certainty that there will not be a physical change in the environment. Further, the adoption of this Resolution modifies a government funding mechanism which is not a physical change in the environmental and therefore, is not a project under CEQA. (14 Cal. Code of Regulations Section 15378(b)(4).) Moreover, this Resolution is adopted for the purpose of modifying fees and is not intended to approve a capital project for which separate review under CEQA would be required at the time any such project is considered for approval by the City. (14 Cal. Code of Regulations Section 15273(a).)

Attachments

Attachment 1 - Resolution

Attachment 1

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COUNCIL OF RANCHO MIRAGE, CALIFORNIA, IMPLEMENTING THE COACHELLA VALLEY ASSOCIATION OF GOVERNMENT'S (CVAG) INFLATION ADJUSTMENT FOR THE TRANSPORTATION UNIFORM MITIGATION FEE (TUMF) COLLECTED BY THE CITY OF RANCHO MIRAGE AS REQUIRED BY CVAG FOR CALENDAR YEAR 2026

WHEREAS, the City of Rancho Mirage (the "City") is a charter city and a municipal corporation of the State of California, and recognized as a political subdivision of State of California for certain purpose;

WHEREAS, the City is a member agency of the Coachella Valley Association of Governments ("CVAG"), a joint powers agency consisting of the County of Riverside, Agua Caliente Band of Cahuilla Indians, the Cabazon Band of Mission Indians, the Torres Martinez Desert Cahuilla Indians, and the Cities of Blythe, Desert Hot Springs, Palm Springs, Cathedral City, Palm Desert, Indians Wells, La Quinta, Indio and Coachella; and

WHEREAS, at CVAG's April 1, 2025 Executive Committee meeting, the Executive Committee approved adjusting the TUMF rates for calendar year 2026 by the increase in the Riverside-San Bernardino-Ontario Consumer Price Index, as expressly authorized and contemplated in CVAG's duly adopted nexus study, the Transportation Uniform Mitigation Fee (TUMF) 2018 Fee Schedule Update, which the City duly implemented in October of 2018.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF RANCHO MIRAGE, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. RECITALS AND EXHIBITS

That the foregoing Recitals and attached Exhibits are true and correct and are hereby incorporated by this reference.

SECTION 2. TUMF REVISED FEE SCHEDULE

That the City Council hereby implements the revised Fee Schedule for the Transportation Uniform Mitigation Fee, effective January 1, 2026, as set forth in Exhibit "A", attached hereto and incorporated herein by this reference.

SECTION 4. CEQA COMPLIANCE

That the adoption of this Resolution is exempt from the requirements of the California Environmental Quality Act and State CEQA Guidelines pursuant to CEQA Guidelines Section 15061(b)(3) because it can be seen with certainty that there is no possibility that the fee update will have a significant effect on the environment because

the action simply modifies existing impact fees in accordance with a CPI escalator contemplated in the applicable nexus study, and it can be seen with certainty that there will not be a physical change in the environment. Further, the adoption of this Resolution modifies a government funding mechanism which is not a physical change in the environmental and therefore, is not a project under CEQA. (14 Cal. Code of Regulations Section 15378(b)(4).) Moreover, this Resolution is adopted for the purpose of modifying fees, and is not intended to approve a capital project for which separate review under CEQA would be required at the time any such project is considered for approval by the City. (14 Cal. Code of Regulations Section 15273(a).)

SECTION 5. CITY MANAGER AUTHORITY

That the City Council hereby authorizes the City Manager or designee to take any further actions consistent with the intent of this Resolution to effectuate the increased TUMF and collection from applicable projects as identified in Exhibit "A", including but not limited to updating the City's Impact Fee Schedule accordingly.

SECTION 6. SEVERABILITY

That the City Council declares that, should any provision, section, paragraph, sentence or word of this Resolution be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences or words of this Resolution as hereby adopted shall remain in full force and effect.

SECTION 7. AMENDING OF BAIL SCHEDULE

That the City Attorney's Office is hereby directed to determine whether this Resolution necessitates amendment of the City's Bail Schedule and to cause such necessary amendments to be made and filed with the local branches of the Superior Court of the County of Riverside.

SECTION 8. EFFECTIVE DATE

That this Resolution shall take effect immediately upon its adoption.

SECTION 9. SEVERABILITY

That if any provision, section, paragraph, sentence or word of this Resolution be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences or words as hereby adopted shall remain in full force and effect.

SECTION 10. CERTIFICATION.

That the City Clerk shall certify as to the adoption of this Resolution and shall cause the same to be processed in the manner required by law.

SECTION 11. REPEAL OF CONFLICTING PROVISIONS.

That all provisions of any resolution in effect prior to the effective date of this Resolution as adopted by the City Council that are in conflict with the provisions of this Resolution, are hereby repealed.

The foregoing Resolution was approved and adopted at a meeting of the City Council held on _____ by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

CITY OF RANCHO MIRAGE:

_____
Ted Weill, Mayor

ATTEST:

_____
Kristie Ramos, City Clerk

APPROVED AS TO FORM:

_____
Colin D. Kirkpatrick, City Attorney

EXHIBIT “A”

REVISED FEE SCHEDULE FOR THE

TRANSPORTATION UNIFORM MITIGATION FEE

COACHELLA VALLEY ASSOCIATION OF GOVERNMENTS
74-199 El Paseo Suite 100, Palm Desert, CA 92260 • 760 346-1127 • cvag.org

May 1, 2025

REVISED FEE SCHEDULE FOR THE TRANSPORTATION UNIFORM MITIGATION FEE EFFECTIVE JAUARY 1, 2026

The Transportation Uniform Mitigation Fee (TUMF) is a development impact fee designed to offset the effects of population growth on transportation infrastructure within the Coachella Valley. It is charged on any construction that will result in an increase in vehicular trips.

The TUMF is collected by the permitting jurisdiction in accordance with an adopted local ordinance, which further allows for an annual adjustment for inflation based on the Consumer Price Index for the Riverside-San Bernardino-Ontario metropolitan area. This inflation factor has been applied to the current fee schedule and results in the revised rates that will be assessed on new development starting January 1, 2026.

TUMF Category	***Assessment Unit***	***Rate as of January 1, 2026***
Single family detached	Dwelling unit	$2,900
Multi-family attached	Dwelling unit	$1,670
Nursing/congregate care	Dwelling unit	$615
Retail	1,000 sq. ft.	$7,535
Office	1,000 sq. ft.	$2,995
Industrial	1,000 sq. ft.	$1,520
Fuel - gas	Dispensing unit	$10,800
Fuel - electric	Dispensing unit	$110
Hotel	Room	$4,400
Golf course	Acre	$1,155

For any question regarding the application of TUMF, please contact the Coachella Valley Association of Governments at (760) 346-1127 or by emailing cvag@cvag.org.

City Council Staff Report

Extension of Completion Date for Parcel Map No. 38106 (Via Josefina)

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5G.
Presented To	**Presented By**
Mayor and City Council	Jeff Benson, Management Analyst

RECOMMENDED ACTION

Authorize an amendment to the Subdivision Improvement Agreement, which provides for the extension of the completion date for Parcel Map No. 38106 until November 6, 2026.

DISCUSSION

Parcel Map No. 38106 subdivided an existing 5.0-acre rectangular parcel into four single-family residential parcels on the southwest corner of Via Josefina and Ginger Rogers Road. The property is bordered by Ginger Rogers Road to the north, Via Josefina to the east, Via Florencia to the south, and a vacant lot to the west.

The Final Parcel Map for the project was approved by the City Council on April 6, 2023. The agreement that the developer entered into with the City required that all improvements be completed no later than two years from approval date, which was April 6, 2025.

The Developer has requested that the City extend the contract term to provide sufficient time to complete the remaining onsite and offsite improvements and has requested an extension of the required completion date until November 6, 2026.

Staff recommends that the City Council approve the extension of the completion date to November 6, 2026.

Attachments

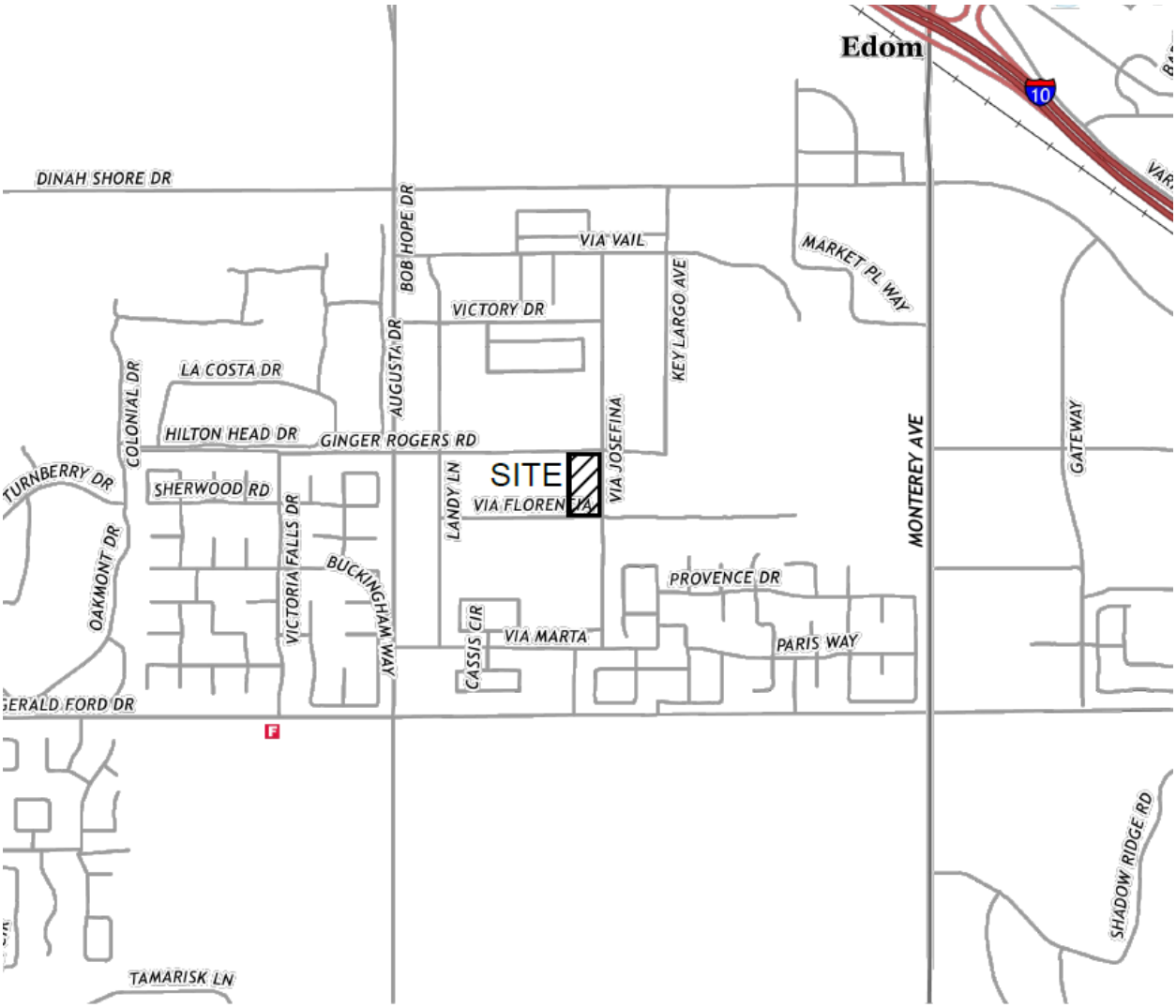
Attachment 1 - Vicinity Map

Attachment 2 - Subdivision Improvement Agreement

Attachment 3 - Extension Form & Supporting Documentation

Attachment 4 - First Amendment of Subdivision Improvement Agreement

ATTACHMENT 1



VICINITY MAP

ATTACHMENT 2

Original

SUBDIVISION IMPROVEMENT AGREEMENT

(PM 38106)

This agreement ("Agreement") is made and entered into as of April 6, 2023, by and between the CITY OF RANCHO MIRAGE, a municipal corporation (**"CITY"**) and **JOSEFINA PM 38106, LLC** **("DEVELOPER")**, with respect to the following:

A. DEVELOPER shall construct the following public improvements ("work") for the above-referenced property: **streets, curbs, gutters, storm drains, sewer, water, walls, landscaping, and any improvements associated with this development, all as described on Schedule A hereto.**

B. CITY-approved plans and specifications for the construction of the work, which are incorporated herein by reference and prepared by: **Heitec Consulting**, are identified as: **Parcel Map 38106** (Title as appears on plans).

C. The following are attached hereto and made a part hereof: **Schedule A, Schedule B, Schedule C.**

1. **IMPROVEMENTS:** For valuable consideration, DEVELOPER agrees to do, or cause to be done, at DEVELOPER'S expense and without any cost or liability to CITY, all of the work described herein by the date specified in Schedule A. DEVELOPER warrants that all of the materials supplied and work to be done will be of good quality and workmanship. Said work shall be in strict conformity with the plans and specifications of the work, the standard specifications and drawings for public improvements adopted by CITY and this Agreement. DEVELOPER shall furnish all transportation, equipment, labor, services, permits, utilities, and all other items necessary to complete the work. DEVELOPER shall pay all claims, demands and liability arising out of, or resulting from or in connection with, the performance of the work as provided for in this Agreement. DEVELOPER shall furnish accurate "as constructed" plans. In addition, DEVELOPER shall, within thirty (30) days of acceptance of the work, set all final monuments in place for acceptance. DEVELOPER'S obligations herein are not limited by any cost estimates, nor will any estimate be a measure of damages.

CITY in its sole discretion and without liability to CITY, City Council members, CITY'S engineer, and their consultants, and each of their officials, directors, officers, employees, and agents, may require changes, alterations, or additions to the plans and specifications which do not exceed ten percent (10%) of the original CITY-approved cost estimate of the work for the reasons set forth herein. Changes, alterations, or additions in addition to said ten percent (10%) limitation may be made if to correct errors or omissions in the approved plans and specification and for unforeseen conditions such as but not limited to rock excavation, unstable soil conditions or high-water tables requiring dewatering.

2. **INSURANCE**: DEVELOPER shall not commence or continue to perform any work unless DEVELOPER has in full force and effect all insurance required hereunder with companies satisfactory to CITY. To be acceptable, insurers must be authorized to do business, and have an agent for service of process, in California, and have an "A" policyholder's rating and a financial rating of at least Class V, in accordance with the current Best's Ratings. All insurance policies shall be maintained at DEVELOPER's expense until the work is accepted by CITY and provide for coverage of all causes of action or disputes

arising out of acts in performance of the construction of the work herein, whether said causes or disputes are filed or brought to the attention of CITY before or after the termination of this contract.

Concurrent with execution of this Agreement, DEVELOPER shall provide certificate(s) of insurance and endorsements, satisfactory to CITY, or otherwise provide proof of insurance as approved by the City Attorney, certifying that DEVELOPER has and will maintain for the Agreement period, full worker's compensation insurance coverage as required by State laws, for all persons who are or may be employed in carrying out the work. This provision shall not apply if DEVELOPER has no employees performing work under this Agreement. If DEVELOPER has no employees for the purposes of this Agreement, DEVELOPER shall sign the Certificate of Exemption from Worker's Compensation Insurance, attached hereto as Schedule "C."

Concurrent with execution of this Agreement, DEVELOPER shall provide to CITY certificate(s) of insurance and endorsements, satisfactory to CITY, or otherwise provide proof of insurance as approved by the City Attorney, certifying that DEVELOPER has general liability and commercial vehicle liability insurance coverage naming CITY, City Council members, CITY'S engineer, and their consultants, officials, directors, officers, agents and employees, as additional insureds for both bodily injury and property damage in a single limit of not less than that specified in Schedule A. DEVELOPER shall ensure that the most current certificates of insurance and endorsements shall be delivered to and maintained by the CITY at all times. The requirements set forth in this paragraph shall survive expiration or sooner termination of this Agreement.

General liability and commercial vehicle liability insurance coverage shall include each of the following types of insurance as required by CITY to carry out this Agreement:

A. General Liability
   1. Comprehensive Form
   2. Premises-Operations
   3. Explosion and Collapse Hazard
   4. Underground Hazard
   5. Products/Operations Competed
   6. Contractual Insurance
   7. Broad Form Property Damage Including Completed Operations
   8. Independent Contractors
   9. Personal Injury

B. Automobile Liability
   1. Comprehensive Form, Including Loading and Unloading
   2. Owned
   3. Hired

Concurrent with execution of any agreements between DEVELOPER and any subcontractors retained by DEVELOPER to perform any work required of DEVELOPER hereunder, and in any event prior to DEVELOPER authorizing any subcontractors to perform any such work or to even conduct any preliminary activities at the location of where the work is to be completed in preparation for or in anticipation of such work, DEVELOPER shall collect certificates of insurance and endorsements from all such subcontractors evidencing proof that all subcontractors have procured and will maintain all the insurance coverages required of DEVELOPER under this Agreement, and name as additional insureds the parties to this Agreement. DEVELOPER agrees to monitor and review all such coverage and assumes all responsibility for ensuring that such coverage is provided in conformity with the requirements of this Section.

In addition to naming the CITY, City Council members, CITY'S engineer, and their consultants, officials, directors, officers, agents and employees, as additional insureds, as set forth above, the certificates of insurance and endorsements, including those provided by any subcontractor, provided either on forms required by the CITY or as otherwise approved by the City Attorney, shall bear the following endorsements: (1) each policy required herein must be endorsed to provide that the policy shall not be cancelled or non-renewed by or reduced in coverage or limits (except by paid claims) unless the insurer has provided the CITY with thirty (30) days prior written notice of cancellation; (2) the carriers of all required insurance policies must waive all rights of subrogation against the CITY and its officers, employees, servants, volunteers, agents and independent contractors; and (3) except for worker's compensation insurance, if any, all insurance policies required to be provided by DEVELOPER must be endorsed to provide that the policies shall apply on a primary and noncontributing basis in relation to any insurance or self-insurance, primary or excess, maintained or available to the CITY, and its officers, employees, servants, volunteers, agents and independent contractors.

DEVELOPER shall be responsible for payment of any deductibles contained in any insurance policies required hereunder and shall also be responsible for payment of any self-insured retentions. In the event DEVELOPER maintains insurance with broader coverage and/or limits of liability greater than those required herein, CITY requires and shall be entitled to the broader coverage and/or higher limits of liability maintained by DEVELOPER. Any insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to CITY. The fact that insurance is obtained by DEVELOPER shall not be deemed to release or diminish the liability of DEVELOPER, including, without limitation, liability under the indemnity provisions of this Agreement. The duty to indemnify and hold the CITY harmless shall apply to all claims and liability regardless of whether any insurance policies are applicable. The policy limits do not act as a limitation upon the amount of indemnification to be provided by DEVELOPER. Approval or purchase of any insurance contracts or policies shall in no way relieve from liability nor limit the liability of DEVELOPER, its principals, officers, agents, employees, persons under the supervision of DEVELOPER, vendors, suppliers, invitees, sub-contractors, or anyone employed directly or indirectly by any of them. Without limiting the generality of the forgoing, DEVELOPER agrees and acknowledges that if it fails to obtain all of the insurance required in this Agreement in accordance with the requirements herein, or to obtain and ensure that the coverage required herein is maintained by any subcontractors or others involved in any way with the Project, DEVELOPER shall be responsible for any losses, claims, suits, damages, defense obligations, or liability of any kind or nature attributable to the CITY or its officers, employees, servants, volunteers, agents and independent contractors; and all performance under this Agreement shall be discontinued immediately until notice is received by CITY that the required insurance has been restored to

full force and effect and that the premiums therefor have been paid for a period satisfactory to CITY. Any failure to maintain the required insurance, including insurance required of any subcontractors or others involved in any way with the Project, shall be sufficient cause for CITY to terminate this Agreement.

All insurance certificates executed in connection with this Agreement, whether issued as DEVELOPER or any of DEVELOPER's subcontractors as the named insured, shall be signed under penalty of perjury under the laws of the State of California that all the information contained in the insurance certificates is true and correct, and such representation shall be made knowingly based on independent investigation and verification.

Nothing contained in these insurance requirements shall limit the liability of DEVELOPER or DEVELOPER'S sureties. Review and acceptance of insurance certificates shall not constitute any representation by CITY or its representatives that any required insurance has been issued.

3. **DEVELOPER'S LIABILITY**: DEVELOPER shall, at DEVELOPER'S sole cost and expense, be solely and completely responsible for all matters affecting the design, prosecution, progress, and completion of the work (both on and off the job site). DEVELOPER shall be responsible for observing all laws. DEVELOPER shall provide for public convenience and safety of workers, including DEVELOPER'S workers, if any, and those of DEVELOPER'S subcontractors, suppliers and others contributing to the work. DEVELOPER shall protect CITY property and property rights of others, including the location, maintenance, and replacement of utilities, whether shown on the plans or not. DEVELOPER shall give prior notification to utility owners. DEVELOPER shall notify Underground Service Alert at 1-800-422-4133 at least 48 hours prior to start of construction. DEVELOPER shall protect against and prevent drainage from storm runoff. DEVELOPER shall not interfere with easements, rights-of-way and encroachment permits. Nothing in this Agreement, the specifications, or other contract documents, or CITY'S approval of the plans and specifications or inspection of the work is intended to include CITY'S review, inspection, acknowledgment of or responsibility for any such matters. CITY, City Council members, CITY'S engineer, and their consultants and each of their officials, directors, officers, employees, and agents shall have absolutely no responsibility or liability for the above.

4. **DEVELOPER'S INDEMNIFICATION**: DEVELOPER shall defend, indemnify and hold harmless CITY, City Council members, CITY'S engineer and their consultants and each of their officials, directors, officers, agents and employees from and against all liability, claims, damages, losses, expenses and other costs, including costs of defense and attorneys' fees arising out of or resulting from or in connection with the design or construction of the work, both on and off the job site, and during and after completion, except for any such claim arising out of the sole or active negligence or willful misconduct of the CITY, its officers, agents, employees or volunteers. The indemnity provided above relates to liability, claims, damages, losses, expenses and other costs: (1) attributable to bodily injury, sickness, disease or death, or to injury to or destruction of property (other than the work itself), including the loss of use resulting therefrom, and (2) caused in whole or, or subject to the remainder of this paragraph, in part by any act or omission of DEVELOPER, DEVELOPER'S engineer, any subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable. If any liability, claims, damages, losses, expenses and other costs are caused in part by any act or omission (active, passive or comparative negligence included) of a party indemnified hereunder,

DEVELOPER's indemnification obligations hereunder shall only extend to the proportionate share of such liability, claims, damages, losses, expenses and other costs caused by any act or omission of DEVELOPER, DEVELOPER'S engineer, any subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable. The indemnification and agreement to hold harmless provided for hereunder shall extend to damages to or taking of property resulting from the design or construction of said improvements or the diversion of waters or from the design or construction or maintenance of drainage systems, streets, and other improvements. Acceptance of these improvements by CITY shall not constitute an assumption by CITY of any responsibility for such damage or taking.

As to any and all claims which fall within the indemnification provided for hereunder against the indemnified parties by any employee of DEVELOPER, any contractor, any subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnity obligations hereunder shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the DEVELOPER, subcontractor, supplier or other person under workers' compensation acts, disability benefit acts or other employee acts.

DEVELOPER shall also defend, indemnify and hold harmless CITY, City Council members, CITY'S engineer, and their consultants, and each of their officials, directors, officers, employees and agents from and against all losses, expenses, damages (including damages to the work itself), attorneys' fees and other costs, including costs of defense, which any of them may incur both during and after completion with respect to any latent deficiency in the design, specifications, surveying, planning, supervision, observation of or construction of the work referred to herein or any injury to a person or property, real or personal, as a result of any such latent defect or portions of the work which CITY reasonably suspects may also be defective by reason of such latent defects in the work performed by DEVELOPER or DEVELOPER'S subcontractors, or suppliers or designed by their representatives, except for any such claims arising out of the sole or active negligence or willful misconduct of the CITY, its officers, agents, employees or volunteers. Provisions of this paragraph shall remain in effect ten (10) years following acceptance of improvements by the CITY. Nothing contained herein shall limit CITY'S remedies pursuant to Code of Civil Procedure, Section 337.15. The indemnity provisions contained in this Section shall survive expiration or sooner termination of this Agreement.

5. SECURITY: With the execution of this Agreement, DEVELOPER shall furnish and deliver to CITY, at no expense to CITY, a payment security, and a performance security. Each shall be in the amount of CITY-approved estimate specified in Schedule A. Bonds shall be furnished by surety companies satisfactory to CITY, on the forms provided by CITY. No alterations or substitution of said forms shall be allowed except on approval of City Attorney. To be acceptable, surety companies must be authorized to do business in, and have an agent for, service of process in California, be on the accredited list of the United States Treasury Department, and/or have an "A" policyholder's rating and a financial rating of Class V, or better, in accordance with the current Best's Rating. The bonds shall be limited to amounts acceptable to the Treasury Department.

None of the following shall in any way affect the obligations of any surety. Each surety waives notice thereof: (a) any change, extension of time, alteration or additions to the terms of the Agreement, or the work to be performed, or the plans and specifications therefor; (b) any matters unknown to surety which might affect surety's risk, except that CITY shall advise surety

upon request of the following: (1) any written claims it receives from unpaid subcontractors or suppliers, (2) any written orders received from other public authorities charging violations of laws, ordinances or regulations, and (3) failure of DEVELOPER to comply with any written notice to correct defective work. The obligations of DEVELOPER shall not be limited by the amount of such bonds.

6. **TYPES/AMOUNT OF SECURITY:** If specified in Schedule A, in lieu of payment and performance bonds, DEVELOPER may furnish CITY either cash, a Letter of Credit, or an Agreement of Deposit or other security satisfactory to City Attorney as security for performance (see Schedule B). Said security shall be in an amount not less than 100% of the cost estimate and, in addition, for payment of those furnishing materials, labor or equipment in an amount not less than 50% of the cost estimate. Said security agreements shall be on forms furnished by CITY. No alterations or substitution of said forms shall be allowed. The obligations of DEVELOPER shall not be limited by the amount of the security required. No interest shall be paid DEVELOPER on any cash deposit made pursuant to this paragraph.

7. **COSTS AND DEPOSITS**: DEVELOPER agrees to pay CITY, on demand, the full amount of all of CITY'S costs incurred before, within or after acceptance in connection with the work and this Agreement. These costs include but are not limited to plan checking, inspection, materials furnished, attorneys' fees incurred in connection with preparing and negotiating this Agreement, and all other expenses, including engineers' and attorneys' fees of CITY, directly attributable to the work and this Agreement. These costs shall include a reasonable amount for CITY'S overhead in connection therewith, plus any applicable fees of CITY. CITY'S costs shall include the cost of inspecting and restoring other portions of the work both during and after acceptance which CITY reasonably suspects may also be defective by reason of known defects in the work or other work performed by DEVELOPER or DEVELOPER'S contractors, subcontractors, or suppliers or designed by their representatives. DEVELOPER shall deposit with the CITY, concurrently with the execution of this Agreement, such sums as the CITY established as deposits set forth in Schedule A. Should the actual expenses be in excess of the deposit set forth in Schedule A, DEVELOPER shall pay the amount of such excess on demand. Should the actual expenses be less than the estimated deposit in Schedule A, CITY shall refund the difference, without interest, to DEVELOPER within ninety (90) days of acceptance of work. CITY may terminate its activity herein if DEVELOPER fails to make additional deposits on demand. Said deposit is not a trust fund and said deposit may be co- mingled with other similar deposits.

8. **PARTIAL UTILIZATION:** Until all work has been completed and accepted by CITY and all other public authorities having jurisdiction, DEVELOPER shall be responsible for the care and maintenance of, or any damage to, the work.

When the work or any portion of it is sufficiently complete to be utilized or placed into service, CITY shall have the right, upon written notification to DEVELOPER, to utilize or allow the utilization of such portions of the work and to place or cause the placement of the operable portions into service. With this notice and commencement of utilization or operation by CITY or any other third party, DEVELOPER shall be relieved of the duty of maintaining the portions so utilized or placed into operation. However, such use and operation shall not relieve DEVELOPER of the full responsibility for completing the work in its entirety, for making good any defective work or materials, for protecting the work from damage by DEVELOPER, DEVELOPER'S engineer, any subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable, and for being responsible for damage to the work by DEVELOPER, DEVELOPER'S engineer, any subcontractor, any

supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable. Nor shall such action by CITY be deemed completion and acceptance. Further, such action shall not relieve DEVELOPER or DEVELOPER'S sureties and insurers of the provisions hereof relating to indemnity and guarantees.

9. **ACCEPTANCE OF PUBLIC IMPROVEMENTS**: Acceptance of any public improvements constituting any of the work shall be by action of the City Engineer. Neither the acceptance nor any prior inspections or failure to inspect shall constitute a waiver by CITY of any defects in the work. From and after acceptance, the public improvements constituting any of the work shall be owned, operated, and maintained by CITY. As a condition to acceptance, DEVELOPER and DEVELOPER'S contractor shall certify to CITY in writing that all of the public improvements constituting any of the work have been performed in strict conformity with the Agreement and that all costs have been paid or supplied to CITY security, satisfactory to CITY, guaranteeing such performance.

DEVELOPER shall be required to maintain the payment bond in its full amount for up to 6 months after CITY acceptance of the work. The payment bond shall secure payment to the contractor, sub- contractors, and to persons renting equipment or furnishing labor or materials. Following the 6-month period, the payment bond may either be released or reduced to an amount no less than any claims on which an action has been filed and notice given to the CITY in writing.

In addition to DEVELOPER'S other obligations under the Agreement DEVELOPER warrants all work and materials to be good quality and fit for the purpose and intended use. DEVELOPER shall also repair, replace, and restore any and all such work which may prove defective in workmanship and/or materials without expense whatsoever to CITY; ordinary wear and tear and unusual abuse or neglect excepted. DEVELOPER shall also repair, replace, and restore any other work which is displaced in correcting defective work as well as other portions of the work which CITY by reason of such defects reasonably suspects may also be defective. DEVELOPER shall provide a bond or other security satisfactory to CITY for a period of one (1) year to secure a portion of the obligations in this Section 9. Said bond or other security shall be in an amount satisfactory to CITY but in no case less than 15% of cost of the onsite and offsite work referred to on Schedule A. Said bond or other security shall in no way limit the time within which CITY may bring action for breach of this warrant (CCP 337) or action for latent defects (CCP 337.15) nor the amount of such claim or judgment.

In the event of a failure to commence with the compliance of above-mentioned conditions in this Section 9 within seven (7) calendar days after being notified in writing or failure to diligently pursue such compliance to completion, CITY is hereby authorized to proceed to have the defects repaired and made good at the expense of DEVELOPER, who hereby agrees to pay the cost and charges therefor immediately on demand.

If, in the opinion of CITY, nonconforming work creates a dangerous condition or requires immediate correction or repair to prevent further loss to CITY or to prevent interruption of operations, CITY shall attempt to give the DEVELOPER notice. If DEVELOPER cannot be contacted or does not comply with CITY'S request for correction within a reasonable time as determined by CITY, CITY may proceed to make such correction or provide such repair. The costs of such correction or repair shall be charged against DEVELOPER, who agrees to make payment for said costs upon demand.

Corrective action by CITY shall not relieve DEVELOPER or DEVELOPER'S sureties or insurers of the guarantees and indemnities of this Agreement.

This paragraph does not in any way limit CITY'S remedies pursuant to Code of Civil Procedure, Section 337 and 337.15, or the guarantee on any items for which a longer guarantee is expressly specified or on any items for which a manufacturer or supplier gives a longer guarantee period. DEVELOPER agrees to act as a co-guarantor with such manufacturer or supplier and shall furnish CITY all appropriate and available guarantee or warranty certificates upon completion of the work. No manufacturer's guarantee period shall in any way limit the liability of DEVELOPER or DEVELOPER'S sureties and insurers under the indemnity or insurance provisions of this Agreement.

10. EASEMENTS AND FEE INTERESTS: DEVELOPER shall, at DEVELOPER'S sole cost and expense, furnish CITY with appropriate easements and fee title as may be requested by CITY to required facilities sites for the entire work, free and clear of all liens, encumbrances, restrictions, and covenants other than current real property taxes then a lien but not yet payable. At DEVELOPER'S cost and expense, DEVELOPER shall furnish CITY with an acceptable title insurance policy insuring CITY has title as above required with an endorsement insuring CITY against mechanics' lien claims arising out of the performance of the work. Easements shall be in standard form acceptable to CITY, shall be not less than the width CITY determines necessary to maintain the work, and shall be executed and delivered to CITY concurrent with execution of this Agreement. Easements shall be recorded prior to CITY accepting the work or furnishing services to any portions of the property under development (other than those as may be delivered under a temporary service agreement with DEVELOPER).

11. DEVELOPER AND AGENTS: DEVELOPER shall be as fully responsible to CITY for the acts and omissions in respect of the work of DEVELOPER'S subcontractors and of the persons directly or indirectly employed by DEVELOPER'S subcontractors as DEVELOPER is for the acts and omissions of persons directly or indirectly employed by DEVELOPER. To that end, DEVELOPER shall take such steps as are reasonably necessary to ensure that its subcontractors do not take any steps in relation to the work which would cause DEVELOPER to be in breach of this Agreement and to ensure that such subcontractors shall take such steps as are reasonably necessary to ensure that they do not take any steps in relation to the work which would cause DEVELOPER to be in breach of this Agreement. To that end, DEVELOPER shall bind every subcontractor to be bound by the terms of this Agreement, as applicable and appropriate. Nothing contained in the Agreement shall create any contractual relationship between any of DEVELOPER'S subcontractors and CITY.

Consent is hereby given DEVELOPER to have the work performed by the California licensed Class A Contractor(s) named in Schedule A. DEVELOPER or DEVELOPER'S contractor may satisfy the requirements of this section by having, in lieu of said Class A license, an appropriate alternate license as determined by CITY.

12. DEFAULT BY DEVELOPER: If DEVELOPER refuses or fails to prosecute the work or any separable part thereof with such diligence as will ensure its completion within the time specified herein, or any written extension thereof, or fails to complete such work within such time, or if DEVELOPER should be adjudged a bankrupt, make a general assignment for the benefit of creditors, or if a receiver should be appointed on account of DEVELOPER'S insolvency, or if DEVELOPER or any of their subcontractors violate any of the provisions of this Agreement, or if DEVELOPER fails to make prompt payment for materials

or labor, or if DEVELOPER disregards laws, ordinances, or instructions of CITY, then CITY may thereafter serve written notice upon the DEVELOPER and DEVELOPER'S surety of its intention to declare this Agreement in default. Said notice shall contain the reasons for such intention to declare a default. Unless, within ten (10) days after the service of such notice, such violations shall cease and satisfactory arrangements for the corrections thereof be made (or in the case of any violation that would require more than ten (10) days to correct, DEVELOPER having commenced reasonably diligent steps towards correction within such ten (10) day period), this Agreement shall upon the expiration of said time be in default.

Upon this Agreement being in default as provided for herein, CITY shall serve written notice thereof upon the surety and DEVELOPER, and the surety shall have the right to take over and perform this Agreement. If the surety does not, within fifteen (15) days after the serving upon it of a notice of this Agreement being in default, give CITY written notice of its intention to take over and perform this Agreement or does not commence performance thereof within thirty (30) days from the date of CITY'S notice, CITY may take over the work and prosecute the same to the extent of completion it deems necessary by contract or by any other method it may deem advisable for the account and at the expense of DEVELOPER, and the surety shall be liable to CITY for any cost or other damage occasioned CITY thereby. In such event CITY may, without liability for so doing, take possession of, and utilize in completing such work, such materials, appliances, plants, and other property belonging to DEVELOPER that may be on the site of the work and be necessary therefor. Should surety fail to take over and diligently perform the Agreement upon DEVELOPER being in default under this Agreement, surety agrees to promptly on demand deposit with CITY such amount as CITY may reasonably estimate as the cost of completing all of DEVELOPER'S obligations. For any such work the CITY elects to complete by furnishing its own employees, materials, tools, and equipment, CITY shall receive reasonable compensation therefor, including costs of supervision and overhead.

In the event that DEVELOPER is in default under this Agreement, CITY may, at its option, elect not to complete any or all of the work and may elect not to accept any of the work already completed. If CITY elects not to accept any of the work, then all CITY'S obligations under this Agreement to DEVELOPER and the lands to be served shall terminate. CITY'S obligations to DEVELOPER and the lands to be served shall continue to the extent of any acceptance, subject to CITY'S right to offset any sums due the CITY.

The foregoing provisions are in addition to and not in limitation of any other rights or remedies available to CITY.

13. DELAY BY DEVELOPER: If the work is suspended or otherwise not continuously prosecuted for any cause whatsoever, within or without the time for completion, DEVELOPER shall, at DEVELOPER'S sole cost and expense, remove and replace all or any portion of the work already completed and inspected which CITY, in its sole discretion, determines is or can be damaged as a result of being in place while the work is suspended or otherwise not continuously being prosecuted.

14. ATTORNEYS' FEES AND COSTS: Should CITY engage an attorney to enforce any provision of this Agreement or to defend any claim brought by anyone arising out of the failure of DEVELOPER to perform any of DEVELOPER'S obligations under this Agreement, DEVELOPER shall pay all of CITY'S attorneys' fees incurred in connection therewith, with or without suit, whether or not said attorneys are in the regular employ of the CITY.

15. **REIMBURSEMENT**: Provided DEVELOPER has fully complied with all the terms of this Agreement, CITY shall, without interest, reimburse DEVELOPER to the extent set forth on a separate Reimbursement Schedule. DEVELOPER accepts as the amount and conditions governing DEVELOPER'S entitlement to reimbursement and refund under CITY'S existing rules, regulations, ordinances, and policies. If no amount is specified in Schedule A, DEVELOPER is to receive no reimbursement from CITY.

16. **FUTURE CHARGES**: Nothing in this Agreement shall relieve DEVELOPER or DEVELOPER'S successors or assigns of any obligation to pay any connection, installation, expansion or other fees, charges, or other expenses, including operation and maintenance expenses, required under any present or future established ordinances, rules, regulations and policies of CITY.

17. **ASSIGNMENT**: The performance of the Agreement may not be assigned except upon the written consent of CITY. Consent will not be given to any proposed assignment which would relieve DEVELOPER, or DEVELOPER'S sureties of their responsibilities under the Agreement unless CITY finds that assignee can perform this Agreement and provide security comparable to that provided by DEVELOPER.

18. **NOTICE**: All notices required hereunder shall be deemed served or given upon the earlier of actual receipt or deposit in the U.S. Postal Service, first class postage prepaid, addressed to DEVELOPER at the address set forth below, to the surety at the address in the security instrument, and to CITY at 69-825 Highway 111, Rancho Mirage, California 92270.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

CITY OF RANCHO MIRAGE
SUBDIVISION IMPROVEMENT AGREEMENT SIGNATURE REQUIREMENTS

(Limited Partnership / General Partnership / Corporation)

1. **WHERE PRINCIPAL IS A LIMITED PARTNERSHIP**

A. General Partner shall execute on behalf of the limited partnership.

B. General Partner shall furnish City of Rancho Mirage a copy of the recorded Certificate of Limited Partnership to authenticate the authority of the General Partner to sign on behalf of the limited partnership.

2. **WHERE PRINCIPAL IS A GENERAL PARTNERSHIP**

A. General Partner shall execute on behalf of general partnership.

B. General Partner shall furnish City of Rancho Mirage a copy of the General Partnership Agreement authenticating that the General Partner who signs the document has authority to do so.

3. **WHERE PRINCIPAL IS A CORPORATION**

A. Officer or officers shall execute on behalf of corporation.

B. Officers shall furnish City of Rancho Mirage a copy of a corporate resolution indicating that the officer or officers who sign the document are the officers of the corporation and authorized to bind the corporation to contract. Corporation requires two signatures.

For example, John Doe may sign on behalf of either partnership or the corporation as the General Partner and/or president thereof, but then, in addition, John Doe is required to sign the document individually as an individual obligor.

4. **WHERE PRINCIPAL IS A LIMITED LIABILITY COMPANY (LLC)**

A. Agreement may be executed as follows:

1. By any member, unless the articles of organization or operating agreement provide otherwise;

2. By any manager; if LLC is manager-managed, unless the articles of organization or operating agreement provide otherwise; or

3. By any officer, if the operating agreement provides for the appointment of officers, unless the articles of organization or operating agreement provide otherwise.

B. The individual(s) executing the agreement shall provide certified copies of the LLC's articles of organization and operating agreement.

By: _____
(Authorized Representative of CITY)
Richard V. Kite, Mayor

Approved as to form:

By: _____
For-Steven B. Quintanilla, City Attorney
Daniel Trevino Deputy City Attorney

ATTEST:

By: _____

Kristie Ramos, City Clerk

(SEAL IF CORPORATION)

By: _____
Mario J Gonzales

Address: 30825 Date Palm Dr. Ste C 2
Cathedral City CA 92234

Telephone No. 760 969-1400

By: _____

Address: _____

_____

Telephone: _____

By: _____

Address: _____

_____

Telephone No. _____

(SIGNATURES MUST BE NOTARIZED)

(Seal: Partnership/Corporation)

DEVELOPER: _____
Mario J Gonzales

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On 2-16-23 before me, Karen Hansen, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Mario J Gonzales
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026

Place Notary Seal and/or Stamp Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: SID Bonds Josefina
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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SCHEDULE A
SUBDIVISION IMPROVEMENT AGREEMENT

This schedule is attached to and made a part of the Subdivision Improvement Agreement between CITY and DEVELOPER for the above-referenced property.

1. Completion Date: ~~April 6, 2025~~

2. General Liability

$2,000,000	Each Occurrence (Includes Bodily Injury and Property Damage)
$1,000	Medical Expense
$1,000,000	Personal & Advertising Injury
$2,000,000	General Aggregate
$2,000,000	Products-Completed/Operations Aggregate

Automobile Liability

Combined Single Limit	$1,000,000 each accident, $2,000,000 Aggregate
Workers Compensation	Statutory

3. Approved Security Amounts:
(To be posted prior to acceptance of improvements)

Grading Bond (Total Security minus Cash Deposit)	$ 245,180.00
Performance (On-site) (100%)	$ N/A
Payment (On-site) (50%)	$ N/A
Performance (Off-site) (100%)	$ 402,490.00
Payment (Off-site) (50%)	$ 201,245.00

4. Bond Substitute Acceptable: Yes No

5. Deposit/Fee Amount — See attachment to this schedule

6. Warranty/Performance (15%)
Security Amount: ..... $ 60,373.00
(To be in place at acceptance of work)

7. Contractor(s):

CLASS A

Name and Address	License No.	Phase of Work

Reimbursement: $N/A

(If an amount is specified, see separate schedule.)

( ) Initials of CITY REPRESENTATIVE

( ) Initials of DEVELOPER or
( ) DEVELOPER REPRESENTATIVE

DEVELOPER _____

Date 2-16-23

ATTACHMENT TO SCHEDULE A
OF SUBDIVISION IMPROVEMENT AGREEMENT

Applicable fees/deposits payable by DEVELOPER prior to or concurrent with this agreement are as follows:

FEES NONREFUNDABLE

Plan Check Fee (Final Map, Grading, Hydrology, Offsite Street Improvement Plan)	$ 10,519.00
Inspection Fees (Grading Improvements, Offsite Improvements, Permit Issuance)	$ 10,288.00
Parkland Fees	$ 1,645.80
CFD Annex Fee	$ 3,228.00
TOTAL NONREFUNDABLE FEES	$ 25,680.80

FEES REFUNDABLE

Cash Grading Deposit	$ 20,000.00
Dust Control Deposit	$ 10,080.00
TOTAL REFUNDABLE DEPOSITS	$ 30,080.00

In accordance with Section 7 of this agreement, costs incurred by CITY in excess of deposit shall be billed to DEVELOPER; if less, CITY will refund.

(PS) Initials of CITY REPRESENTATIVE

( ) Initials of DEVELOPER
( ) DEVELOPER REPRESENTATIVE

DEVELOPER _____

Date 2-16-23

ATTACHMENT TO SCHEDULE A
OF SUBDIVISION IMPROVEMENTAGREEMENT

SECURITY CALCULATIONS

PM 38106 (Via Josefina)

Estimates for Bonding Purposes

Onsite Improvements		
N/A	$	N/A
Total Performance Bond (Onsite improvements)	**$**	**N/A**
Offsite Improvements		
Street Improvements (asphalt removal, paving, curb and gutter, cross gutter, sidewalk, curb ramps)	$	156,578.00
Water and Sewer	$	85,710.00
Storm Drain	$	107,704.00
Subtotal	$	349,992.00
(+) 15% contingency	$	52,498.00
Total Performance Bond (Offsite improvements)	**$**	**402,490.00**
Payment Bond = 50% of Performance Bond		
Total Payment Bond (Onsite improvements)	**$**	**N/A**
Total Payment Bond (Offsite improvements)	**$**	**201,245.00**
Warranty Bond = 15% of Performance Bond	**$**	**60,373.00**
Monumentation Bond	**$**	**4,000.00**

Estimate for Inspection Fees

Onsite Inspection Fees Due [$120 + 4% (first $50,000 of Onsite Improvements Subtotal) + 3% (remaining balance)]		N/A
Offsite Inspection Fees Due [$120 + 4% (first $50,000 of Offsite Improvements Subtotal) + 3% (remaining balance)]	$	8,533.00
Grading Inspection Fee (5.04 acres)	$	1,513.00
Total Inspection Fees	**$**	**10,046.00**

BOND NO.: 4459294
BOND FEE: $ 250.00

Executed in Duplicate

SCHEDULE B
BOND

PERFORMANCE SECURITY

SURVEY OF MONUMENTS

Map No. 38106

(*California Government Code §§ 66499* and *66499.1*)

WHEREAS, the City Council of the City of Rancho Mirage, a municipal corporation and political subdivision of the State of California ("City") and Josefina PM 38106, LLC ("Principal"), a California corporation, have entered into an agreement pursuant to California Government Code Section 66462 whereby Principal agrees to install and complete certain designated improvements, which said agreement, dated April 6, 2023, and identified as Subdivision Improvement Agreement PM 38106 ("Agreement"), is hereby incorporated by this reference as though set forth at length, and have agreed pursuant to Section 66499 of the Government Code to execute this bond to secure the performance of the following obligation:

> Principal hereby agrees to install survey monuments in accordance with any terms and conditions set forth in the Agreement, permit and the requirements and specifications of all applicable laws and ordinances. Said installation shall be completed on or before April 6, 2025 or as otherwise provided by any lawful extension of time granted by the City Council.

WHEREAS, we, the Principal and SureTec Insurance Company, as surety ("Surety"), are held and firmly bound unto the City, in the penal sum of **Four Thousand Dollars and Zero Cents ($4,000.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

WHEREAS, should Principal fail to install survey monuments in accordance with any terms and conditions set forth in the Agreement, permit and the requirements and specifications of all applicable laws and ordinances and/or should Principal fail to complete said installation of survey monuments within the time period prescribed therein or otherwise provided by any lawful extension of time granted by the City Council, the City may, at its option, cause all required work to be done in the manner required herein, and the parties executing this bond shall be firmly bound for the payment of all necessary costs therefore.

NOW, THEREFORE, we, the Principal and Surety, are held and firmly bound unto the City, in the penal sum of **Four Thousand Dollars and Zero Cents ($4,000.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bounded Principal, his or its heirs, executors, administrators, successors, or assigns, shall in all things stand to and abide by, and

well and truly keep and perform the foregoing work, on his or their part, to be kept and performed at the time and in the manner specified above, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect, at least until the time City accepts the work required to be performed by Principal under the Agreement, notwithstanding whether or not Principal should abandon its obligations under the Agreement without having commenced construction of any improvements and whether such abandonment arises from foreclosure upon Principal's property or otherwise.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the work to be performed hereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the scope of work to be performed or to the specifications.

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IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety named herein, on February 16, 2023.

APPROVED AS TO CONTENT:

Signature

Ryan Stendell, Dir. of Public Works
Name, Title

Rancho Mirage, CA
City

APPROVED AS TO FORM:

Signature

Daniel Trevino Deputy City Attorney
Name, Title

City of Rancho Mirage
City

PRINCIPAL

Josefina PM 38106, LLC
Company

30875 Date Palm Drive, Ste C-2, Cathedral City, CA 92234
Address

Signature

Name Mario J. Gonzales

Title President

SURETY

SureTec Insurance Company
Company

2103 CityWest Blvd., Suite 1300,Houston, TX 77042
Address

Signature

Vanessa Copeland
Name

Attorney-in-Fact
Title

Note: Principal and Surety's signatures must be notarized and 2 originals must be executed.

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On 2-16-23 before me, Karen Hansen, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Mario J Gonzales
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026
XPG1 XPG1

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: S.I.D. & Bonds Josefina

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — CIVIL CODE 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

On 2/16/23 before me, Lisa Pellerito, Notary Public,

personally appeared Vanessa Copeland
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/their~~ authorized capacity(ies), and that by ~~his/her/their~~ signature(~~s~~) on the instrument the person(s), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

LISA PELLERITO
Notary Public - California
Orange County
Commission # 2383234
My Comm. Expires Nov 16, 2025

Place Notary Seal Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Lisa Pellerito
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent and reattachment of this form to another document.

Description of Attached Document

Type or Title of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Vanessa Copeland

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☒ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

POA# 510842

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Eric Lowey, Mark Richardson, Kevin Cathcart, Vanessa Copeland, Jennifer Grenrood, Natassia Smith, Lisa Pellerito, Ellie Peck, Terah Lane

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided; however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

Fifteen Million and 00/100 Dollars ($15,000,000.00)

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 2nd day of December 2021 .

SureTec Insurance Company

By: _____
Michael C. Keimig, President

SEAL

Markel Insurance Company

By: _____
Robin Russo, Senior Vice President

Commonwealth of Virginia
County of Henrico SS:

On this 2nd day of December 2021 A. D., before me, a Notary Public of the Commonwealth of Virginia, in and for the County of Henrico, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the proceeding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Henrico, the day and year first above written.

DONNA DONAVANT NOTARY PUBLIC MY COMMISSION NUMBER 7063968 COMMONWEALTH OF VIRGINIA

By: _____
Donna Donavant, Notary Public
My commission expires 1/31/2023

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 16th day of February, 2023.

SureTec Insurance Company

By: _____
M. Brent Beaty, Assistant Secretary

Markel Insurance Company

By: _____
Richard R. Grinnan, Vice President and Secretary

Any Instrument Issued in excess of the penalty stated above is totally void and without any validity. 510842
For verification of the authority of this Power you may call (713)812-0800 on any business day between 8:30 AM and 5:00 PM CST.

BOND NO. : 4459296
BOND FEE : $ 5,404.00

Executed in Duplicate

BOND

PERFORMANCE SECURITY

GRADING

Map No. 38106

(California Government Code §§ *66499* and *66499.1*)

WHEREAS, the City Council of the City of Rancho Mirage, a municipal corporation and political subdivision of the State of California ("City") and Josefina PM 38106, LLC (hereinafter "Principal"), a California corporation, have entered into an agreement pursuant to California Government Code Section 66462 whereby Principal agrees to install and complete certain designated improvements, which said agreement, dated April 6, 2023 and identified as Subdivision Improvement Agreement PM 38106 ("Agreement"), is hereby incorporated by this reference as though set forth at length, and have agreed pursuant to Section 66499 of the Government Code to execute this bond to secure the performance of the following obligation:

> Principal hereby agrees to conduct its grading activities in accordance with the plans and specifications prepared by Heitec Consulting, registered Civil Engineer, the terms and conditions set forth in the grading permit issued by the Office of the Civil Engineer of the City, and all applicable laws and ordinances.

WHEREAS, we, the Principal and SureTec Insurance Company, as surety ("Surety"), are held and firmly bound unto the City, in the penal sum of **Two Hundred Forty Five Thousand One Hundred Eighty Dollars and Zero Cents ($245,180.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

WHEREAS, should Principal fail to conduct its grading activities in accordance with the plans and specifications prepared by Heitec Consulting, registered Civil Engineer, the terms and conditions set forth in the grading permit issued by the Office of the Civil Engineer of the City, the Agreement, and all applicable laws and ordinances, the City may, at its option, cause all required work to be done in the manner required herein and the parties executing this bond shall be firmly bound for the payment of all necessary costs therefor.

NOW THEREFORE, we, the Principal and Surety, are held and firmly bound unto the City, in the penal sum of **Two Hundred Forty Five Thousand One Hundred Eighty Dollars and Zero Cents ($245,180.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that if the above bounded principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the foregoing activity, on his or their part, to be kept and performed at the time and in the manner specified above, and in all respects according to their true intent

and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect, at least until the time City accepts the work required to be performed by Principal under the Agreement, notwithstanding whether or not Principal should abandon its obligations under the Agreement without having commenced construction of any improvements and whether such abandonment arises from foreclosure upon Principal's property or otherwise.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety hereby stipulates and agrees that no change, extension of time, alteration or addition to the work to be performed hereunder or the specifications accompanying the same, or any matters unknown to Surety which might affect Surety's risk, shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the scope of the work to be performed or to the specifications.

[THIS PORTION OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety named herein, on February 16, 2023.

APPROVED AS TO CONTENT:

Signature

Ryan Stendell, Dir. of Public Works

Name, Title

Rancho Mirage, CA

City

PRINCIPAL

Josefina PM 38106, LLC

Company

30875 Date Palm Drive, Ste C-2, Cathedral City, CA 92234

Address

30875 Date Palm Dr. Ste C2 Cathedral City CA 92234

Signature

Mario J Gonzales

Name

President

Title

APPROVED AS TO FORM:

Signature

Daniel Trevino, Deputy City Attorney

Name, Title

City of Rancho Mirage.

City

SURETY

SureTec Insurance Company

Company

2103 CityWest Blvd., Suite 1300, Houston, TX 77042

Address

Signature

Vanessa Copeland

Name

Attorney-in-Fact

Title

Note: Principal and Surety's signatures must be notarized and 2 originals must be executed.

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On 2-16-23 before me, Karen Hansen, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Mario J Gonzales
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026

Place Notary Seal and/or Stamp Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: SID & Bonds Josefina
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — CIVIL CODE 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

On 2/16/23 before me, Lisa Pellerito, Notary Public,

personally appeared Vanessa Copeland
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

LISA PELLERITO
Notary Public - California
Orange County
Commission # 2383234
My Comm. Expires Nov 16, 2025

Place Notary Seal Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent and reattachment of this form to another document.

Description of Attached Document

Type or Title of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Vanessa Copeland

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☒ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

POA# 510842

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Eric Lowey, Mark Richardson, Kevin Cathcart, Vanessa Copeland, Jennifer Grenrood, Natassia Smith, Lisa Pellerito, Ellie Peck, Terah Lane

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided; however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

Fifteen Million and 00/100 Dollars ($15,000,000.00)

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 2nd day of December 2021 .

SureTec Insurance Company

By: _____
Michael C. Keimig, President

Markel Insurance Company

By: _____
Robin Russo, Senior Vice President

Commonwealth of Virginia
County of Henrico SS:

On this 2nd day of December 2021 A. D., before me, a Notary Public of the Commonwealth of Virginia, in and for the County of Henrico, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the proceeding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Henrico, the day and year first above written.

DONNA DONAVANT NOTARY PUBLIC MY COMMISSION NUMBER 7063968 COMMONWEALTH OF VIRGINIA

By: _____
Donna Donavant, Notary Public
My commission expires 1/31/2023

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 16th day of February, 2023.

SureTec Insurance Company

By: _____
M. Brent Beaty, Assistant Secretary

Markel Insurance Company

By: _____
Richard R. Grinnan, Vice President and Secretary

Any Instrument Issued in excess of the penalty stated above is totally void and without any validity. 510842
For verification of the authority of this Power you may call (713)812-0800 on any business day between 8:30 AM and 5:00 PM CST.

BOND NO. : 4459295
BOND FEE: $ 8,550.00

Executed in Duplicate

BOND

PERFORMANCE SECURITY

SUBDIVISION IMPROVEMENTS (OFF-SITE)

Map No. 38106

(*California Government Code §§ 66499* and *66499.1*)

WHEREAS, the City Council of the City of Rancho Mirage, a municipal corporation and political subdivision of the State of California ("City") and Josefina PM 38106, LLC, a California corporation ("Principal"), have entered into an agreement pursuant to California Government Code Section 66462 whereby Principal agrees to install and complete certain designated improvements, which said agreement, dated April 6, 2023, and identified as Subdivision Improvement Agreement PM 38106 ("Agreement"), is hereby incorporated by this reference as though set forth at length; and

WHEREAS, under the terms of said Agreement, Principal is required before commencing performance of the work, to file a good and sufficient bond for the faithful performance of said Agreement; and

WHEREAS, SureTec Insurance Company ("Surety") is a Texas and duly licensed to conduct general surety business in the State of California.

NOW, THEREFORE, we, Principal and Surety, are held firmly bound unto the City in the performance of the aforesaid Agreement in the penal sum of **Four Hundred Two Thousand Four Hundred Ninety Dollars and Zero Cents ($402,490.00)** lawful money of the United States for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally, firmly by these presents.

The condition of this obligation is such that if Principal, its heirs, executors, administrators, successors, or assigns, shall in all things to and abide by, and well and truly keep and perform the covenants, conditions and provisions in the said Agreement and any alteration thereof made as therein provides, on his or her part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect at least until the time City accepts the work required to be performed by Principal under the Agreement, notwithstanding whether or not Principal should abandon its obligations under the Agreement without having commenced construction of any improvements and whether such abandonment arises from foreclosure upon Principal's property or otherwise.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of said Agreement or the work to be performed thereunder or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Agreement or to the work or to the specifications.

[THIS PORTION OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety named herein, on February 16, 2023.

APPROVED AS TO CONTENT:

Signature

Ryan Stendell, Dir. of Public Works

Name, Title

Rancho Mirage, CA

City

PRINCIPAL

Josefina PM 38106, LLC

Company

30875 Date Palm Drive, Ste C-2, Cathedral City, CA 92234

Address

Signature

Name

Title

APPROVED AS TO FORM:

Signature

Daniel Trevino, Deputy City Attorney

Name, Title

City of Rancho Mirage

City

SURETY

SureTec Insurance Company

Company

2103 CityWest Blvd., Suite 1300,Houston, TX 77042

Address

Signature

Vanessa Copeland

Name

Attorney-in-Fact

Title

Note: Principal and Surety's signatures must be notarized and 2 originals must be executed.

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On 2-16-23 before me, Karen Hansen, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Mario J Gonzales
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: S.I.D. & Bonds Josefina
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name:	Signer's Name:
☐ Corporate Officer – Title(s):	☐ Corporate Officer – Title(s):
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer is Representing:	Signer is Representing:

©2018 National Notary Association

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — CIVIL CODE 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

On 2/16/23 before me, Lisa Pellerito, Notary Public,

personally appeared Vanessa Copeland
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(ies), and that by ~~his~~/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

LISA PELLERITO
Notary Public - California
Orange County
Commission # 2383234
My Comm. Expires Nov 16, 2025

Place Notary Seal Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent and reattachment of this form to another document.

Description of Attached Document

Type or Title of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Vanessa Copeland

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☒ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

POA# 510842

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Eric Lowey, Mark Richardson, Kevin Cathcart, Vanessa Copeland, Jennifer Grenrood, Natassia Smith, Lisa Pellerito, Ellie Peck, Terah Lane

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided; however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

Fifteen Million and 00/100 Dollars ($15,000,000.00)

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 2nd day of December 2021 .

SureTec Insurance Company

By: _____
Michael C. Keimig, President

Markel Insurance Company

By: _____
Robin Russo, Senior Vice President

Commonwealth of Virginia
County of Henrico SS:

On this 2nd day of December 2021 A. D., before me, a Notary Public of the Commonwealth of Virginia, in and for the County of Henrico, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the proceeding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Henrico, the day and year first above written.

DONNA DONAVANT NOTARY PUBLIC MY COMMISSION NUMBER 7083968 COMMONWEALTH OF VIRGINIA

By: _____
Donna Donavant, Notary Public
My commission expires 1/31/2023

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 16th day of February, 2023.

SureTec Insurance Company

By: _____
M. Brent Beaty, Assistant Secretary

Markel Insurance Company

By: _____
Richard R. Grinnan, Vice President and Secretary

Any Instrument Issued in excess of the penalty stated above is totally void and without any validity. **510842**
For verification of the authority of this Power you may call (713)812-0800 on any business day between 8:30 AM and 5:00 PM CST.

BOND NO. : 4459295
BOND FEE: listed on performance bond

Executed in Duplicate

BOND

PAYMENT SECURITY

LABOR AND MATERIAL (OFF-SITE)

Map No. 38106

(*California Government Code §§ 66499 and 66499.2*)

WHEREAS, the City Council of the City of Rancho Mirage, a municipal corporation and political subdivision of the State of California ("City") and **JOSEFINA PM 38106, LLC**, a California limited liability company ("Principal"), have entered into an agreement pursuant to California Government Code Section 66462 whereby Principal agrees to install and complete certain designated improvements, which said agreement, dated Agt 1 / 6/2023, and identified as Subdivision Improvement Agreement PM 38106 ("Agreement"), is hereby incorporated by this reference as though set forth at length; and

WHEREAS, under the terms of said Agreement, Principal is required before commencing performance of the work, to file a good and sufficient payment bond with the City to secure claims to which reference is made in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code; and

WHEREAS, SureTec Insurance Company ("Surety") is a Texas Corporation and duly licensed to conduct general surety business in the State of California.

NOW, THEREFORE, Principal and Surety, their heirs, representatives, successors and assigns, jointly and severally, are held firmly bound unto the City and all contractors, subcontractors, laborers, material men and other persons employed in the performance of the aforesaid Agreement and referred to in Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code in the sum of **Two Hundred One Thousand Two Hundred Forty Five Dollars and Zero Cents ($201,245.00)** lawful money of the United States for material furnished or labor thereon of any kind, or for amounts due under the Unemployment Insurance Act with respect to such work or labor, that Surety will pay the same in an amount not exceeding the amount herein above set forth, and also in case suit is brought upon this bond, will pay, in addition to the face amount thereof, costs and reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, to be awarded and fixed by the court, and to be taxed as costs and to be included in the judgment therein rendered.

Surety agrees that it shall pay the amounts due City and diligently perform the Agreement upon Principal's default after notice and within the time specified in the Agreement. If Surety fails to perform within the times specified in the Agreement, Surety shall promptly on demand deposit with City such amount as City may reasonably estimate as the cost of completing all of Principal's obligations. Surety's obligation for payment herein shall extend, notwithstanding any controversy between Principal and City regarding Principal's failure under the Agreement. Principal and Surety agree that any payment by Surety pursuant to this paragraph should be conclusively presumed between the parties herein to relieve, as demanded, Surety's obligation herein and shall be deemed proper payment as between Principal and Surety.

It is hereby expressly stipulated and agreed that this bond shall inure to the benefit of any and all persons, companies and corporations entitled to file claims under Title 3 (commencing with Section 9000) of Part 6 of Division 4 of the Civil Code, so as to give a right of action to them or their assigns in any suit brought upon this bond.

Should the condition of this bond be fully performed, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect, at least until the time City accepts the work required to be performed by Principal under the Agreement, notwithstanding whether or not Principal should abandon its obligations under the Agreement without having commenced construction of any improvements and whether such abandonment arises from foreclosure upon Principal's property or otherwise.

Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of said Agreement or the specifications accompanying the same shall in any manner affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the Agreement or to the work or to the specifications.

[THIS PORTION OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, this instrument has been duly executed by Principal and Surety named herein, on February 16, 2023.

APPROVED AS TO CONTENT:

Signature

Ryan Stendell, Dir. of Public Works

Name, Title

Rancho Mirage, CA

City

PRINCIPAL

Josefina PM 38106, LLC

Company

30875 Date Palm Drive, Ste C-2, Cathedral City, CA 92234

Address

Signature

Name

Title

APPROVED AS TO FORM:

Signature

Daniel Trevino, Deputy City Attorney

Name, Title

City of Rancho Mirage.

City

SURETY

SureTec Insurance Company

Company

2103 CityWest Blvd, Suite 1300, Houston, TX 77042

Address

Signature

Vanessa Copeland

Name

Attorney-in-Fact

Title

Note: Principal and Surety's signatures must be notarized and 2 originals must be executed.

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On February 22, 2023 *Date* before me, Karen Hansen Notary Public *Here Insert Name and Title of the Officer*,

personally appeared Mario J. Gonzales *Name(s) of Signer(s)*,

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: Payment Security Payment Bond. Josefina
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

©2018 National Notary Association

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — CIVIL CODE 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

On 2/21/22 before me, Lisa Pellerito, Notary Public,

personally appeared Vanessa Copeland
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that ~~he/she/they~~ executed the same in ~~his/her/their~~ authorized capacity(ies), and that by ~~his/her/their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

LISA PELLERITO
Notary Public - California
Orange County
Commission # 2383234
My Comm. Expires Nov 16, 2025

Place Notary Seal Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: _____
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent and reattachment of this form to another document.

Description of Attached Document

Type or Title of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Vanessa Copeland

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☒ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

POA# 510842

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Eric Lowey, Mark Richardson, Kevin Cathcart, Vanessa Copeland, Jennifer Grenrood, Natassia Smith, Lisa Pellerito, Ellie Peck, Terah Lane

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided; however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

Fifteen Million and 00/100 Dollars ($15,000,000.00)

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 2nd day of December 2021 .

SureTec Insurance Company

By: _____
Michael C. Keimig, President

SURETEC INSURANCE COMPANY — TEXAS

MARKEL INSURANCE COMPANY — CORPORATE SEAL — ILLINOIS

Markel Insurance Company

By: _____
Robin Russo, Senior Vice President

Commonwealth of Virginia
County of Henrico SS:

On this 2nd day of December 2021 A. D., before me, a Notary Public of the Commonwealth of Virginia, in and for the County of Henrico, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the proceeding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Henrico, the day and year first above written.

DONNA DONAVANT NOTARY PUBLIC MY COMMISSION NUMBER 7063968 COMMONWEALTH OF VIRGINIA

By: _____
Donna Donavant, Notary Public
My commission expires 1/31/2023

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 16th day of February, 2023.

SureTec Insurance Company

By: _____
M. Brent Beaty, Assistant Secretary

Markel Insurance Company

By: _____
Richard R. Grinnan, Vice President and Secretary

Any Instrument Issued in excess of the penalty stated above is totally void and without any validity. **510842**
For verification of the authority of this Power you may call (713)812-0800 on any business day between 8:30 AM and 5:00 PM CST.

BOND NO. : 4459295
BOND FEE : $ 8,550.00

Executed in Duplicate

BOND

PERFORMANCE SECURITY

GUARANTEE REPAIR AND MAINTENANCE OF ALL IMPROVEMENTS

Map No. 38106

(*California Government Code* §§ *66499* and *66499.1*)

WHEREAS, the City Council of the City of Rancho Mirage, a municipal corporation and political subdivision of the State of California (hereinafter "City"), and Josefina PM 38106, LLC (hereinafter "Principal"), a California corporation, have entered into an agreement pursuant to California Government Code Section 66462 whereby Principal agrees to install and complete certain designated improvements, which said agreement, dated April 6, 2023 and identified as Subdivision Improvement Agreement PM 38106 ("Agreement"), is hereby incorporated by this reference as though set forth at length, and have agreed pursuant to Section 66499 of the Government Code to execute this bond to secure the performance of the following obligation:

> Principal hereby agrees to guarantee the material and workmanship relative to the installation of all improvements in and adjoining subject property against all defects and to promptly perform work and supply material as required by the City which are needed to repair or replace such defective work and material.

WHEREAS, we, the Principal and SureTec Insurance Company, as surety ("Surety"), are held and firmly bound unto the City, in the penal sum of **Sixty Thousand Three Hundred Seventy Three Dollars and Zero Cents ($60,373.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents.

WHEREAS, should Principal fail to promptly repair and replace materials or work required to be done by it and in accordance with the Agreement and all applicable laws and ordinances and/or should Principal fail to complete said repair and replacement work within the time allowed by the City, the City may, at its option, cause all required work to be done in the manner required herein and the parties executing this bond shall be firmly bound for the payment of all necessary costs therefore.

NOW THEREFORE, we, the Principal and Surety, are held and firmly bound unto the City, in the penal sum of **Sixty Thousand Three Hundred Seventy Three Dollars and Zero Cents ($60,373.00)** lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, successors, executors and administrators, jointly and severally, firmly by these presents. Surety shall guarantee replacement and repair of improvements for a period of one (1) year following final acceptance of said improvements.

The condition of this obligation is such that if the above bounded Principal, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and

well and truly keep and perform the foregoing activity, on his or their part, to be kept and performed at the time and in the manner specified above, and in all respects according to their true intent and meaning, and shall indemnify and save harmless the City, its officers, agents and employees, as therein stipulated, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect, at least until the time City accepts the work required to be performed by Principal under the Agreement, notwithstanding whether or not Principal should abandon its obligations under the Agreement without having commenced construction of any improvements and whether such abandonment arises from foreclosure upon Principal's property or otherwise.

As part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees, including reasonable attorney's fees, incurred by the City in successfully enforcing such obligation, all to be taxed as costs and included in any judgment rendered.

Surety hereby stipulates and agrees that no change, extension of time, alteration, or addition to the work to be performed hereunder or the specifications accompanying the same shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the scope of the work to be performed or to the specifications.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, this instrument has been duly executed by the Principal and Surety above named, on February, 16, 20 23

APPROVED AS TO CONTENT:

Signature

Ryan Stendell, Dir. of Public Works
Name, Title

Rancho Mirage, CA
City

PRINCIPAL

Josefina PM 38106, LLC
Company

30875 Date Palm Drive, Ste C-2, Cathedral City, CA 92234
Address

Signature

Mario J Ganzales
Name

President
Title

APPROVED AS TO FORM:

Signature

Daniel Trevino, Deputy City Attorney
Name, Title

City of Rancho Mirage.
City

SURETY

SureTec Insurance Company
Company

2103 CityWest Blvd., Suite 1300, Houston, TX 77042
Address

Signature

Vanessa Copeland
Name

Attorney-in-Fact
Title

Note: Principal and Surety's signatures must be notarized and 2 originals must be executed.

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Riverside }

On 2-16-23 before me, Karen Hansen, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Mario J Gonzales
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

KAREN HANSEN
COMM. #2387946
NOTARY PUBLIC • CALIFORNIA
RIVERSIDE COUNTY
Commission Expires JANUARY 16, 2026

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Karen Hansen
Signature of Notary Public

Place Notary Seal and/or Stamp Above

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document
Title or Type of Document: S.I.D. & Bonds Josefina
Document Date: _____ Number of Pages: _____
Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer – Title(s): _____	☐ Corporate Officer – Title(s): _____
☐ Partner – ☐ Limited ☐ General	☐ Partner – ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer is Representing: _____	Signer is Representing: _____

©2018 National Notary Association

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT — CIVIL CODE 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

State of California)

County of Orange)

On 2/16/23 before me, Lisa Pellerito, Notary Public,

personally appeared Vanessa Copeland
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that ~~he~~/she/~~they~~ executed the same in ~~his~~/her/~~their~~ authorized capacity(~~ies~~), and that by ~~his~~/her/~~their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

LISA PELLERITO
Notary Public - California
Orange County
Commission # 2383234
My Comm. Expires Nov 16, 2025

Place Notary Seal Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature: Lisa Pellerito
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent and reattachment of this form to another document.

Description of Attached Document

Type or Title of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: Vanessa Copeland

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☒ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
- ☐ Corporate Officer – Title(s): _____
- ☐ Partner: ☐ Limited ☐ General
- ☐ Attorney in Fact
- ☐ Trustee
- ☐ Guardian or Conservator
- ☐ Other: _____

Signer Is Representing: _____

POA# 510842

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Eric Lowey, Mark Richardson, Kevin Cathcart, Vanessa Copeland, Jennifer Grenrood, Natassia Smith, Lisa Pellerito, Ellie Peck, Terah Lane

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided; however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

Fifteen Million and 00/100 Dollars ($15,000,000.00)

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, Senior Vice President, Vice President, Assistant Vice President, Secretary, Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 2nd day of December 2021 .

SureTec Insurance Company

By: _____
Michael C. Keimig, President

Markel Insurance Company

By: _____
Robin Russo, Senior Vice President

Commonwealth of Virginia
County of Henrico SS:

On this 2nd day of December 2021 A. D., before me, a Notary Public of the Commonwealth of Virginia, in and for the County of Henrico, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the proceeding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Henrico, the day and year first above written.

DONNA DONAVANT NOTARY PUBLIC MY COMMISSION NUMBER 7063968 COMMONWEALTH OF VIRGINIA

By: _____
Donna Donavant, Notary Public
My commission expires 1/31/2023

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 16th day of February, 2023.

SureTec Insurance Company

By: _____
M. Brent Beaty, Assistant Secretary

Markel Insurance Company

By: _____
Richard R. Grinnan, Vice President and Secretary

Any Instrument Issued in excess of the penalty stated above is totally void and without any validity. **510842**
For verification of the authority of this Power you may call (713)812-0800 on any business day between 8:30 AM and 5:00 PM CST.

CERTIFICATION OF ACCURATE INSURANCE INFORMATION

I certify (or declare) under the penalty of perjury under the laws of the State of California that all the information contained in the insurance certificate attached hereto is true and correct, and that I make such representation knowingly based on my own independent investigation and verification of the information stated therein. Furthermore, I acknowledge and agree that communicating or conveying information in a written instrument to the City of Rancho Mirage or to any officer, employee or agent thereof for the purpose of obtaining any ministerial or discretionary permit, entitlement, license or privilege that I know is false or misleading is a misdemeanor punishable by fine up to one thousand dollars ($1,000) and/or up to six (6) months in jail, and in addition, shall render such permit, entitlement, license or privilege null and void. Rancho Mirage, Cal., Municipal Code §§9.12.010-9.12.020, 14.110.100.

2-27-23 Sal Saudoval
(Date) (Signature)

ATTACHMENT 3

Standard Agreement for Subdivision Improvements
Extension Request Form

Date: October 20, 2025

The following Tract/Parcel(s) numbers that are listed below will soon exceed the completion date according to the Standard Agreement executed on April 6, 2023.
PM 38106 (Via Josefina)

To avoid the Standard Agreement from being in default and risking the **loss of securities**, an extension must be requested thirty (30) days prior to the expiration date, according to the Rancho Mirage Municipal Code, Title 16.20.110, Completion of Improvements. Please **submit a detailed construction completion schedule** for the improvements along with this form, to justify the extension, **within 15 days** from the date above. Your request will be reviewed and, if valid, will be presented to the City Council for consideration. There will be a $500.00 administrative fee associated with the processing of the extension.

Please complete the following information:

Name/Phone No.: Mario J. Gonzales, office 760 969-1400 cell 760 250-8611

Tract Number(s): PM 38106

Owner(s): Josefina PM 38106, LLC

Original Completion Date: April 6, 2025

New Completion Date Requested: October 6 2026

Brief Reason for Extension: Utilities Delays Economy

10/20/25

Please send this form with supporting documentation to:

CITY OF RANCHO MIRAGE
69-825 HIGHWAY 111
RANCHO MIRAGE, CA 92270
ATTN: JEFF BENSON

Josefina PTM 38106 Offsite Schedule

152 days Mon 1/26/26 Tue 9/1/26 **Completion Date**

1.	PRE-WATER	Tue 2/17/26
2.	GRADING	Tue 3/24/26
3.	EXPORT DIRT	Tue 4/14/26
4.	SEWER	Tue 5/5/26
5.	STORM DRAIN	Tue 5/19/26
6.	CURB & GUTTER	Tue 6/9/26
7.	WATER	Tue 6/30/26
8.	DRY UTILITIES	Tue 8/4/26
9.	CROSS GUTTER SPANDREL	Tue 8/11/26
10.	BASE FINE GRADE	Tue 8/18/26
11.	PAVE	Tue 8/25/26
12.	FINAL INSPECTION	Tue 9/1/26

30-875 Date Palm Drive, Suite C • Cathedral City, CA 92234
Office: (760) 969 -1400 • Fax: (760) 322-6333 • info@ghacompanies.com • www.ghacompanies.com

ATTACHMENT 4

AMENDMENT OF SUBDIVISION IMPROVEMENT AGREEMENT

[PARCEL MAP 38106]

This Amendment of Subdivision Improvement Agreement ("Amendment") is entered into as of _____ __, 2025, by and between the City of Rancho Mirage ("City"), a municipal corporation located in Riverside County, California, and Josefina PM 38106, LLC ("Developer").

RECITALS

WHEREAS, City and Developer previously entered into that certain Subdivision Improvement Agreement dated April 6, 2023 ("Agreement") for Developer's construction of public improvements ("Improvements") upon the real property located in the City of Rancho Mirage, California, as more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference; and

WHEREAS, Schedule "A" of the Agreement provided that Developer must complete construction of the Improvements by no later than April 16, 2025 ("Completion Date"); and

WHEREAS, pursuant to Section 16.20.110 of the Rancho Mirage Municipal Code ("City Code"), Developer requested that City grant an extension of the Completion Date to November 6, 2026, as set forth in the documentation attached hereto and incorporated herein by this reference as Exhibit "B"; and

WHEREAS, pursuant to Section 66462(c) of the California Government Code and Section 16.20.090 of the City Code, Developer executed various security instruments ("Security Instruments") in connection with the Agreement to ensure completion of construction of the Improvements and to ensure payment to laborers and suppliers of materials; and

WHEREAS, the parties acknowledge that City would not approve this Amendment without assurances that the Security Instruments are still in effect and will remain in effect until City accepts the Improvements; and

WHEREAS, this Amendment was approved by the City Council during its meeting of November 6, 2025.

NOW THEREFORE, in consideration of the covenants, conditions and promises contained herein, the parties agree as follows:

AGREEMENT

1. Recitals. The Recitals set forth above are hereby incorporated into this Amendment by this reference as though fully set forth herein.

2. Schedule "A." Item 1 of Schedule "A" of the Agreement is hereby amended to reflect a Completion Date of November 6, 2026.

3. Attorney's Fees. In the event any action, suit or proceeding is brought for the enforcement of, or the declaration of any right or obligation pursuant to this Amendment or as a result of any alleged breach of any provision of this Amendment, the prevailing party in such suit or proceeding shall be entitled to recover its costs and expenses, including reasonable attorney's fees, and any judgment or decree rendered in such a proceeding shall include an award thereof.

4. Counterparts. This Amendment may be executed in several counterparts, each of which shall be deemed to be an original and shall constitute one and the same instrument and shall become binding upon the parties when at least a copy hereof shall have been signed by the parties hereto.

5. Conflicts. In the event there exists any conflicts between the terms of the Agreement and this Amendment, the Amendment shall be superseding.

6. Remaining Provisions. All other remaining terms and conditions of the Agreement shall remain unchanged.

[THE REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, City and Developer have executed this Amendment on the date set forth herein above.

CITY OF RANCHO MIRAGE

By:_____
Ted Weill, Mayor

JOSEFINA PM 38106, LLC

By:_____

APPROVED AS TO CONTENT:

_____
Ryan Stendell, Director of
Public Works

ATTEST:

_____
Kristie Ramos, City Clerk

APPROVED AS TO FORM:

_____
Colin D. Kirkpatrick, City Attorney

EXHIBIT “A”

SUBDIVISION IMPROVEMENT AGREEMENT

SEE ATTACHED

EXHIBIT “B”

EXTENSION FORM AND SUPPORTING DOCUMENTATION

SEE ATTACHED

City Council Staff Report

Quarterly Treasurer's Report for the Quarter Ending September 30, 2025

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5H.
Presented To	**Presented By**
Mayor and City Council	Joseph Carpenter, Assistant Director of Administrative Services

RECOMMENDED ACTION

Receive and File the September 30, 2025, Quarterly Treasurer's Report.

DISCUSSION

Attached is the Quarterly Treasurer's Report for the quarter ending September 30, 2025. This report is submitted to City Council for the purpose of providing detailed information over all monies overseen by the City Treasurer.

A provision of the Statement of Investment Policy readopted February 20, 2025 via Resolution 2025-01 pertains to investment reporting to City Council on a quarterly basis (Section VIII). It is the City's policy to achieve a market rate of return on public funds while minimizing risks and preserving capital. City Investments are analyzed on a Total Return basis. Total Return takes into account interest income, realized gains and losses, and unrealized gains and losses due to change in market value during the period measured. When portfolios have unrealized losses, total returns will be lower.

The City's Total Return is compared to the Bank of America Merrill Lynch 1-5 Year U.S. Treasury Index, the table on the next page summarizes the comparison.

Total Return for Periods Ending September 30, 2025				
	Duration (years)	Past Quarter (Unannualized)	Past 6 Months (Unannualized)	Past Year (Annualized)
City of Rancho Mirage	2.51	1.30%	2.90%	4.35%
Bank of America 1-5 Year U.S. Treasury Index	2.48	1.14%	2.52%	3.77%

It should be noted, on an accrual basis the city had $945,848.55 in quarterly earnings – see Page 5 of this staff report for details.

Definitions:

Total Return: Total return takes into account interest income, realized gains and losses, and unrealized gains and losses due to change in market value during the period measured.

Duration: Duration is the percentage change in the price of a security for a 1% change in the security's yield.

Yield: Yield to maturity is a forward-looking earnings indicator that assumes all coupons will be reinvested at the security's yield.

Attachments

Attachment 1 - 09/30/2025 Quarterly Treasurer’s Report

ATTACHMENT 1

City of Rancho Mirage
Investment Summary
as of September 30, 2025

Sector	Average Maturity	Par Amount	Original Cost	Adjusted Cost	Market Value	Coupon	Yield to Maturity
City Operating Funds							
Checking Account	1 Day	3,261,942.96	3,261,942.96	3,261,942.96	3,261,942.96	0.00%	0.00%
First American Treasury Fund	1 Day	252,296.16	252,296.16	252,296.16	252,296.16	4.36%	4.36%
CAMP	1 Day	628,872.03	628,872.03	628,872.03	628,872.03	4.36%	4.36%
LAIF - City	1 Day	413,192.07	413,192.07	413,192.07	413,192.07	4.34%	4.34%
U.S. Treasuries	2.61 Years	43,660,000.00	42,429,451.81	42,882,113.47	43,000,113.46	2.69%	3.56%
Federal Agencies	1.36 Years	680,000.00	609,014.80	658,453.28	654,010.40	0.83%	3.36%
Corporate Notes	2.62 Years	19,390,000.00	19,311,067.00	19,324,600.77	19,638,416.51	0.00%	4.66%
Municipal Bonds	2.18 Years	605,000.00	605,000.00	605,000.00	614,062.48	4.56%	4.56%
Bank Notes	2.47 Years	1,250,000.00	1,241,743.75	1,244,655.71	1,269,935.62	5.23%	5.43%
ACMBS	2.75 Years	19,495,174.50	19,069,001.88	19,248,194.59	19,593,144.24	0.00%	4.74%
City Operating Total	**2.68 Years**	**89,636,477.72**	**87,821,582.46**	**88,519,321.04**	**89,325,985.93**		**3.97%**
Successor Agency							
First American Treasury Fund	1 Day	60,076.04	60,076.04	60,076.04	60,076.04	3.80%	3.80%
LAIF - Successor Agency	1 Day	2,264,445.63	2,264,445.63	2,264,445.63	2,264,445.63	4.34%	4.34%
U.S. Treasuries	2.50 Years	1,585,000.00	1,443,261.92	1,477,900.17	1,496,091.01	0.00%	4.12%
Federal Agencies	0.00 Years	-	-	-	-		0.00%
Successor Agency Total	**358 Days**	**3,909,521.67**	**3,767,783.59**	**3,802,421.84**	**3,820,612.68**		**4.25%**
City Assessment District Bond Funds							
First American Treasury Fund	1 Days	1,277,756.92	1,277,756.92	1,277,756.92	1,277,756.92		3.80%
Assessment District Total	**0.00 Years**	**1,277,756.92**	**1,277,756.92**	**1,277,756.92**	**1,277,756.92**		**3.80%**
Portfolio Total	**2.14**	**94,823,756.31**	**92,867,122.97**	**93,599,499.80**	**94,424,355.53**		**3.98%**
Rancho Mirage Energy Authority							
Rancho Mirage Energy Authority Lockbox	1 Day	1,097,139.87	1,097,139.87	1,097,139.87	1,097,139.87	0.00%	0.00%
Rancho Mirage Energy Authority River ICS Sweep [1]	1 Day	18,018,364.75	18,018,364.75	18,018,364.75	18,018,364.75		
Rancho Mirage Energy Authority Total	**1 Day**	**19,115,504.62**	**19,115,504.62**	**19,115,504.62**	**19,115,504.62**		**3.90%**
Grand Total	**2.58 Years**	**113,939,260.93**	**111,982,627.59**	**112,715,004.42**	**113,539,860.15**		**3.31%**

1 - RMEA River ICS Sweep annual percentage yield is 4.14%.

Market prices are derived from closing bid prices as of the last business day of the month as supplied by Interactive Data, Bloomberg Financial LP or Telerate. Where prices are not available from generally recognized sources the securities are priced using a yield-based matrix system to arrive at an estimated market value. Prices that fall between data points are interpolated.

PFMAM's market prices are derived from closing bid prices as of the last business day of the month as supplied by Interactive Data, Bloomberg Financial LP or Telerate. Where prices are not available from generally recognized sources the securities are priced using a yield-based matrix system to arrive at an estimated market value. Prices that fall between data points are interpolated.

City of Rancho Mirage
Quarterly Accounts & Ending Balances
as of September 30, 2025

Account Number	Cash Accounts	Balance	Yield
98-33-707	LAIF-City Operating	413,192.07	4.34%
65-33-014	LAIF-Successor Agency	2,264,445.63	4.34%
6083-001	CAMP	628,872.03	4.36%
1496350896	Checking Account - Bank of America	3,261,942.96	0.00%
73330100	GENERAL FUND BUILDING PUR Cash Balance	252,296.16	4.36%
	Cash Subtotal	***6,820,748.85***	***2.27%***

	Successor Agency Accounts	Balance	Yield
206520000	2013A TAX ALL. HOUSING REFUNDING BONDS	183.89	3.81%
206520001	2013A TAX ALL. HOUSING REFUNDING BONDS	762.40	3.81%
WHITEWATER			
73330104	2013 WHITEWATER RESERVE		
206541000	2013A NORTHSIDE RESERVE	152.28	3.81%
206541001	2013A NORTHSIDE RESERVE	723.00	3.81%
206541002	2013A NORTHSIDE RESERVE	41,797.77	3.81%
231643000	2016A TAX ALL. BONDS	458.95	3.79%
231643001	2016A TAX ALL. BONDS	2,235.12	3.79%
231643003	2016A TAX ALL. EXPENSE ACCOUNT	12,525.84	3.79%
256951000	2017A REDEVELOPMENT PROJECT	791.77	3.81%
256951001	2017A REDEVELOPMENT PROJECT	87.22	3.81%
744304004	TAXABLE A-T INTEREST	82.06	3.81%
744304005	TAXABLE A-T PRINCIPAL	248.12	3.81%
744305004	2003 SERIES B CAPITAL PROJ REDEVELOPMENT	27.62	3.81%
	Successor Agency Subtotal	***60,076.04***	**3.80%**

	Assessment District Accounts	Balance	Yield
94420340	(MAGNESIA FALL COVE/WHITE SUN LTD OBLIGATION IMPROVEMENT S RIES 2000A INTEREST)	2,178.52	3.81%
94420341	(MAGNESIA FALL COVE/WHITE SUN LTD OBLIGATION IMPROVEMENT SERIES 2000A PRINCIPAL	102,244.40	3.81%
94420342	(MAGNESIA FALL COVE/WHITE SUN LTD OBLIGATION IMPROVEMENT SERIES 2000A RESERVE	179,704.00	3.81%
94420344	(MAGNESIA FALL COVE/WHITE SUN LTD OBLIGATION IMPROVEMENT SERIES 2000A PREPAYMENT	0.02	3.81%
94433290	(FRANK SINATRA DRIVE EXT) REF BONDS SERIES 2002 INTEREST	61.95	3.81%
94433291	(FRANK SINATRA DRIVE EXT) REF BONDS SERIES 2002 PRINCIPAL	2,605.16	3.81%
94433292	(FRANK SINATRA DRIVE EXT) REF BONDS SERIES 2002 RESERVE	644,578.90	3.81%
216986000	CFD NO. 4B (DEL WEBB) RESERVE FUND SPECIAL TAX BONDS SERIES 2021 SPECIAL TAX FUND	163.07	3.79%
216986003	CFD NO. 4B (DEL WEBB) RESERVE FUND SPECIAL TAX BONDS SERIES 2021 RESERVE FUND	346,220.90	3.79%
	Assessment District Subtotal	***1,277,756.92***	**3.80%**

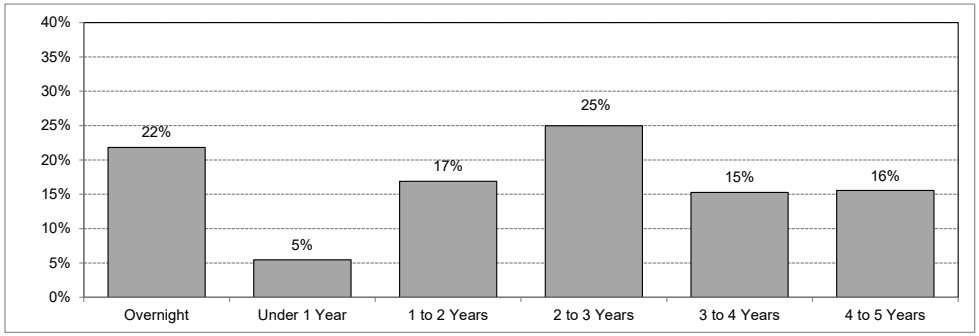
	Fixed Income & Equities	Market Value	Yield to Maturity
	U.S. Treasuries		
	Operating Portfolio	43,000,113.46	3.56%
	Successor Portfolio	1,496,091.01	4.12%
	Operating Portfolio	654,010.40	3.36%
	Operating Portfolio	19,638,416.51	4.66%
	Operating Portfolio	614,062.48	4.56%
	Operating Portfolio	1,269,935.62	5.43%
	Operating Portfolio	19,593,144.24	4.74%
	Fixed Income & Equities Subtotal	***86,265,773.72***	**4.12%**
	Portfolio Total	***94,424,355.53***	**3.98%**
6714249459	Rancho Mirage Energy Authority Lockbox	1,097,139.87	0.00%
4920690637	Rancho Mirage Energy Authority ICS Cash Sweep	18,018,364.75	4.14%
	Rancho Mirage Energy Authority Total	***19,115,504.62***	***3.90%***
	Grand Total	***113,539,860.15***	**3.31%**

City of Rancho Mirage
Quarterly Earnings and Investment Maturity Distribution
as of September 30, 2025

Earnings Summary (Accrual Basis)

PFMAM-Managed Portfolio	
Ending Amortized Value of Securities	83,963,017.82
Ending Accrued Interest	571,017.42
Plus Proceeds from Sales	8,465,781.92
Plus Proceeds of Maturities/Calls/Principal Payments	147,583.50
Plus Coupons Received	747,082.58
Less Cost of New Purchases	(5,733,273.70)
Less Beginning Amortized Value of Securities	(86,787,967.34)
Less Beginning Accrued Interest	(582,950.34)
Portfolio Subtotal	**$790,291.86**
CAMP	
CAMP Subtotal	**$70,047.05**
LAIF	
LAIF Subtotal	**$10,843.32**
Successor Agency	
Successor Agency Subtotal	**$15,923.71**
Portfolio Total	**$887,105.94**
ICS Sweep	
ICS Sweep Subtotal	**$58,742.61**
Grand Total	**$945,848.55**

City Operating Funds Investment Maturity Distribution



City of Rancho Mirage
Investment Detail
as of September 30, 2025

Issuer	S&P Rating	Coupon	Maturity	Purchased	Days to Maturity	Par Amount	Original Cost	Adjusted Cost	Market Value	Yield to Maturity
				City Operating Funds						
Cash Equivalents										
Checking Account - Bank of America	NR	0.00%	10/1/25	9/30/25	1	3,261,942.96	3,261,942.96	3,261,942.96	3,261,942.96	0.00%
First American Treasury Oblig. Fund	NR	4.36%	10/1/25	9/30/25	1	252,296.16	252,296.16	252,296.16	252,296.16	4.36%
California Asset Management Program	NR	4.36%	10/1/25	9/30/25	1	628,872.03	628,872.03	628,872.03	628,872.03	4.36%
Local Agency Investment Fund - City	NR	4.34%	10/1/25	9/30/25	1	413,192.07	413,192.07	413,192.07	413,192.07	4.34%
				Cash Equivalents Subtotal	**1**	**4,556,303.22**	**4,556,303.22**	**4,556,303.22**	**4,556,303.22**	**1.24%**
Municipal Bonds										
Wells Fargo Bank NA Corporate	AA-	4.76%	11/1/2026	8/9/2023	397	195,000.00	195,000.00	195,000.00	197,029.95	4.75%
State of Connecticut	AA-	4.51%	5/15/2028	6/22/2023	958	205,000.00	205,000.00	205,000.00	208,838.83	4.51%
Los Angeles Unif SD-B	NR	4.42%	7/1/2028	5/13/2025	1,005	205,000.00	205,000.00	205,000.00	208,193.70	4.42%
				Municipal Bonds Subtotal	**794**	**605,000.00**	**605,000.00**	**605,000.00**	**614,062.48**	**4.56%**
U.S. Treasuries										
U.S. Treasury	AA+	1.63%	2/15/2026	3/3/2021	138	325,000.00	339,815.43	326,121.39	322,219.62	0.69%
U.S. Treasury	AA+	0.75%	5/31/2026	6/4/2021	243	575,000.00	573,787.11	574,838.90	563,466.08	0.79%
U.S. Treasury	AA+	0.88%	6/30/2026	12/6/2021	273	1,700,000.00	1,676,160.16	1,696,110.12	1,663,788.30	1.19%
U.S. Treasury	AA+	0.63%	7/31/2026	1/4/2024	304	680,000.00	621,801.56	661,220.31	662,585.88	4.17%
U.S. Treasury	AA+	1.13%	10/31/2026	3/19/2025	396	450,000.00	429,328.13	436,017.56	437,712.75	4.09%
U.S. Treasury	AA+	4.38%	7/31/2026	10/10/2024	304	355,000.00	357,024.61	355,949.28	356,702.93	4.04%
U.S. Treasury	AA+	3.75%	8/31/2026	9/5/2024	335	430,000.00	429,563.28	429,795.32	430,013.33	3.80%
U.S. Treasury	AA+	2.25%	8/15/2027	1/6/2023	684	800,000.00	742,000.00	776,448.28	780,156.00	3.99%
U.S. Treasury	AA+	2.25%	11/15/2027	12/5/2024	776	675,000.00	640,168.95	649,486.28	656,226.90	4.13%
U.S. Treasury	AA+	2.75%	2/15/2028	9/3/2024	868	2,900,000.00	2,806,882.81	2,834,691.44	2,842,565.50	3.75%
U.S. Treasury	AA+	2.38%	5/15/2027	7/6/2022	592	2,000,000.00	1,951,796.88	1,983,941.35	1,959,844.00	2.91%
U.S. Treasury	AA+	1.50%	2/15/2030	4/3/2025	1,599	770,000.00	688,819.14	696,439.32	702,173.78	3.90%
U.S. Treasury	AA+	0.50%	5/31/2027	4/4/2024	608	1,175,000.00	1,038,130.86	1,102,882.32	1,115,790.58	4.50%
U.S. Treasury	AA+	0.50%	8/31/2027	8/2/2024	700	800,000.00	718,718.75	748,297.14	754,093.60	4.04%
U.S. Treasury	AA+	0.50%	8/31/2027	10/29/2024	700	1,600,000.00	1,448,125.00	1,495,621.66	1,508,187.20	4.08%
U.S. Treasury	AA+	1.13%	2/29/2028	12/5/2023	882	215,000.00	189,460.35	200,455.44	202,738.33	4.22%
U.S. Treasury	AA+	1.00%	7/31/2028	10/10/2024	1,035	185,000.00	166,312.11	170,844.62	171,999.50	3.88%
U.S. Treasury	AA+	1.25%	9/30/2028	12/5/2024	1,096	2,075,000.00	1,862,717.78	1,905,552.12	1,935,423.05	4.18%
U.S. Treasury	AA+	0.88%	9/30/2026	12/6/2021	365	1,500,000.00	1,476,621.09	1,495,162.07	1,458,550.50	1.21%
U.S. Treasury	AA+	1.25%	11/30/2026	2/17/2022	426	1,200,000.00	1,163,390.63	1,191,093.89	1,166,484.00	1.92%
U.S. Treasury	AA+	1.38%	12/31/2028	2/5/2024	1,188	75,000.00	66,249.02	69,200.22	69,829.13	4.02%
U.S. Treasury	AA+	2.88%	4/30/2029	9/25/2024	1,308	295,000.00	286,518.75	288,277.68	287,187.22	3.56%
U.S. Treasury	AA+	2.88%	4/30/2029	10/10/2024	1,308	315,000.00	301,477.15	304,176.34	306,657.54	3.91%
U.S. Treasury	AA+	2.75%	5/31/2029	7/2/2024	1,339	350,000.00	323,968.75	330,065.03	338,994.25	4.45%
U.S. Treasury	AA+	2.63%	5/31/2027	6/3/2022	608	2,000,000.00	1,972,578.13	1,990,869.40	1,966,876.00	2.92%
U.S. Treasury	AA+	2.63%	5/31/2027	11/12/2024	608	700,000.00	673,585.94	682,452.80	688,406.60	4.20%
U.S. Treasury	AA+	2.75%	7/31/2027	8/10/2022	669	1,000,000.00	990,351.56	996,450.90	984,375.00	2.96%
U.S. Treasury	AA+	3.88%	9/30/2029	6/5/2025	1,461	2,000,000.00	1,993,046.88	1,993,530.63	2,013,672.00	3.96%
U.S. Treasury	AA+	4.13%	10/31/2027	12/8/2022	761	1,500,000.00	1,522,441.41	1,509,538.85	1,515,234.00	3.79%
U.S. Treasury	AA+	3.88%	11/30/2029	2/7/2025	1,522	1,600,000.00	1,568,250.00	1,572,151.41	1,610,312.00	4.34%
U.S. Treasury	AA+	4.00%	2/29/2028	3/1/2023	882	1,125,000.00	1,116,342.77	1,120,823.10	1,134,931.50	4.17%
U.S. Treasury	AA+	3.63%	3/31/2030	5/13/2025	1,643	590,000.00	577,185.94	578,105.23	587,579.82	4.12%
U.S. Treasury	AA+	3.50%	4/30/2028	5/3/2023	943	855,000.00	850,791.79	852,826.68	852,528.20	3.61%
U.S. Treasury	AA+	3.75%	5/31/2030	7/3/2025	1,704	1,250,000.00	1,247,705.08	1,247,812.45	1,250,878.75	3.79%
U.S. Treasury	AA+	3.75%	6/30/2030	8/5/2025	1,734	1,200,000.00	1,187,390.63	1,187,756.17	1,200,516.00	3.99%
U.S. Treasury	AA+	4.38%	8/31/2028	11/5/2024	1,066	2,000,000.00	2,012,734.38	2,009,902.61	2,040,704.00	4.19%
U.S. Treasury	AA+	4.00%	1/15/2027	2/18/2025	472	205,000.00	204,023.05	204,331.83	205,768.75	4.26%
U.S. Treasury	AA+	4.00%	1/15/2027	3/4/2025	472	900,000.00	900,000.00	900,000.00	903,375.00	4.00%
U.S. Treasury	AA+	4.25%	2/28/2029	11/12/2024	1,247	440,000.00	441,529.69	441,237.05	448,370.12	4.16%
U.S. Treasury	AA+	4.50%	5/31/2029	12/12/2024	1,339	300,000.00	304,828.13	304,022.61	308,414.10	4.10%
U.S. Treasury	AA+	4.25%	6/30/2029	7/21/2025	1,369	400,000.00	405,109.38	404,873.32	407,953.20	3.90%

City of Rancho Mirage
Investment Detail
as of September 30, 2025

Issuer	S&P Rating	Coupon	Maturity	Purchased	Days to Maturity	Par Amount	Original Cost	Adjusted Cost	Market Value	Yield to Maturity
U.S. Treasury	AA+	4.13%	10/31/2029	5/22/2025	1,492	1,300,000.00	1,300,000.00	1,300,000.00	1,320,667.40	4.12%
U.S. Treasury	AA+	3.75%	5/15/2028	5/21/2025	958	350,000.00	348,167.97	348,379.74	351,121.05	3.94%
U.S. Treasury	AA+	3.88%	7/31/2030	9/4/2025	1,765	2,500,000.00	2,514,550.78	2,514,360.61	2,515,040.00	3.74%
				U.S. Treasuries Subtotal	**952**	**43,660,000.00**	**42,429,451.81**	**42,882,113.47**	**43,000,113.46**	**3.56%**
Corporate Notes										
Accenture Capital Inc.	AA-	4.05%	10/4/2029	10/4/2024	1,465	295,000.00	294,483.75	294,578.61	294,718.87	4.09%
American Express	A-	4.73%	4/25/2029	4/25/2025	1,303	365,000.00	365,000.00	365,000.00	370,752.04	4.73%
American Honda Finance Corporation	A-	4.90%	7/9/2027	7/10/2024	647	235,000.00	234,696.85	234,815.71	238,319.85	4.95%
American Honda Finance Corporation	A-	4.90%	7/9/2027	8/23/2024	647	385,000.00	390,309.15	388,346.49	390,438.90	4.38%
Analog Devices Inc	A-	4.50%	6/15/2030	6/16/2025	1,719	650,000.00	649,428.00	649,460.06	658,285.55	4.52%
Astrazeneca Finance LLC	A+	1.75%	5/28/2028	5/7/2025	971	325,000.00	301,879.50	304,741.77	307,613.15	4.26%
Astrazeneca Finance LLC	A+	4.85%	2/26/2029	2/26/2024	1,245	260,000.00	259,727.00	259,807.35	266,695.78	4.87%
BMW Corporate	A	3.63%	4/18/2029	7/10/2025	1,296	370,000.00	356,650.40	357,380.91	362,054.62	4.68%
BMW Corporate	A	5.05%	3/21/2030	3/21/2025	1,633	310,000.00	309,919.40	309,927.61	318,226.78	5.06%
Bank of America	A-	4.62%	5/9/2029	5/9/2025	1,317	640,000.00	640,000.00	640,000.00	647,928.96	4.62%
Blackrock Funding Inc	AA-	2.40%	4/30/2030	6/27/2025	1,673	475,000.00	436,012.00	437,915.25	442,177.50	4.30%
Blackrock Funding Inc	AA-	2.40%	4/30/2030	6/30/2025	1,673	250,000.00	229,440.00	230,412.97	232,725.00	4.30%
BRISTOL-MYERS SQUIBB CO	A	4.90%	2/22/2029	2/22/2024	1,241	195,000.00	194,590.50	194,711.70	200,225.61	4.95%
BRISTOL-MYERS SQUIBB CO	A	4.90%	2/22/2029	2/22/2024	1,241	215,000.00	215,518.15	215,362.03	220,761.57	4.85%
Caterpillar Inc	A	4.40%	10/15/2027	8/16/2024	745	500,000.00	501,270.00	500,838.32	505,443.50	4.32%
Chevron USA Inc.	AA-	4.48%	2/26/2028	2/26/2025	879	750,000.00	750,000.00	750,000.00	760,467.00	4.48%
Cintas Corp. No. 2	A-	4.20%	5/1/2028	5/2/2025	944	260,000.00	259,667.20	259,710.98	261,115.40	4.25%
Cisco Systems Inc	AA-	4.55%	2/24/2028	2/24/2025	877	45,000.00	44,993.70	44,994.95	45,691.92	4.56%
Cisco Systems Inc	AA-	4.55%	2/24/2028	2/24/2025	877	375,000.00	374,970.00	374,976.42	380,766.00	4.55%
Cisco Systems Inc	AA-	4.75%	2/24/2030	2/24/2025	1,608	350,000.00	349,737.50	349,766.50	359,102.80	4.77%
Citibank NA Corp	A+	4.58%	5/29/2027	5/29/2025	606	500,000.00	500,245.00	500,203.26	504,424.00	4.55%
Citibank NA Corp	A+	4.91%	5/29/2030	5/29/2025	1,702	350,000.00	350,000.00	350,000.00	359,601.20	4.91%
Comcast Corp.	A-	2.35%	1/15/2027	10/14/2022	472	200,000.00	178,762.00	193,563.40	196,011.00	5.16%
Cummins Inc	A	4.25%	5/9/2028	5/9/2025	952	45,000.00	44,968.50	44,972.44	45,337.77	4.28%
Goldman Sachs Bank	A+	5.41%	5/21/2027	5/21/2024	598	335,000.00	335,000.00	335,000.00	337,571.46	5.41%
HSBC USA Inc.	A-	4.65%	6/3/2028	6/3/2025	977	200,000.00	199,906.00	199,916.04	202,828.20	4.67%
HSBC USA Inc.	A-	4.65%	6/3/2028	6/3/2025	977	440,000.00	440,035.20	440,031.71	446,222.04	4.65%
Hershey Company	A	4.75%	2/24/2030	2/24/2025	1,608	335,000.00	334,410.40	334,474.43	343,056.75	4.79%
Home Depot Inc.	A	4.75%	6/25/2029	6/25/2024	1,364	100,000.00	99,355.00	99,504.14	102,406.40	4.90%
Home Depot Inc.	A	4.75%	6/25/2029	6/25/2024	1,364	150,000.00	149,521.50	149,632.61	153,609.60	4.82%
JP Morgan Chase	A	5.04%	1/23/2028	1/23/2024	845	480,000.00	480,000.00	480,000.00	485,444.16	5.04%
JP Morgan Chase	A	5.57%	4/22/2028	4/22/2024	935	235,000.00	235,000.00	235,000.00	240,132.64	5.57%
Johnson & Johnson	AAA	4.70%	3/1/2030	3/4/2025	1,613	675,000.00	683,700.75	682,775.08	695,181.15	4.41%
Kenvue Inc.	A	5.05%	3/22/2028	6/30/2025	904	460,000.00	470,860.60	469,876.16	469,964.06	4.12%
Eli Lilly & Co	A+	4.20%	8/14/2029	8/14/2024	1,414	95,000.00	94,791.95	94,835.55	95,672.51	4.25%
Eli Lilly & Co	A+	4.55%	2/12/2028	6/27/2025	865	295,000.00	298,610.80	298,256.42	299,397.27	4.05%
Eli Lilly & Co	A+	4.75%	2/12/2030	2/12/2025	1,596	370,000.00	369,789.10	369,813.96	379,522.69	4.76%
Lockheed Martin	A-	4.50%	2/15/2029	3/7/2024	1,234	455,000.00	449,339.80	450,995.59	461,635.72	4.78%
Mars Inc.	A	4.80%	3/1/2030	3/12/2025	1,613	180,000.00	179,805.60	179,825.06	183,379.86	4.83%
Mars Inc.	A	4.80%	3/1/2030	3/12/2025	1,613	170,000.00	170,204.00	170,183.71	173,192.09	4.77%
Mercedes-Benz Fin NA Corporate	A	4.90%	11/15/2027	11/22/2024	776	275,000.00	274,914.75	274,938.12	279,376.35	4.91%
Mercedes-Benz Fin NA Corporate	A	5.10%	11/15/2029	11/15/2024	1,507	350,000.00	349,741.00	349,782.71	360,859.80	5.12%
National Australia Bank	AA-	5.09%	6/11/2027	6/11/2024	619	650,000.00	650,910.00	650,530.53	662,570.35	5.04%
National Rural Coop Corporate	NR	4.95%	2/7/2030	2/7/2025	1,591	280,000.00	279,571.60	279,622.15	288,423.24	4.98%
National Secs Clearing	AA+	5.00%	5/30/2028	4/23/2025	973	325,000.00	330,453.50	329,704.25	333,086.00	4.31%
National Secs Clearing	AA+	4.70%	5/20/2030	5/20/2025	1,693	675,000.00	674,581.50	674,610.63	689,667.08	4.71%
National Secs Clearing	AA+	4.70%	5/20/2030	5/20/2025	1,693	260,000.00	260,470.60	260,440.17	265,649.54	4.66%
Paccar Financial Corp	A+	4.55%	3/3/2028	3/3/2025	885	635,000.00	634,612.65	634,684.62	643,824.60	4.57%
Roche Holdings Inc	AA	5.34%	11/13/2028	1/9/2024	1,140	400,000.00	413,416.00	408,876.38	415,523.60	4.56%
State Street Corp Notes	A	4.73%	2/28/2030	2/28/2025	1,612	630,000.00	630,000.00	630,000.00	643,717.62	4.73%
State Street Corp Notes	A	4.73%	2/28/2030	2/28/2025	1,612	670,000.00	670,623.10	670,556.81	684,588.58	4.71%
Target Corp	A	4.35%	6/15/2028	6/10/2025	989	110,000.00	109,998.90	109,999.17	111,093.95	4.35%

City of Rancho Mirage
Investment Detail
as of September 30, 2025

Issuer	S&P Rating	Coupon	Maturity	Purchased	Days to Maturity	Par Amount	Original Cost	Adjusted Cost	Market Value	Yield to Maturity
Toyota Motor Corp	A+	4.80%	5/15/2030	5/15/2025	1,688	310,000.00	309,646.60	309,670.96	317,487.43	4.83%
UBS AG Stamford CT	A+	4.86%	1/10/2028	1/10/2025	832	250,000.00	250,000.00	250,000.00	252,118.00	4.86%
USAA Capital	AA-	4.38%	6/1/2028	6/2/2025	975	250,000.00	249,527.50	249,577.08	252,329.00	4.44%
				Corporate Notes Subtotal	**1,212**	**19,390,000.00**	**19,311,067.00**	**19,324,600.77**	**19,638,416.51**	**4.66%**
Bank Notes										
Morgan Stanley	A+	4.95%	1/14/2028	5/3/2024	836	625,000.00	615,987.50	619,222.15	631,160.62	5.39%
Morgan Stanley	A+	5.50%	5/26/2028	5/30/2024	969	625,000.00	625,756.25	625,433.56	638,775.00	5.47%
				Bank Notes Subtotal	**1,805**	**1,250,000.00**	**1,241,743.75**	**1,244,655.71**	**1,269,935.62**	**5.43%**
Federal Agencies										
Federal Home Loan Banks	AA+	0.83%	2/10/2027	8/19/2022	498	680,000.00	609,014.80	658,453.28	654,010.40	3.36%
				Federal Agencies Subtotal	**498**	**680,000.00**	**609,014.80**	**658,453.28**	**654,010.40**	**3.36%**
ACMBS										
FNA 2018-M2	AA+	2.91%	1/1/2028	4/8/2025	823	866,844.86	842,261.69	846,264.52	847,268.91	4.07%
Federal Home Loan Mortgage Corporation	AA+	3.22%	3/1/2027	8/18/2023	517	1,000,000.00	943,281.25	976,647.79	990,034.00	4.94%
Federal Home Loan Mortgage Corporation	AA+	3.24%	4/1/2027	8/24/2023	548	900,000.00	846,703.13	877,244.94	890,461.80	5.01%
Federal Home Loan Mortgage Corporation	AA+	3.12%	6/1/2027	8/22/2023	609	795,000.00	743,449.22	771,740.65	784,614.92	4.97%
Federal Home Loan Mortgage Corporation	AA+	3.60%	1/1/2028	7/24/2024	823	850,000.00	821,279.30	830,441.92	843,884.25	4.64%
Federal Home Loan Mortgage Corporation	AA+	3.30%	11/1/2027	7/5/2024	762	450,000.00	427,552.73	435,290.29	444,277.35	4.90%
Federal Home Loan Mortgage Corporation	AA+	3.29%	11/1/2027	7/5/2024	762	900,000.00	854,156.25	869,954.74	888,267.60	4.91%
Federal Home Loan Mortgage Corporation	AA+	2.28%	7/1/2026	12/15/2023	274	461,864.62	433,719.75	453,061.86	455,913.50	4.75%
Federal Home Loan Mortgage Corporation	AA+	2.31%	10/1/2027	1/11/2024	731	551,071.99	519,815.87	533,386.91	538,703.73	3.91%
Federal Home Loan Mortgage Corporation	AA+	2.12%	3/1/2029	4/15/2025	1,248	930,000.00	859,487.11	867,107.13	877,832.58	4.20%
Federal Home Loan Mortgage Corporation	AA+	4.38%	12/1/2028	1/5/2024	1,158	607,191.87	602,495.62	604,138.00	609,224.14	4.55%
Federal Home Loan Mortgage Corporation	AA+	4.82%	6/1/2028	1/22/2024	975	575,000.00	581,064.45	578,746.02	585,808.28	4.56%
Federal Home Loan Mortgage Corporation	AA+	4.65%	8/1/2028	9/14/2023	1,036	850,000.00	837,425.95	842,239.38	863,355.20	4.99%
Federal Home Loan Mortgage Corporation	AA+	4.80%	9/1/2028	9/28/2023	1,067	840,000.00	829,959.48	833,588.96	856,675.68	5.07%
Federal Home Loan Mortgage Corporation	AA+	4.74%	8/1/2028	10/19/2023	1,036	845,000.00	826,464.08	833,330.72	861,322.87	5.25%
Federal Home Loan Mortgage Corporation	AA+	4.85%	9/1/2028	10/31/2023	1,067	635,000.00	614,754.30	621,798.42	649,582.14	5.60%
Federal Home Loan Mortgage Corporation	AA+	5.07%	10/1/2028	11/21/2023	1,097	310,000.00	309,103.79	309,415.06	318,379.30	5.14%
Federal Home Loan Mortgage Corporation	AA+	5.07%	10/1/2028	1/22/2024	1,097	405,000.00	413,922.66	410,981.18	415,947.15	4.55%
Federal Home Loan Mortgage Corporation	AA+	4.86%	10/1/2028	12/7/2023	1,097	475,000.00	473,635.33	474,103.55	485,807.68	4.93%
Federal Home Loan Mortgage Corporation	AA+	5.00%	11/1/2028	12/21/2023	1,128	430,000.00	434,015.34	432,679.93	441,047.13	4.79%
Federal Home Loan Mortgage Corporation	AA+	4.72%	12/1/2028	1/18/2024	1,158	485,000.00	489,844.67	488,299.61	494,183.48	4.50%
Federal Home Loan Mortgage Corporation	AA+	4.57%	12/1/2028	2/8/2024	1,158	500,000.00	504,999.50	503,435.87	507,321.00	4.34%
Federal Home Loan Mortgage Corporation	AA+	4.57%	12/1/2028	6/6/2024	1,158	350,000.00	344,531.25	345,985.79	355,124.70	4.95%
Federal Home Loan Mortgage Corporation	AA+	5.40%	1/1/2029	6/3/2024	1,189	840,000.00	849,154.69	846,767.67	871,306.80	5.14%
Federal Home Loan Mortgage Corporation	AA+	4.80%	5/1/2029	6/13/2024	1,309	828,201.16	828,198.68	828,201.16	847,698.67	4.80%
Federal Home Loan Mortgage Corporation	AA+	4.72%	5/1/2029	7/25/2024	1,309	695,000.00	699,267.99	698,365.32	710,224.67	4.58%
Federal Home Loan Mortgage Corporation	AA+	4.54%	7/1/2029	8/15/2024	1,370	770,000.00	777,202.58	775,698.89	783,046.11	4.33%
Federal Home Loan Mortgage Corporation	AA+	4.51%	7/1/2029	10/25/2024	1,370	850,000.00	851,261.72	851,052.20	863,112.10	4.47%
Federal Home Loan Mortgage Corporation	AA+	4.79%	9/1/2029	10/16/2024	1,432	500,000.00	509,993.50	508,226.11	512,718.50	4.34%
				ACMBS Subtotal	**1,002**	**19,495,174.50**	**19,069,001.88**	**19,248,194.59**	**19,593,144.24**	**4.74%**
				City Operating Total	**979**	**$89,636,477.72**	**$87,821,582.46**	**$88,519,321.04**	**$89,325,985.93**	**3.97%**

City of Rancho Mirage
Investment Detail
as of September 30, 2025

Issuer	S&P Rating	Coupon	Maturity	Purchased	Days to Maturity	Par Amount	Original Cost	Adjusted Cost	Market Value	Yield to Maturity
Successor Agency										
First American Treasury Oblig. Fund	AAAm	3.80%	10/1/25	9/30/25	1	60,076.04	60,076.04	60,076.04	60,076.04	3.80%
LAIF-Successor Agency	NR	4.34%	10/1/25	9/30/25	1	2,264,445.63	2,264,445.63	2,264,445.63	2,264,445.63	4.34%
				Cash Equivalents Subtotal	**1**	**2,324,521.67**	**2,324,521.67**	**2,324,521.67**	**2,324,521.67**	**4.33%**
U.S. Treasuries										
U.S. Treasury	AA+	1.25%	3/31/2028	10/24/2024	913	840,000.00	765,515.63	784,823.85	792,881.04	4.04%
U.S. Treasury	AA+	1.25%	3/31/2028	12/16/2024	913	745,000.00	677,746.29	693,076.32	703,209.97	4.22%
				U.S. Treasuries Subtotal	**913**	**1,585,000.00**	**1,443,261.92**	**1,477,900.17**	**1,496,091.01**	**4.12%**
				Successor Agency Total	**358**	**$3,909,521.67**	**$3,767,783.59**	**$3,802,421.84**	**$3,820,612.68**	**4.25%**
City Assessment District Bond Funds										
First American Treasury Oblig. Fund	AAAm	3.80%	10/1/25	9/30/25	1	1,277,756.92	1,277,756.92	1,277,756.92	1,277,756.92	3.80%
				Cash Equivalents Subtotal	**1**	**1,277,756.92**	**1,277,756.92**	**1,277,756.92**	**1,277,756.92**	**3.80%**
				City Assessment District Bond Funds Total	**1**	**$1,277,756.92**	**$1,277,756.92**	**$1,277,756.92**	**$1,277,756.92**	**3.80%**
				Portfolio Total	**941**	**$94,823,756.31**	**$92,867,122.97**	**$93,599,499.80**	**$94,424,355.53**	**3.98%**
Rancho Mirage Energy Authority										
Rancho Mirage Energy Authority Lockbox	NR	0.00%	10/1/25	9/30/25	1	1,097,139.87	1,097,139.87	1,097,139.87	1,097,139.87	0.00%
Rancho Mirage Energy Authority ICS Sweep	NR	0.00%	10/1/25	9/30/25	1	18,018,364.75	18,018,364.75	18,018,364.75	18,018,364.75	4.14%
				Rancho Mirage Energy Authority Subtotal	**1**	**19,115,504.62**	**19,115,504.62**	**19,115,504.62**	**19,115,504.62**	**3.90%**
				Grand Total	**783**	**$113,939,260.93**	**$111,982,627.59**	**$112,715,004.42**	**$113,539,860.15**	**3.31%**

Market prices are derived from closing bid prices as of the last business day of the month as supplied by Interactive Data, Bloomberg Finance LP or Telerate. Where prices are not available from generally recognized sources the securities are priced using a yield-based matrix system to arrive at an estimated market value. Prices that fall between data points are interpolated.

Library Foundation Investment Summary
As of September 30, 2025

		Balance	Investment Type
Operating Cash	$	2,362,770.66	City Pool
Endowment Cash		519,566.00	City Pool
Endowment Total		519,566.00	
Total Cash	$	2,882,336.66	

City Council Staff Report

Demands

DATE	ITEM #
November 6, 2025	CONSENT CALENDAR - 5I.
Presented To	**Presented By**
Mayor and City Council	Kofi Antobam, Director of Administrative Services

RECOMMENDED ACTION

Approve the demands as presented.

Attachments

Attachment 1 - Demands

ATTACHMENT 1

CITY OF RANCHO MIRAGE

We hereby accept as files checks issued thru October 31, 2025:

City Funds **$ 4,135,295.48**

ordered paid as stated below.

Date: November 6, 2025 _____

Mayor

DEMANDS\GEN

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
9084	10/17/2025	EFT	333	BECK OIL INC	183984	09/30/2025		10172025	1,233.87
Invoice: 183984					FUEL PE 9/30/2025				
					101.97 10132000 7623 VEHICLE FUEL				
					394.70 10133000 7623 VEHICLE FUEL				
					129.29 21800000 7623 VEHICLE FUEL				
					204.91 10132000 7623 VEHICLE FUEL				
					234.67 10141000 7623 VEHICLE FUEL				
					168.33 10123000 7623 VEHICLE FUEL				
						CHECK 9084 TOTAL:			1,233.87
9085	10/17/2025	EFT	2860	CHARTER COMMUNICATIONS HOLDINGS,	189394201100125	10/01/2025		10172025	38.24
Invoice: 189394201100125					SERVICE PE 10/31/2025 (ACCT# 189394201)				
					38.24 21500690 7826 INTERNET ACCESS & SERVICE				
				CHARTER COMMUNICATIONS HOLDINGS,	189394001100125	10/01/2025		10172025	695.90
Invoice: 189394001100125					SERVICE PE 10/31/2025 (ACCT# 189394001)				
					695.90 21500690 7826 INTERNET ACCESS & SERVICE				
				CHARTER COMMUNICATIONS HOLDINGS,	189396001100725	10/07/2025		10172025	1,027.97
Invoice: 189396001100725					SERVICE PE 11/8/2025 (ACCT #189396001)				
					1,027.97 10151000 7824 COMMUNICATION MAIN/SERV				
				CHARTER COMMUNICATIONS HOLDINGS,	189395901100725	10/07/2025		10172025	1,688.80
Invoice: 189395901100725					SERVICE PE 11/8/2025 (ACCT# 189395901)				
					1,688.80 10151000 7824 COMMUNICATION MAIN/SERV				
				CHARTER COMMUNICATIONS HOLDINGS,	189400201100725	10/07/2025		10172025	304.19
Invoice: 189400201100725					SERVICE PE 11/8/2025 (ACCT #189400201)				
					304.19 21500500 7826 INTERNET ACCESS & SERVICE				
				CHARTER COMMUNICATIONS HOLDINGS,	189395801100725	10/07/2025		10172025	1,259.76
Invoice: 189395801100725					SERVICE PE 11/8/2025 (ACCT #189395801)				
					1,259.76 10151000 7824 COMMUNICATION MAIN/SERV				
				CHARTER COMMUNICATIONS HOLDINGS,	189395601100725	10/07/2025		10172025	130.64
Invoice: 189395601100725					SERVICE PE 11/8/2025 (ACCT #189395601)				
					130.64 10151000 7824 COMMUNICATION MAIN/SERV				
				CHARTER COMMUNICATIONS HOLDINGS,	189392301100725	10/07/2025		10172025	1,027.97
Invoice: 189392301100725					SERVICE PE 11/8/2025 (ACCT #189392301)				
					1,027.97 21800000 7824 COMMUNICATION MAIN/SERV				
						CHECK 9085 TOTAL:			6,173.47
9086	10/17/2025	EFT	3024	CALIFORNIA DEPARTMENT OF HEALTH C 4		10/03/2025		10172025	57,003.98
Invoice: 4					PP-GEMT IGT TRNSFR - 4/4 CY 2025 (NPI 1457885089)				
					57,003.98 21500000 7853 GEMT QUALITY ASSURANCE FEE				

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9086	TOTAL:	57,003.98
9087	10/17/2025	EFT	2449	EIDE BAILLY LLP	EI01940432	10/06/2025	20260113	10172025	38,000.00
Invoice: EI01940432						AUDIT SERVICES FY 24/25			
					38,000.00 10155000 7432	AUDITING SERVICES			
						CHECK	9087	TOTAL:	38,000.00
9088	10/17/2025	EFT	1929	FARMER BROTHERS CO.	70672105	10/09/2025		10172025	203.32
Invoice: 70672105						COFFEE SUPPLIES			
					203.32 24281000 8000	SUPPLIES			
						CHECK	9088	TOTAL:	203.32
9089	10/17/2025	EFT	2625	HAROLD M BRUCE	7890832	10/13/2025		10172025	930.73
Invoice: 7890832						MOBILE PEDESTAL			
					930.73 10133300 8900	FURNITURE & EQUIPMENT			
						CHECK	9089	TOTAL:	930.73
9090	10/17/2025	EFT	538	ISAIAH W. HAGERMAN	80466	10/13/2025		10172025	1,370.70
Invoice: 80466						EXP REIMB - CAL CITIES ANNUAL CONFERENCE			
					1,370.70 10113000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	9090	TOTAL:	1,370.70
9091	10/17/2025	EFT	1358	HERC RENTALS INC	35953829-001	10/07/2025		10172025	2,074.40
Invoice: 35953829-001						LIGHT TOWER RENTAL 10/3/2025			
					2,074.40 21892000 8002	EQUIPMENT RENTAL			
						CHECK	9091	TOTAL:	2,074.40
9092	10/17/2025	EFT	3329	ANGELICA M ZARCO	INV-000147	10/09/2025		10172025	1,950.00
Invoice: INV-000147						TYLER EPL CONFIGURATION CONSULTANT 9/2025			
					1,950.00 10156000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	9092	TOTAL:	1,950.00
9093	10/17/2025	EFT	3035	KAILA WAYBRIGHT	80516	10/15/2025		10172025	302.72
Invoice: 80516						REIMB-SUPPLIES FOR TEEN PRGM, STEAM, FIBER ARTS			
					100.38 24281000 7914	FOUNDATION - READING CLUB			
					71.67 24281000 7910	FOUNDATION - PROGRAMS			
					64.60 10157000 7875	CULTURAL SPECIAL EVENTS			
					66.07				
					E LL_STEAM -UNDEFINED -UNDEFINED -UNDEFINED				

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
						CHECK	9093	TOTAL:	302.72
9094	10/17/2025	EFT	3009	KRAZAN & ASSOCIATES	INV K601142 - 31222	09/30/2025		10172025	14,500.00
Invoice: INV K601142 - 31222					SOIL TECH SERVICES PE 9/2025				
					14,500.00 10134000 9018 PAVEMENT REHABILITATION				
						CHECK	9094	TOTAL:	14,500.00
9095	10/17/2025	EFT	3347	LIPPERT CONSTRUCTION INC	2778	09/25/2025		10172025	5,500.00
Invoice: 2778					REPAIR PATHWAY - WASH AT FRANK SINATRA DR				
					5,500.00 10132000 7630 TRAILS & BIKE PATH MAINT				
						CHECK	9095	TOTAL:	5,500.00
9096	10/17/2025	EFT	1295	MICHAEL BAKER INTERNATIONAL INC	1253159	06/28/2025	20260073	10172025	2,466.00
Invoice: 1253159					CP 22-378 PUBLIC PARKING IMPROVEMENTS PE 5/25/2025				
					2,466.00 10131000 7400 PROFESSIONAL/TECHNICAL				
				MICHAEL BAKER INTERNATIONAL INC	1261068	09/17/2025	20260073	10172025	23,515.10
Invoice: 1261068					PROFESSIONAL SERVICES - FS TRAILS PE 8/24/2025				
					23,515.10 10131000 7400 PROFESSIONAL/TECHNICAL				
				MICHAEL BAKER INTERNATIONAL INC	1257200	08/07/2025	20260073	10172025	24,598.40
Invoice: 1257200					PROFESSIONAL SERVICES - FS TRAILS PE 7/27/2025				
					24,598.40 10131000 7400 PROFESSIONAL/TECHNICAL				
				MICHAEL BAKER INTERNATIONAL INC	1263754	10/14/2025	20260073	10172025	46,051.10
Invoice: 1263754					PROFESSIONAL SERVICES - FS TRAILS PE 9/28/2025				
					46,051.10 10131000 7400 PROFESSIONAL/TECHNICAL				
						CHECK	9096	TOTAL:	96,630.60
9097	10/17/2025	EFT	1317	MISSION LINEN SUPPLY	524757754	10/10/2025	20260009	10172025	35.00
Invoice: 524757754					BI-WEEKLY RENTAL SERVICE				
					35.00 21500690 8002 EQUIPMENT RENTAL				
				MISSION LINEN SUPPLY	524746773	10/09/2025	20260009	10172025	39.00
Invoice: 524746773					BI-WEEKLY RENTAL SERVICE				
					39.00 10133300 8002 EQUIPMENT RENTAL				
				MISSION LINEN SUPPLY	524757756	10/10/2025	20260009	10172025	41.00
Invoice: 524757756					BI-WEEKLY RENTAL SERVICE				
					41.00 21500500 8002 EQUIPMENT RENTAL				
				MISSION LINEN SUPPLY	524757761	10/10/2025	20260009	10172025	30.00
Invoice: 524757761					BI-WEEKLY RENTAL SERVICE				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				30.00 24281000 8002	EQUIPMENT RENTAL				
				MISSION LINEN SUPPLY	524757755	10/10/2025	20260009	10172025	54.00
				Invoice: 524757755		BI-WEEKLY RENTAL SERVICE			
				54.00 10133300 8002	EQUIPMENT RENTAL				
					CHECK	9097 TOTAL:			199.00
9098	10/17/2025	EFT	116	PARKHOUSE TIRE	2030253150	10/02/2025		10172025	543.31
				Invoice: 2030253150		TIRES - CERT TRAILER			
				543.31 10142000 7624	VEHICLE MAINTENANCE				
					CHECK	9098 TOTAL:			543.31
9099	10/17/2025	EFT	2165	JESSICA PULLIAM	80448	10/10/2025		10172025	506.27
				Invoice: 80448		EXP REIMB. - CAL CHOICE ENERGY CONFERENCE			
				506.27 600 7806	MEETINGS/TRAINING/TRAVEL				
					CHECK	9099 TOTAL:			506.27
9100	10/17/2025	EFT	2814	RUBY HWONG	18	10/15/2025		10172025	1,860.00
				Invoice: 18		2026 RMWF CONCIERGE SERVICES PE 3/25/2025			
				1,860.00 244 7400	PROFESSIONAL/TECHNICAL				
				RUBY HWONG	19	10/15/2025		10172025	548.00
				Invoice: 19		2026 RMWF CONCIERGE SERVICES PE 6/24/2025			
				548.00 244 7400	PROFESSIONAL/TECHNICAL				
				RUBY HWONG	20	10/15/2025		10172025	863.00
				Invoice: 20		2026 RMWF CONCIERGE SERVICES PE 9/30/2025			
				863.00 244 7400	PROFESSIONAL/TECHNICAL				
					CHECK	9100 TOTAL:			3,271.00
9101	10/17/2025	EFT	2883	SBA THE STEVEN BARCLAY AGENCY INC	2401793	10/13/2025		10172025	7,066.96
				Invoice: 2401793		2026 RMWF TRAVEL REIMBURSEMENT - E LARSON			
				7,066.96 244 7910	FOUNDATION - PROGRAMS				
					CHECK	9101 TOTAL:			7,066.96
9102	10/17/2025	EFT	2972	SCA OF CA, LLC	CA25003097	10/15/2025	20260088	10172025	8,973.90
				Invoice: CA25003097		CITYWIDE STREET SWEEPING 10/2025			
				8,973.90 248 7615	STREET SWEEPING				
					CHECK	9102 TOTAL:			8,973.90

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					INVOICE DTL DESC				
9103	10/17/2025	EFT	489	VERIZON WIRELESS	6124914032	10/01/2025		10172025	5,366.78
Invoice: 6124914032						SERVICE PE 10/1/25 (ACCT# 572244822-00001)			
				5,366.78	10151000 7824	COMMUNICATION MAIN/SERV			
						CHECK	9103 TOTAL:		5,366.78
9104	10/17/2025	EFT	2889	VINTAGE ASSOCIATES INC	238413	10/01/2025	20260007	10172025	62,700.00
Invoice: 238413						CITYWIDE LANDSCAPE MAINTENANCE 9/2025			
				549.91	10132000 7630	TRAILS & BIKE PATH MAINT			
				3,739.39	10133300 7612	MAINTENANCE			
				329.95	10133310 7612	MAINTENANCE			
				6,602.01	10133320 7612	MAINTENANCE			
				22,660.38	201 7612	MAINTENANCE			
				439.93	202 7612	MAINTENANCE			
				329.95	203 7612	MAINTENANCE			
				219.96	204 7612	MAINTENANCE			
				1,045.34	205 7612	MAINTENANCE			
				439.93	207 7612	MAINTENANCE			
				439.93	21500500 7612	MAINTENANCE			
				439.93	21500690 7612	MAINTENANCE			
				5,114.68	21891000 7612	MAINTENANCE			
				11,109.21	21892000 7612	MAINTENANCE			
				2,859.53	21893000 7612	MAINTENANCE			
				879.83	21895000 7612	MAINTENANCE			
				1,429.77	21896000 7612	MAINTENANCE			
				1,429.77	21897000 7612	MAINTENANCE			
				2,640.60	24281000 7612	MAINTENANCE			
						CHECK	9104 TOTAL:		62,700.00
9105	10/17/2025	EFT	1542	WAXIE SANITARY SUPPLY	83572238	10/14/2025		10172025	1,082.17
Invoice: 83572238						JANITORIAL SUPPLIES			
				1,082.17	24281000 8000	SUPPLIES			
						CHECK	9105 TOTAL:		1,082.17
241233	10/17/2025	PRTD	3229	ADRIAN MERRITT	RML 1025	10/09/2025		10172025	450.00
Invoice: RML 1025						HONORARIUM - HALLOWEEN SPOOKTACULAR 10/25/2025			
				450.00					
					E LB_FAMNITE-UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7914	FOUNDATION - READING CLUB			
						CHECK	241233 TOTAL:		450.00
241234	10/17/2025	PRTD	3386	ALEXANDRA GREENE	80512	10/15/2025		10172025	180.00
Invoice: 80512						EXPENSE REIMB - CLA CONFERENCE 10/23-25/2025			
				180.00	24281000 7806	MEETINGS/TRAINING/TRAVEL			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241234 TOTAL:		180.00
241235	10/17/2025	PRTD	2888	UNIVERSAL BUILDING MAINTENANCE, L	17610890	10/02/2025	20260111	10172025	12,646.23
	Invoice: 17610890					JANITORIAL SERVICES			
					4,359.03 10133300 7612	MAINTENANCE			
					931.56 10133310 7612	MAINTENANCE			
					7,355.64 24281000 7612	MAINTENANCE			
						CHECK	241235 TOTAL:		12,646.23
241236	10/17/2025	PRTD	3384	ANNA LEVIA	80515	10/15/2025		10172025	180.00
	Invoice: 80515					EXPENSE REIMB - CLA CONFERENCE 10/23-25/2025			
					180.00 24281000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	241236 TOTAL:		180.00
241237	10/17/2025	PRTD	331	CALIFORNIA BUILDING STANDARDS	80437	10/01/2025		10172025	1,097.10
	Invoice: 80437					STATE FEE QE 09/25			
					1,219.00 101 2464	CBSC FUND FEE			
					-121.90 101 4222	PROFESSIONAL SERVICE FEES			
						CHECK	241237 TOTAL:		1,097.10
241238	10/17/2025	PRTD	275	CINTAS DOCUMENT MANAGEMENT	5297335704	10/14/2025		10172025	183.92
	Invoice: 5297335704					FIRST AID SUPPLIES			
					183.92 10133310 8000	SUPPLIES			
				CINTAS DOCUMENT MANAGEMENT	5297523702	10/15/2025		10172025	132.99
	Invoice: 5297523702					FIRST AID SUPPLIES			
					132.99 21892000 8000	SUPPLIES			
				CINTAS DOCUMENT MANAGEMENT	5297523706	10/15/2025		10172025	284.33
	Invoice: 5297523706					FIRST AID SUPPLIES			
					284.33 24281000 8000	SUPPLIES			
						CHECK	241238 TOTAL:		601.24
241239	10/17/2025	PRTD	11	COACHELLA VALLEY ASSOCIATION	80434	10/01/2025		10172025	19,880.00
	Invoice: 80434					TUMF FEES 09/25			
					19,880.00 702 2460	TUMF DEPOSITS			
						CHECK	241239 TOTAL:		19,880.00

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241240	10/17/2025	PRTD	311	COACHELLA VALLEY CONSERVATION COM	80436	10/01/2025		10172025	11,919.60
	Invoice: 80436					MSHCP FEES 09/25			
					12,040.00 702 2473	MSHCP FEES			
					-120.40 101 4222	PROFESSIONAL SERVICE FEES			
						CHECK 241240 TOTAL:			11,919.60
241241	10/17/2025	PRTD	3385	COURTNEY BOTEFUHR	80513	10/15/2025		10172025	180.00
	Invoice: 80513					EXPENSE REIMB - CLA CONFERENCE 10/23-25/2025			
					180.00 24281000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK 241241 TOTAL:			180.00
241242	10/17/2025	PRTD	132	DEPARTMENT OF JUSTICE	850257	10/06/2025		10172025	96.00
	Invoice: 850257					FINGERPRINTS 9/2025			
					96.00 10141000 7400	PROFESSIONAL/TECHNICAL			
				DEPARTMENT OF JUSTICE	854532	10/07/2025		10172025	175.00
	Invoice: 854532					DUI TESTING 9/2025			
					175.00 10141000 7400	PROFESSIONAL/TECHNICAL			
						CHECK 241242 TOTAL:			271.00
241243	10/17/2025	PRTD	1491	DESERT ARC	90268	09/30/2025		10172025	735.00
	Invoice: 90268					LANDSCAPE MAINTENANCE 9/2025			
					735.00 10133320 7612	MAINTENANCE			
						CHECK 241243 TOTAL:			735.00
241244	10/17/2025	PRTD	1491	DESERT ARC	19990	10/08/2025		10172025	127.50
	Invoice: 19990					BATTERY RECYCLING 10/8/2025			
					127.50 10156000 7400	PROFESSIONAL/TECHNICAL			
						CHECK 241244 TOTAL:			127.50
241245	10/17/2025	PRTD	3205	VICTOR MANUEL MARTINEZ	00900	10/02/2025	20260114	10172025	6,400.00
	Invoice: 00900					FIRE STATION 69 REMODEL			
					6,400.00 21500690 9453	FIRE STATION #69 BUILD/IM			
				VICTOR MANUEL MARTINEZ	00915	10/06/2025	20260114	10172025	108,839.00
	Invoice: 00915					FIRE STATION 69 REMODEL			
					108,839.00 21500690 9453	FIRE STATION #69 BUILD/IM			
						CHECK 241245 TOTAL:			115,239.00

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241246	10/17/2025	PRTD	1714	DUNN EDWARDS PAINTS	2019A56007	10/08/2025		10172025	120.05
Invoice: 2019A56007						PAINT - CITY YARD			
					120.05 10133310 8004	REPAIR & MAINT SUPPLIES			
						CHECK	241246 TOTAL:		120.05
241247	10/17/2025	PRTD	322	ELEPHANT CAR WASH	80435	10/13/2025		10172025	875.24
Invoice: 80435						DAMAGES FOR DAMAGED WATER LINE			
					875.24 10151000 7405	CLAIMS/SETTLEMENTS			
						CHECK	241247 TOTAL:		875.24
241248	10/17/2025	PRTD	403	EMCOR SERVICE	910074891	10/08/2025	20260014	10172025	1,796.22
Invoice: 910074891						HVAC MAINTENANCE 10/1/25			
					1,796.22 10133300 7612	MAINTENANCE			
				EMCOR SERVICE	910075106	10/13/2025	20260014	10172025	9,253.25
Invoice: 910075106						HVAC MAINTENANCE 10/31/2025			
					2,982.25 10133300 7612	MAINTENANCE			
					1,633.95 10133310 7612	MAINTENANCE			
					438.72 21500500 7612	MAINTENANCE			
					497.33 21500690 7612	MAINTENANCE			
					329.41 21892000 7612	MAINTENANCE			
					3,371.59 24281000 7612	MAINTENANCE			
						CHECK	241248 TOTAL:		11,049.47
241249	10/17/2025	PRTD	3006	VERMILLIONS ENVIRONMENTAL PRODUCT	25-07-23	07/28/2025		10172025	5,940.00
Invoice: 25-07-23						APPLICATION OF DUST SUPPRESANT - DINAH SHORE			
					5,940.00 10132000 7612	MAINTENANCE			
						CHECK	241249 TOTAL:		5,940.00
241250	10/17/2025	PRTD	24	FEDERAL EXPRESS CORPORATION	9-024-62562	10/10/2025		10172025	9.00
Invoice: 9-024-62562						POSTAGE			
					9.00 10151000 7869	EMPLOYEE EVENTS			
						CHECK	241250 TOTAL:		9.00
241251	10/17/2025	PRTD	2304	JAMES B FORBES	FTS-2013	09/30/2025		10172025	5,162.50
Invoice: FTS-2013						ADJUST CONTROLLER TIMMIMG & TRAFFIC CONTROL			
					5,162.50 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
						CHECK	241251 TOTAL:		5,162.50

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241252	10/17/2025	PRTD	3114	GRANITE TELECOMMUNICATIONS LLC	718877507	10/01/2025		10172025	822.67
Invoice: 718877507						SERVICES PE 10/1/2025			
					195.24 28100000 7821	TELEPHONE			
					202.83 28400000 7821	TELEPHONE			
					288.00 28600000 7821	TELEPHONE			
					136.60 28300000 7821	TELEPHONE			
						CHECK	241252 TOTAL:		822.67
241253	10/17/2025	PRTD	1319	THE HDL COMPANIES	SIN054096	09/30/2025		10172025	2,069.23
Invoice: SIN054096						SERVICE FEE QE 9/2025			
					2,069.23 10155000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	241253 TOTAL:		2,069.23
241254	10/17/2025	PRTD	146	HOME DEPOT CREDIT SERVICES	1514842	08/28/2025		10172025	26.58
Invoice: 1514842						VEHICLES			
					26.58 10133000 7624	VEHICLE MAINTENANCE			
				HOME DEPOT CREDIT SERVICES	6012060	09/02/2025		10172025	275.45
Invoice: 6012060						ELECTRICAL			
					275.45 24281000 8004	REPAIR & MAINT SUPPLIES			
				HOME DEPOT CREDIT SERVICES	6613851	09/02/2025		10172025	421.67
Invoice: 6613851						RESTROOM REMODEL			
					421.67 21500690 9453	FIRE STATION #69 BUILD/IM			
				HOME DEPOT CREDIT SERVICES	5025621	09/03/2025		10172025	21.45
Invoice: 5025621						COUPLING			
					21.45 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
				HOME DEPOT CREDIT SERVICES	5430096	09/03/2025		10172025	729.44
Invoice: 5430096						RANGE-SJV #1402			
					729.44 28600000 8900	FURNITURE & EQUIPMENT			
				HOME DEPOT CREDIT SERVICES	5430097	09/03/2025		10172025	729.44
Invoice: 5430097						RANGE-SJV-#803			
					729.44 28600000 8900	FURNITURE & EQUIPMENT			
				HOME DEPOT CREDIT SERVICES	5430099	09/03/2025		10172025	736.70
Invoice: 5430099						DISHWASHER SJV #512			
					736.70 28600000 8900	FURNITURE & EQUIPMENT			
				HOME DEPOT CREDIT SERVICES	5527215	09/03/2025		10172025	78.61
Invoice: 5527215						ELECTRICAL			
					78.61 24281000 8004	REPAIR & MAINT SUPPLIES			
				HOME DEPOT CREDIT SERVICES	4903784	09/04/2025		10172025	1,472.32
Invoice: 4903784						WASHER&DRYER-PARVIEW VILLAS #60			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
									INVOICE DTL DESC
					1,472.32 28100000 8900				FURNITURE & EQUIPMENT
			HOME DEPOT CREDIT SERVICES		4903785	09/04/2025		10172025	1,472.32
Invoice: 4903785					1,472.32 28100000 8900				WASHER&DRYER-PARVIEW VILLAS #06 FURNITURE & EQUIPMENT
			HOME DEPOT CREDIT SERVICES		527807	09/08/2025		10172025	81.85
Invoice: 527807					81.85 24281000 8004				SOLDER REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		530553	09/08/2025		10172025	115.18
Invoice: 530553					115.18 24281000 8004				ELECTRICAL REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		9012618	09/09/2025		10172025	69.73
Invoice: 9012618					69.73 10133000 7624				VEHICLES VEHICLE MAINTENANCE
			HOME DEPOT CREDIT SERVICES		9012649	09/09/2025		10172025	7.84
Invoice: 9012649					7.84 24281000 8004				ELECTRICAL REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		7528134	09/11/2025		10172025	32.26
Invoice: 7528134					32.26 24281000 8004				WAX REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		7904588	09/11/2025		10172025	687.42
Invoice: 7904588					687.42 28600000 8900				SJV #803 FURNITURE & EQUIPMENT
			HOME DEPOT CREDIT SERVICES		7904589	09/11/2025		10172025	687.42
Invoice: 7904589					687.42 28600000 8900				SJV - #1402 FURNITURE & EQUIPMENT
			HOME DEPOT CREDIT SERVICES		6510658	09/12/2025		10172025	112.97
Invoice: 6510658					112.97 21891000 8004				GATES REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		3020043	09/15/2025		10172025	132.91
Invoice: 3020043					132.91 10133300 8004				FLY TRAPS REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		3020055	09/15/2025		10172025	59.24
Invoice: 3020055					59.24 21892000 8004				AMP - VENTS REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		2520219	09/16/2025		10172025	18.27
Invoice: 2520219					18.27 10133300 8004				VENT COVER REPAIR & MAINT SUPPLIES
			HOME DEPOT CREDIT SERVICES		1520346	09/17/2025		10172025	112.01
Invoice: 1520346									ELECTRICAL

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					112.01 21892000 8004 REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		13482	09/18/2025		10172025	1,673.36
			Invoice: 13482		1,673.36 21500690 9453 PLUMBING FIRE STATION #69 BUILD/IM				
			HOME DEPOT CREDIT SERVICES		531718	09/18/2025		10172025	133.97
			Invoice: 531718		133.97 21500500 8004 SUPPLIES REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		5013889	09/23/2025		10172025	311.40
			Invoice: 5013889		311.40 10133320 8004 SUMP PUMP REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		5512598	09/23/2025		10172025	10.61
			Invoice: 5512598		10.61 21500500 8004 SUPPLIES-MATT GOTTA REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		4020546	09/24/2025		10172025	174.89
			Invoice: 4020546		174.89 10133310 8004 PAINT REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		3014176	09/25/2025		10172025	74.00
			Invoice: 3014176		74.00 10133310 8004 GYM REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		3411157	09/25/2025		10172025	11.23
			Invoice: 3411157		11.23 21500500 8004 SUPPLIES-MATT GOTTA REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		3512883	09/25/2025		10172025	537.88
			Invoice: 3512883		537.88 10133310 8004 GYM REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		2020653	09/26/2025		10172025	38.39
			Invoice: 2020653		38.39 10133310 8004 PAINT REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		1974703	09/17/2025		10172025	-42.02
			Invoice: 1974703		-42.02 28600000 8900 REFUND - DELIVERY FEE FURNITURE & EQUIPMENT				
			HOME DEPOT CREDIT SERVICES		1905233	09/17/2025		10172025	-687.42
			Invoice: 1905233		-687.42 28600000 8900 REFUND - STOVE FURNITURE & EQUIPMENT				
			HOME DEPOT CREDIT SERVICES		2410827	09/16/2025		10172025	-23.66
			Invoice: 2410827		-23.66 21892000 8004 REFUND - LED LIGHTS FOR AMPHITHEATER REPAIR & MAINT SUPPLIES				
			HOME DEPOT CREDIT SERVICES		3294569	09/15/2025		10172025	-16.09
			Invoice: 3294569		REFUND - GATE SPRING				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					-16.09 21891000 8004 REPAIR & MAINT SUPPLIES				
							CHECK	241254 TOTAL:	10,277.62
241255	10/17/2025	PRTD	30	IMPERIAL IRRIGATION DISTRICT	5005354210012025	10/03/2025		10172025	32.55
	Invoice: 5005354210012025				SERVICE PE 10/01/2025 (ACCT# 50053542)				
					32.55 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC				
				IMPERIAL IRRIGATION DISTRICT	5033781710012025	10/03/2025		10172025	2,423.69
	Invoice: 5033781710012025				SERVICE PE 10/01/2025 (ACCT# 50337817)				
					2,423.69 10133310 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5033942210012025	10/03/2025		10172025	27.15
	Invoice: 5033942210012025				SERVICE PE 10/01/2025 (ACCT# 50339422)				
					27.15 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC				
				IMPERIAL IRRIGATION DISTRICT	5005356510012025	10/03/2025		10172025	73.85
	Invoice: 5005356510012025				SERVICE PE 10/01/2025 (ACCT #50053565)				
					73.85 10133310 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5005357410012025	10/03/2025		10172025	33.93
	Invoice: 5005357410012025				SERVICE PE 10/01/2025 (ACCT #50053574)				
					33.93 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC				
				IMPERIAL IRRIGATION DISTRICT	5017900910012025	10/03/2025		10172025	28.52
	Invoice: 5017900910012025				SERVICE PE 10/01/2025 (ACCT #50179009)				
					28.52 201 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5021443110012025	10/03/2025		10172025	32.90
	Invoice: 5021443110012025				SERVICE PE 10/01/2025 (ACCT# 50214431)				
					32.90 201 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5032131610012025	10/03/2025		10172025	74.82
	Invoice: 5032131610012025				SERVICE PE 10/01/2025 (ACCT# 50321316)				
					74.82 201 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5005355210012025	10/03/2025		10172025	67.30
	Invoice: 5005355210012025				SERVICE PE 10/01/2025 (ACCT# 50053552)				
					67.30 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC				
				IMPERIAL IRRIGATION DISTRICT	5070533010012025	10/03/2025		10172025	60.86
	Invoice: 5070533010012025				SERVICE PE 10/01/2025 (ACCT# 50705330)				
					60.86 21891000 7603 ELECTRICITY				
				IMPERIAL IRRIGATION DISTRICT	5042311210012025	10/03/2025		10172025	35.86
	Invoice: 5042311210012025				SERVICE PE 10/01/2025 (ACCT #50423112)				
					35.86 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC				
				IMPERIAL IRRIGATION DISTRICT	5076512510012025	10/08/2025		10172025	42.16
	Invoice: 5076512510012025				SERVICE PE 10/1/2025 (ACCT# 50765125)				
					42.16 201 7603 ELECTRICITY				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241255 TOTAL:		2,933.59
241256	10/17/2025	PRTD	3048	JEFFERY DURHAM	80507	10/15/2025		10172025	180.00
	Invoice: 80507					EXPENSE REIMB - CLA CONFERENCE 10/23-25/2025			
					180.00 24281000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	241256 TOTAL:		180.00
241257	10/17/2025	PRTD	3319	JESSICA HIGGINS	80449	10/13/2025		10172025	180.00
	Invoice: 80449					MEAL REIMB. - CAL CHOICE ENERGY CONFERENCE			
					180.00 600 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	241257 TOTAL:		180.00
241258	10/17/2025	PRTD	1857	JTB SUPPLY COMPANY	115706	10/02/2025	20260107	10172025	24,813.13
	Invoice: 115706					NO TRAFFIC VEHICLE DETECTION SYSTEM			
					24,813.13 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
						CHECK	241258 TOTAL:		24,813.13
241259	10/17/2025	PRTD	2852	ODP BUSINESS SOLUTIONS, LLC	439662893001	10/09/2025		10172025	328.71
	Invoice: 439662893001					CUPS, PAPER, ENVELOPES			
					328.71 24281000 8000	SUPPLIES			
				ODP BUSINESS SOLUTIONS, LLC	442715861001	10/03/2025		10172025	21.75
	Invoice: 442715861001					POWER STRIP			
					21.75 10151000 8000	SUPPLIES			
						CHECK	241259 TOTAL:		350.46
241260	10/17/2025	PRTD	99999	ABRAHAM LOEBENSTEIN	NEM20260628	10/08/2025		10172025	108.11
	Invoice: NEM20260628					NEM ESCROW PAY OUT 2024-25			
					108.11 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241260 TOTAL:		108.11
241261	10/17/2025	PRTD	99999	ALAINE HAUBERT	NEM20260629	10/08/2025		10172025	423.05
	Invoice: NEM20260629					NEM ESCROW PAY OUT 2024-25			
					423.05 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241261 TOTAL:		423.05

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241262	10/17/2025	PRTD	99999	ALAN LAWRENCE	NEM20260630	10/08/2025		10172025	114.62
Invoice: NEM20260630						NEM ESCROW PAY OUT 2024-25			
				114.62 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241262 TOTAL:		114.62
241263	10/17/2025	PRTD	99999	ALAN CHARLES BESANTY	NEM20260631	10/08/2025		10172025	241.09
Invoice: NEM20260631						NEM ESCROW PAY OUT 2024-25			
				241.09 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241263 TOTAL:		241.09
241264	10/17/2025	PRTD	99999	ALAN S GOLDMAN	NEM20260632	10/08/2025		10172025	229.77
Invoice: NEM20260632						NEM ESCROW PAY OUT 2024-25			
				229.77 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241264 TOTAL:		229.77
241265	10/17/2025	PRTD	99999	ALBERT C. MOUR	NEM20260633	10/08/2025		10172025	354.47
Invoice: NEM20260633						NEM ESCROW PAY OUT 2024-25			
				354.47 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241265 TOTAL:		354.47
241266	10/17/2025	PRTD	99999	ALBERTA ZUANICH	NEM20260634	10/08/2025		10172025	127.13
Invoice: NEM20260634						NEM ESCROW PAY OUT 2024-25			
				127.13 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241266 TOTAL:		127.13
241267	10/17/2025	PRTD	99999	ALBERTO B MENDOZA	NEM20260635	10/08/2025		10172025	192.09
Invoice: NEM20260635						NEM ESCROW PAY OUT 2024-25			
				192.09 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241267 TOTAL:		192.09
241268	10/17/2025	PRTD	99999	ALEX DENES	NEM20260636	10/08/2025		10172025	255.18
Invoice: NEM20260636						NEM ESCROW PAY OUT 2024-25			
				255.18 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241268 TOTAL:		255.18

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241269	10/17/2025	PRTD	99999	ALEX MONTEIRO	NEM20260637	10/08/2025		10172025	265.13
Invoice: NEM20260637						NEM ESCROW PAY OUT 2024-25			
				265.13 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241269 TOTAL:		265.13
241270	10/17/2025	PRTD	99999	ALEX M FUENTES	NEM20260638	10/08/2025		10172025	132.24
Invoice: NEM20260638						NEM ESCROW PAY OUT 2024-25			
				132.24 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241270 TOTAL:		132.24
241271	10/17/2025	PRTD	99999	ALFRED SHEN	NEM20260639	10/08/2025		10172025	125.50
Invoice: NEM20260639						NEM ESCROW PAY OUT 2024-25			
				125.50 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241271 TOTAL:		125.50
241272	10/17/2025	PRTD	99999	ALLEN RENIUS	NEM20260640	10/08/2025		10172025	129.14
Invoice: NEM20260640						NEM ESCROW PAY OUT 2024-25			
				129.14 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241272 TOTAL:		129.14
241273	10/17/2025	PRTD	99999	ALLEN SCHOR	NEM20260641	10/08/2025		10172025	291.43
Invoice: NEM20260641						NEM ESCROW PAY OUT 2024-25			
				291.43 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241273 TOTAL:		291.43
241274	10/17/2025	PRTD	99999	ALOKA CHANDRASHEKAR	NEM20260642	10/08/2025		10172025	749.60
Invoice: NEM20260642						NEM ESCROW PAY OUT 2024-25			
				749.60 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241274 TOTAL:		749.60
241275	10/17/2025	PRTD	99999	ANDREA M MARNELL	NEM20260643	10/08/2025		10172025	484.21
Invoice: NEM20260643						NEM ESCROW PAY OUT 2024-25			
				484.21 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241275 TOTAL:		484.21

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241276	10/17/2025	PRTD	99999	ANGINEH PETROSIAN	NEM20260644	10/08/2025		10172025	270.19
Invoice: NEM20260644					NEM ESCROW PAY OUT 2024-25				
				270.19 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241276 TOTAL:		270.19
241277	10/17/2025	PRTD	99999	ANGUS E REID	NEM20260645	10/08/2025		10172025	124.97
Invoice: NEM20260645					NEM ESCROW PAY OUT 2024-25				
				124.97 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241277 TOTAL:		124.97
241278	10/17/2025	PRTD	99999	ANN VAN BALEN	NEM20260646	10/08/2025		10172025	459.36
Invoice: NEM20260646					NEM ESCROW PAY OUT 2024-25				
				459.36 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241278 TOTAL:		459.36
241279	10/17/2025	PRTD	99999	ANN WHITE	NEM20260647	10/08/2025		10172025	111.82
Invoice: NEM20260647					NEM ESCROW PAY OUT 2024-25				
				111.82 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241279 TOTAL:		111.82
241280	10/17/2025	PRTD	99999	ANN M LONG	NEM20260648	10/08/2025		10172025	127.30
Invoice: NEM20260648					NEM ESCROW PAY OUT 2024-25				
				127.30 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241280 TOTAL:		127.30
241281	10/17/2025	PRTD	99999	ANN M SCHWARZ	NEM20260649	10/08/2025		10172025	124.20
Invoice: NEM20260649					NEM ESCROW PAY OUT 2024-25				
				124.20 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241281 TOTAL:		124.20
241282	10/17/2025	PRTD	99999	ANN R MC GOWAN	NEM20260650	10/08/2025		10172025	205.74
Invoice: NEM20260650					NEM ESCROW PAY OUT 2024-25				
				205.74 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241282 TOTAL:		205.74

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241283	10/17/2025	PRTD	99999	ANNETTE SELLON	NEM20260651	10/08/2025		10172025	333.80
Invoice: NEM20260651						NEM ESCROW PAY OUT 2024-25			
				333.80 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241283 TOTAL:			333.80
241284	10/17/2025	PRTD	99999	ANNIE LANGMAN	NEM20260652	10/08/2025		10172025	410.27
Invoice: NEM20260652						NEM ESCROW PAY OUT 2024-25			
				410.27 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241284 TOTAL:			410.27
241285	10/17/2025	PRTD	99999	ANTHONY HAMILTON	NEM20260653	10/08/2025		10172025	196.72
Invoice: NEM20260653						NEM ESCROW PAY OUT 2024-25			
				196.72 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241285 TOTAL:			196.72
241286	10/17/2025	PRTD	99999	ASH HODGES	NEM20260654	10/08/2025		10172025	226.89
Invoice: NEM20260654						NEM ESCROW PAY OUT 2024-25			
				226.89 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241286 TOTAL:			226.89
241287	10/17/2025	PRTD	99999	AUDREY ABOULAFIA	NEM20260655	10/08/2025		10172025	302.78
Invoice: NEM20260655						NEM ESCROW PAY OUT 2024-25			
				302.78 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241287 TOTAL:			302.78
241288	10/17/2025	PRTD	99999	AZAR HANI	NEM20260656	10/08/2025		10172025	305.05
Invoice: NEM20260656						NEM ESCROW PAY OUT 2024-25			
				305.05 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241288 TOTAL:			305.05
241289	10/17/2025	PRTD	99999	BARBARA BELL	NEM20260657	10/08/2025		10172025	435.02
Invoice: NEM20260657						NEM ESCROW PAY OUT 2024-25			
				435.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241289 TOTAL:			435.02

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241290	10/17/2025	PRTD	99999	BARBARA HOLT	NEM20260658	10/08/2025		10172025	236.02
Invoice: NEM20260658						NEM ESCROW PAY OUT 2024-25			
				236.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241290 TOTAL:			236.02
241291	10/17/2025	PRTD	99999	BARBARA SHORE	NEM20260659	10/08/2025		10172025	159.49
Invoice: NEM20260659						NEM ESCROW PAY OUT 2024-25			
				159.49 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241291 TOTAL:			159.49
241292	10/17/2025	PRTD	99999	BARBARA J. EBERTS	NEM20260660	10/08/2025		10172025	255.88
Invoice: NEM20260660						NEM ESCROW PAY OUT 2024-25			
				255.88 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241292 TOTAL:			255.88
241293	10/17/2025	PRTD	99999	BARBARA L ERDAHL	NEM20260661	10/08/2025		10172025	340.02
Invoice: NEM20260661						NEM ESCROW PAY OUT 2024-25			
				340.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241293 TOTAL:			340.02
241294	10/17/2025	PRTD	99999	BARRY E RALPH	NEM20260662	10/08/2025		10172025	360.22
Invoice: NEM20260662						NEM ESCROW PAY OUT 2024-25			
				360.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241294 TOTAL:			360.22
241295	10/17/2025	PRTD	99999	BEN KANTER	NEM20260663	10/08/2025		10172025	191.15
Invoice: NEM20260663						NEM ESCROW PAY OUT 2024-25			
				191.15 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241295 TOTAL:			191.15
241296	10/17/2025	PRTD	99999	BENJAMIN BASHEIN	NEM20260664	10/08/2025		10172025	105.63
Invoice: NEM20260664						NEM ESCROW PAY OUT 2024-25			
				105.63 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241296 TOTAL:			105.63

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241297	10/17/2025	PRTD	99999	BERNARD REITER	NEM20260665	10/08/2025		10172025	138.97
Invoice: NEM20260665						NEM ESCROW PAY OUT 2024-25			
				138.97 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241297 TOTAL:		138.97
241298	10/17/2025	PRTD	99999	BETTY AVAKIAN	NEM20260666	10/08/2025		10172025	143.97
Invoice: NEM20260666						NEM ESCROW PAY OUT 2024-25			
				143.97 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241298 TOTAL:		143.97
241299	10/17/2025	PRTD	99999	BETTY JUDAKEN	NEM20260667	10/08/2025		10172025	104.11
Invoice: NEM20260667						NEM ESCROW PAY OUT 2024-25			
				104.11 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241299 TOTAL:		104.11
241300	10/17/2025	PRTD	99999	BLANCA LIMON	NEM20260668	10/08/2025		10172025	108.11
Invoice: NEM20260668						NEM ESCROW PAY OUT 2024-25			
				108.11 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241300 TOTAL:		108.11
241301	10/17/2025	PRTD	99999	BOBBI KAELIN	NEM20260669	10/08/2025		10172025	189.52
Invoice: NEM20260669						NEM ESCROW PAY OUT 2024-25			
				189.52 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241301 TOTAL:		189.52
241302	10/17/2025	PRTD	99999	BONNIE J SCHROTH	NEM20260670	10/08/2025		10172025	109.48
Invoice: NEM20260670						NEM ESCROW PAY OUT 2024-25			
				109.48 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241302 TOTAL:		109.48
241303	10/17/2025	PRTD	99999	BONNIE L DISNEY MIKE GALLAGHER	NEM20260671	10/08/2025		10172025	173.16
Invoice: NEM20260671						NEM ESCROW PAY OUT 2024-25			
				173.16 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241303 TOTAL:		173.16

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241304	10/17/2025	PRTD	99999	BORIS LOOBKOFF	NEM20260672	10/08/2025		10172025	173.18
Invoice: NEM20260672				NEM ESCROW PAY OUT 2024-25					
				173.18 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241304 TOTAL:		173.18
241305	10/17/2025	PRTD	99999	BRAD M MCMURCHIE	NEM20260673	10/08/2025		10172025	320.13
Invoice: NEM20260673				NEM ESCROW PAY OUT 2024-25					
				320.13 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241305 TOTAL:		320.13
241306	10/17/2025	PRTD	99999	BRADLEY EVELAND	NEM20260674	10/08/2025		10172025	201.61
Invoice: NEM20260674				NEM ESCROW PAY OUT 2024-25					
				201.61 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241306 TOTAL:		201.61
241307	10/17/2025	PRTD	99999	BRUCE CHISHOLM	NEM20260675	10/08/2025		10172025	372.44
Invoice: NEM20260675				NEM ESCROW PAY OUT 2024-25					
				372.44 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241307 TOTAL:		372.44
241308	10/17/2025	PRTD	99999	BRUCE STEEL	NEM20260676	10/08/2025		10172025	134.71
Invoice: NEM20260676				NEM ESCROW PAY OUT 2024-25					
				134.71 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241308 TOTAL:		134.71
241309	10/17/2025	PRTD	99999	BRYAN BEVIN	NEM20260677	10/08/2025		10172025	139.10
Invoice: NEM20260677				NEM ESCROW PAY OUT 2024-25					
				139.10 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241309 TOTAL:		139.10
241310	10/17/2025	PRTD	99999	BRYAN LYNG	NEM20260678	10/08/2025		10172025	203.35
Invoice: NEM20260678				NEM ESCROW PAY OUT 2024-25					
				203.35 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241310 TOTAL:		203.35

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241311	10/17/2025	PRTD	99999	BRYANT KREADEN	NEM20260679	10/08/2025		10172025	166.56
Invoice: NEM20260679						NEM ESCROW PAY OUT 2024-25			
				166.56 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241311 TOTAL:			166.56
241312	10/17/2025	PRTD	99999	CANDICE JOHNSTON	NEM20260680	10/08/2025		10172025	104.59
Invoice: NEM20260680						NEM ESCROW PAY OUT 2024-25			
				104.59 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241312 TOTAL:			104.59
241313	10/17/2025	PRTD	99999	CARL BERGHOUDIAN	NEM20260681	10/08/2025		10172025	170.22
Invoice: NEM20260681						NEM ESCROW PAY OUT 2024-25			
				170.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241313 TOTAL:			170.22
241314	10/17/2025	PRTD	99999	CARL L MARSHALL	NEM20260682	10/08/2025		10172025	234.03
Invoice: NEM20260682						NEM ESCROW PAY OUT 2024-25			
				234.03 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241314 TOTAL:			234.03
241315	10/17/2025	PRTD	99999	CARLOS MOYA LOPEZ	NEM20260683	10/08/2025		10172025	128.37
Invoice: NEM20260683						NEM ESCROW PAY OUT 2024-25			
				128.37 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241315 TOTAL:			128.37
241316	10/17/2025	PRTD	99999	CAROL BLOCH	NEM20260684	10/08/2025		10172025	149.61
Invoice: NEM20260684						NEM ESCROW PAY OUT 2024-25			
				149.61 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241316 TOTAL:			149.61
241317	10/17/2025	PRTD	99999	CAROL KLEIMER	NEM20260685	10/08/2025		10172025	188.30
Invoice: NEM20260685						NEM ESCROW PAY OUT 2024-25			
				188.30 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241317 TOTAL:			188.30

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241318	10/17/2025	PRTD	99999	CAROL ROCHFORD	NEM20260686	10/08/2025		10172025	382.83
Invoice: NEM20260686				NEM ESCROW PAY OUT 2024-25					
				382.83 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241318 TOTAL:					382.83
241319	10/17/2025	PRTD	99999	CAROL A. CORCORAN	NEM20260687	10/08/2025		10172025	286.62
Invoice: NEM20260687				NEM ESCROW PAY OUT 2024-25					
				286.62 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241319 TOTAL:					286.62
241320	10/17/2025	PRTD	99999	CAROLE A TAUBER	NEM20260688	10/08/2025		10172025	113.20
Invoice: NEM20260688				NEM ESCROW PAY OUT 2024-25					
				113.20 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241320 TOTAL:					113.20
241321	10/17/2025	PRTD	99999	CAROLYN BUSSARD-LAMB	NEM20260689	10/08/2025		10172025	128.16
Invoice: NEM20260689				NEM ESCROW PAY OUT 2024-25					
				128.16 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241321 TOTAL:					128.16
241322	10/17/2025	PRTD	99999	CAROLYN TOSHACH	NEM20260690	10/08/2025		10172025	317.32
Invoice: NEM20260690				NEM ESCROW PAY OUT 2024-25					
				317.32 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241322 TOTAL:					317.32
241323	10/17/2025	PRTD	99999	CASSANDRA B PLATE	NEM20260691	10/08/2025		10172025	177.96
Invoice: NEM20260691				NEM ESCROW PAY OUT 2024-25					
				177.96 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241323 TOTAL:					177.96
241324	10/17/2025	PRTD	99999	CATHERINE RITENOUR	NEM20260692	10/08/2025		10172025	145.98
Invoice: NEM20260692				NEM ESCROW PAY OUT 2024-25					
				145.98 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241324 TOTAL:					145.98

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241325	10/17/2025	PRTD	99999	CATHI BOND	NEM20260693	10/08/2025		10172025	426.56
Invoice: NEM20260693						NEM ESCROW PAY OUT 2024-25			
				426.56 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241325 TOTAL:		426.56
241326	10/17/2025	PRTD	99999	CATHY DAICHENDT	NEM20260694	10/08/2025		10172025	186.27
Invoice: NEM20260694						NEM ESCROW PAY OUT 2024-25			
				186.27 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241326 TOTAL:		186.27
241327	10/17/2025	PRTD	99999	CERTIFIED MAINTANCE	NEM20260695	10/08/2025		10172025	318.15
Invoice: NEM20260695						NEM ESCROW PAY OUT 2024-25			
				318.15 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241327 TOTAL:		318.15
241328	10/17/2025	PRTD	99999	CHARLES NEVIL	NEM20260696	10/08/2025		10172025	428.17
Invoice: NEM20260696						NEM ESCROW PAY OUT 2024-25			
				428.17 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241328 TOTAL:		428.17
241329	10/17/2025	PRTD	99999	CHARLES THOMAS	NEM20260697	10/08/2025		10172025	132.39
Invoice: NEM20260697						NEM ESCROW PAY OUT 2024-25			
				132.39 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241329 TOTAL:		132.39
241330	10/17/2025	PRTD	99999	CHARLES VIAU	NEM20260698	10/08/2025		10172025	423.55
Invoice: NEM20260698						NEM ESCROW PAY OUT 2024-25			
				423.55 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241330 TOTAL:		423.55
241331	10/17/2025	PRTD	99999	CHARLES VINCI	NEM20260699	10/08/2025		10172025	202.60
Invoice: NEM20260699						NEM ESCROW PAY OUT 2024-25			
				202.60 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241331 TOTAL:		202.60

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241332	10/17/2025	PRTD	99999	CHARLES D HOLLAND	NEM20260700	10/08/2025		10172025	152.93
Invoice: NEM20260700						NEM ESCROW PAY OUT 2024-25			
				152.93 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241332 TOTAL:			152.93
241333	10/17/2025	PRTD	99999	CHERYL GEORGE	NEM20260701	10/08/2025		10172025	162.58
Invoice: NEM20260701						NEM ESCROW PAY OUT 2024-25			
				162.58 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241333 TOTAL:			162.58
241334	10/17/2025	PRTD	99999	CHRIS POMROY	NEM20260702	10/08/2025		10172025	202.74
Invoice: NEM20260702						NEM ESCROW PAY OUT 2024-25			
				202.74 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241334 TOTAL:			202.74
241335	10/17/2025	PRTD	99999	CHRIS SURNOVSZKY	NEM20260703	10/08/2025		10172025	198.37
Invoice: NEM20260703						NEM ESCROW PAY OUT 2024-25			
				198.37 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241335 TOTAL:			198.37
241336	10/17/2025	PRTD	99999	CHRIS A GAUTREAU	NEM20260704	10/08/2025		10172025	604.07
Invoice: NEM20260704						NEM ESCROW PAY OUT 2024-25			
				604.07 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241336 TOTAL:			604.07
241337	10/17/2025	PRTD	99999	CHRISTIAN DONOVAN	NEM20260705	10/08/2025		10172025	106.96
Invoice: NEM20260705						NEM ESCROW PAY OUT 2024-25			
				106.96 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241337 TOTAL:			106.96
241338	10/17/2025	PRTD	99999	CHRISTOPHER PINO	NEM20260706	10/08/2025		10172025	110.80
Invoice: NEM20260706						NEM ESCROW PAY OUT 2024-25			
				110.80 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241338 TOTAL:			110.80

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241339	10/17/2025	PRTD	99999	CHUCK ALLEN	NEM20260707	10/08/2025		10172025	157.57
Invoice: NEM20260707				NEM ESCROW PAY OUT 2024-25					
				157.57 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241339 TOTAL:					157.57
241340	10/17/2025	PRTD	99999	CINDY L WARNER	NEM20260708	10/08/2025		10172025	160.28
Invoice: NEM20260708				NEM ESCROW PAY OUT 2024-25					
				160.28 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241340 TOTAL:					160.28
241341	10/17/2025	PRTD	99999	CLIFFORD LAURENO	NEM20260709	10/08/2025		10172025	117.08
Invoice: NEM20260709				NEM ESCROW PAY OUT 2024-25					
				117.08 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241341 TOTAL:					117.08
241342	10/17/2025	PRTD	99999	CORINNE A DODGE	NEM20260710	10/08/2025		10172025	134.03
Invoice: NEM20260710				NEM ESCROW PAY OUT 2024-25					
				134.03 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241342 TOTAL:					134.03
241343	10/17/2025	PRTD	99999	CRAIG EVANS	NEM20260711	10/08/2025		10172025	147.01
Invoice: NEM20260711				NEM ESCROW PAY OUT 2024-25					
				147.01 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241343 TOTAL:					147.01
241344	10/17/2025	PRTD	99999	CRAIG HARRIS	NEM20260712	10/08/2025		10172025	145.57
Invoice: NEM20260712				NEM ESCROW PAY OUT 2024-25					
				145.57 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241344 TOTAL:					145.57
241345	10/17/2025	PRTD	99999	CRAIG SMEDMAN	NEM20260713	10/08/2025		10172025	155.73
Invoice: NEM20260713				NEM ESCROW PAY OUT 2024-25					
				155.73 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241345 TOTAL:					155.73

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241346	10/17/2025	PRTD	99999	CRAIG-MILLER ROSENBLUM	NEM20260714	10/08/2025		10172025	263.32
Invoice: NEM20260714						NEM ESCROW PAY OUT 2024-25			
				263.32 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241346 TOTAL:			263.32
241347	10/17/2025	PRTD	99999	CURTIS CRESSMAN	NEM20260715	10/08/2025		10172025	146.07
Invoice: NEM20260715						NEM ESCROW PAY OUT 2024-25			
				146.07 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241347 TOTAL:			146.07
241348	10/17/2025	PRTD	99999	CURTIS H ROBINSON	NEM20260716	10/08/2025		10172025	240.20
Invoice: NEM20260716						NEM ESCROW PAY OUT 2024-25			
				240.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241348 TOTAL:			240.20
241349	10/17/2025	PRTD	99999	DALE THAW	NEM20260717	10/08/2025		10172025	199.50
Invoice: NEM20260717						NEM ESCROW PAY OUT 2024-25			
				199.50 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241349 TOTAL:			199.50
241350	10/17/2025	PRTD	99999	DAMIR KOVACIC	NEM20260718	10/08/2025		10172025	100.72
Invoice: NEM20260718						NEM ESCROW PAY OUT 2024-25			
				100.72 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241350 TOTAL:			100.72
241351	10/17/2025	PRTD	99999	DANIEL R RAMIREZ	NEM20260719	10/08/2025		10172025	145.12
Invoice: NEM20260719						NEM ESCROW PAY OUT 2024-25			
				145.12 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241351 TOTAL:			145.12
241352	10/17/2025	PRTD	99999	DARIN MARTINI	NEM20260720	10/08/2025		10172025	156.51
Invoice: NEM20260720						NEM ESCROW PAY OUT 2024-25			
				156.51 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241352 TOTAL:			156.51

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241353	10/17/2025	PRTD	99999	DARREN R GRIMSTEAD	NEM20260721	10/08/2025		10172025	279.04
	Invoice: NEM20260721			NEM ESCROW PAY OUT 2024-25					
				279.04 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241353 TOTAL:		279.04
241354	10/17/2025	PRTD	99999	DARWIN REMBOLDT	NEM20260722	10/08/2025		10172025	414.21
	Invoice: NEM20260722			NEM ESCROW PAY OUT 2024-25					
				414.21 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241354 TOTAL:		414.21
241355	10/17/2025	PRTD	99999	DAVID BEAL	NEM20260723	10/08/2025		10172025	164.67
	Invoice: NEM20260723			NEM ESCROW PAY OUT 2024-25					
				164.67 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241355 TOTAL:		164.67
241356	10/17/2025	PRTD	99999	DAVID DISNEY	NEM20260724	10/08/2025		10172025	249.83
	Invoice: NEM20260724			NEM ESCROW PAY OUT 2024-25					
				249.83 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241356 TOTAL:		249.83
241357	10/17/2025	PRTD	99999	DAVID SCHROEDER	NEM20260725	10/08/2025		10172025	190.11
	Invoice: NEM20260725			NEM ESCROW PAY OUT 2024-25					
				190.11 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241357 TOTAL:		190.11
241358	10/17/2025	PRTD	99999	DAVID VEGA	NEM20260726	10/08/2025		10172025	291.03
	Invoice: NEM20260726			NEM ESCROW PAY OUT 2024-25					
				291.03 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241358 TOTAL:		291.03
241359	10/17/2025	PRTD	99999	DAVID A FRISCIA	NEM20260727	10/08/2025		10172025	119.23
	Invoice: NEM20260727			NEM ESCROW PAY OUT 2024-25					
				119.23 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241359 TOTAL:		119.23

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241360	10/17/2025	PRTD	99999	DAVID F. CAPRA	NEM20260728	10/08/2025		10172025	232.42
	Invoice: NEM20260728					NEM ESCROW PAY OUT 2024-25			
				232.42 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241360 TOTAL:			232.42
241361	10/17/2025	PRTD	99999	DAVID J BRAVERMAN	NEM20260729	10/08/2025		10172025	279.50
	Invoice: NEM20260729					NEM ESCROW PAY OUT 2024-25			
				279.50 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241361 TOTAL:			279.50
241362	10/17/2025	PRTD	99999	DAVID M TALLMAN	NEM20260730	10/08/2025		10172025	132.31
	Invoice: NEM20260730					NEM ESCROW PAY OUT 2024-25			
				132.31 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241362 TOTAL:			132.31
241363	10/17/2025	PRTD	99999	DAWN CROSBY	NEM20260731	10/08/2025		10172025	304.50
	Invoice: NEM20260731					NEM ESCROW PAY OUT 2024-25			
				304.50 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241363 TOTAL:			304.50
241364	10/17/2025	PRTD	99999	DEAN CAMPBELL	NEM20260732	10/08/2025		10172025	109.68
	Invoice: NEM20260732					NEM ESCROW PAY OUT 2024-25			
				109.68 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241364 TOTAL:			109.68
241365	10/17/2025	PRTD	99999	DEAN A PAINTER	NEM20260733	10/08/2025		10172025	222.60
	Invoice: NEM20260733					NEM ESCROW PAY OUT 2024-25			
				222.60 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241365 TOTAL:			222.60
241366	10/17/2025	PRTD	99999	DEBBIE DONALDSON	NEM20260734	10/08/2025		10172025	231.41
	Invoice: NEM20260734					NEM ESCROW PAY OUT 2024-25			
				231.41 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241366 TOTAL:			231.41

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241367	10/17/2025	PRTD	99999	DEBORAH GRINDALL	NEM20260735	10/08/2025		10172025	104.18
Invoice: NEM20260735						NEM ESCROW PAY OUT 2024-25			
				104.18 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241367 TOTAL:			104.18
241368	10/17/2025	PRTD	99999	DEBORAH MCGUANE	NEM20260736	10/08/2025		10172025	175.45
Invoice: NEM20260736						NEM ESCROW PAY OUT 2024-25			
				175.45 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241368 TOTAL:			175.45
241369	10/17/2025	PRTD	99999	DEBRA K GILSTRAP	NEM20260737	10/08/2025		10172025	155.02
Invoice: NEM20260737						NEM ESCROW PAY OUT 2024-25			
				155.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241369 TOTAL:			155.02
241370	10/17/2025	PRTD	99999	DEEANN BLANPIED	NEM20260738	10/08/2025		10172025	214.41
Invoice: NEM20260738						NEM ESCROW PAY OUT 2024-25			
				214.41 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241370 TOTAL:			214.41
241371	10/17/2025	PRTD	99999	DEENA ALTMAN	NEM20260739	10/08/2025		10172025	318.00
Invoice: NEM20260739						NEM ESCROW PAY OUT 2024-25			
				318.00 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241371 TOTAL:			318.00
241372	10/17/2025	PRTD	99999	DENNIS BETHSCHEIDER	NEM20260740	10/08/2025		10172025	287.72
Invoice: NEM20260740						NEM ESCROW PAY OUT 2024-25			
				287.72 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241372 TOTAL:			287.72
241373	10/17/2025	PRTD	99999	DENNIS KELLY	NEM20260741	10/08/2025		10172025	471.17
Invoice: NEM20260741						NEM ESCROW PAY OUT 2024-25			
				471.17 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241373 TOTAL:			471.17

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241374	10/17/2025	PRTD	99999	DENNIS SAPIRE	NEM20260742	10/08/2025		10172025	388.49
Invoice: NEM20260742						NEM ESCROW PAY OUT 2024-25			
				388.49 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241374 TOTAL:		388.49
241375	10/17/2025	PRTD	99999	DENNIS W BURK	NEM20260743	10/08/2025		10172025	280.02
Invoice: NEM20260743						NEM ESCROW PAY OUT 2024-25			
				280.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241375 TOTAL:		280.02
241376	10/17/2025	PRTD	99999	DIANE L JOHNSON	NEM20260744	10/08/2025		10172025	147.77
Invoice: NEM20260744						NEM ESCROW PAY OUT 2024-25			
				147.77 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241376 TOTAL:		147.77
241377	10/17/2025	PRTD	99999	DION PHANEUF	NEM20260745	10/08/2025		10172025	266.06
Invoice: NEM20260745						NEM ESCROW PAY OUT 2024-25			
				266.06 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241377 TOTAL:		266.06
241378	10/17/2025	PRTD	99999	DON PEPPERMAN	NEM20260746	10/08/2025		10172025	205.67
Invoice: NEM20260746						NEM ESCROW PAY OUT 2024-25			
				205.67 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241378 TOTAL:		205.67
241379	10/17/2025	PRTD	99999	DONA STEVENS	NEM20260747	10/08/2025		10172025	165.83
Invoice: NEM20260747						NEM ESCROW PAY OUT 2024-25			
				165.83 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241379 TOTAL:		165.83
241380	10/17/2025	PRTD	99999	DOROTHY BRODERICK	NEM20260748	10/08/2025		10172025	204.82
Invoice: NEM20260748						NEM ESCROW PAY OUT 2024-25			
				204.82 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241380 TOTAL:		204.82

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241381	10/17/2025	PRTD	99999	DOROTHY ZINNI	NEM20260749	10/08/2025		10172025	150.07
Invoice: NEM20260749						NEM ESCROW PAY OUT 2024-25			
				150.07 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241381 TOTAL:			150.07
241382	10/17/2025	PRTD	99999	DOUGLAS W BORLAND	NEM20260750	10/08/2025		10172025	138.57
Invoice: NEM20260750						NEM ESCROW PAY OUT 2024-25			
				138.57 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241382 TOTAL:			138.57
241383	10/17/2025	PRTD	99999	DREW NESS	NEM20260751	10/08/2025		10172025	134.22
Invoice: NEM20260751						NEM ESCROW PAY OUT 2024-25			
				134.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241383 TOTAL:			134.22
241384	10/17/2025	PRTD	99999	ED DEBOLT	NEM20260752	10/08/2025		10172025	124.98
Invoice: NEM20260752						NEM ESCROW PAY OUT 2024-25			
				124.98 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241384 TOTAL:			124.98
241385	10/17/2025	PRTD	99999	EDMOND TAVANIAN	NEM20260753	10/08/2025		10172025	334.67
Invoice: NEM20260753						NEM ESCROW PAY OUT 2024-25			
				334.67 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241385 TOTAL:			334.67
241386	10/17/2025	PRTD	99999	EDWARD G LEWIS	NEM20260754	10/08/2025		10172025	419.79
Invoice: NEM20260754						NEM ESCROW PAY OUT 2024-25			
				419.79 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241386 TOTAL:			419.79
241387	10/17/2025	PRTD	99999	ELAINE CORRIGAN	NEM20260755	10/08/2025		10172025	106.76
Invoice: NEM20260755						NEM ESCROW PAY OUT 2024-25			
				106.76 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241387 TOTAL:			106.76

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241388	10/17/2025	PRTD	99999	ELIZABETH A ZORYAN	NEM20260756	10/08/2025		10172025	102.10
Invoice: NEM20260756				NEM ESCROW PAY OUT 2024-25					
				102.10 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241388 TOTAL:					102.10
241389	10/17/2025	PRTD	99999	ELLICE KAMINSKY	EV20250021	10/06/2025		10172025	500.00
Invoice: EV20250021				RMEA CHARGEUP PROGRAM					
				500.00 600 7426 SUSTAINABILITY REBATES & PRGRM					
				CHECK 241389 TOTAL:					500.00
241390	10/17/2025	PRTD	99999	ENCOURAGEMENT FOR LIFE	NEM20260757	10/08/2025		10172025	274.30
Invoice: NEM20260757				NEM ESCROW PAY OUT 2024-25					
				274.30 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241390 TOTAL:					274.30
241391	10/17/2025	PRTD	99999	ERIC WILLS	NEM20260758	10/08/2025		10172025	150.34
Invoice: NEM20260758				NEM ESCROW PAY OUT 2024-25					
				150.34 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241391 TOTAL:					150.34
241392	10/17/2025	PRTD	99999	ERIKA ROBERTS	NEM20260759	10/08/2025		10172025	148.52
Invoice: NEM20260759				NEM ESCROW PAY OUT 2024-25					
				148.52 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241392 TOTAL:					148.52
241393	10/17/2025	PRTD	99999	ESTHER OVERTOOM	NEM20260760	10/08/2025		10172025	551.88
Invoice: NEM20260760				NEM ESCROW PAY OUT 2024-25					
				551.88 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241393 TOTAL:					551.88
241394	10/17/2025	PRTD	99999	ESTHER M VAN BEERS	NEM20260761	10/08/2025		10172025	118.77
Invoice: NEM20260761				NEM ESCROW PAY OUT 2024-25					
				118.77 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241394 TOTAL:					118.77

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241395	10/17/2025	PRTD	99999	EVELYN F DUCKETT	NEM20260762	10/08/2025		10172025	681.16
Invoice: NEM20260762					NEM ESCROW PAY OUT 2024-25				
				681.16 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241395 TOTAL:		681.16
241396	10/17/2025	PRTD	99999	FARSHID HAKIM	NEM20260763	10/08/2025		10172025	105.44
Invoice: NEM20260763					NEM ESCROW PAY OUT 2024-25				
				105.44 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241396 TOTAL:		105.44
241397	10/17/2025	PRTD	99999	FERNANDO SUAREZ	NEM20260764	10/08/2025		10172025	536.58
Invoice: NEM20260764					NEM ESCROW PAY OUT 2024-25				
				536.58 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241397 TOTAL:		536.58
241398	10/17/2025	PRTD	99999	FERNANDO J DIAZ	NEM20260765	10/08/2025		10172025	136.47
Invoice: NEM20260765					NEM ESCROW PAY OUT 2024-25				
				136.47 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241398 TOTAL:		136.47
241399	10/17/2025	PRTD	99999	FRAN KUSNITZOW	NEM20260766	10/08/2025		10172025	508.30
Invoice: NEM20260766					NEM ESCROW PAY OUT 2024-25				
				508.30 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241399 TOTAL:		508.30
241400	10/17/2025	PRTD	99999	FRANK E. DE VITIS	NEM20260767	10/08/2025		10172025	133.87
Invoice: NEM20260767					NEM ESCROW PAY OUT 2024-25				
				133.87 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241400 TOTAL:		133.87
241401	10/17/2025	PRTD	99999	FRED GRIMSHAW	NEM20260768	10/08/2025		10172025	402.86
Invoice: NEM20260768					NEM ESCROW PAY OUT 2024-25				
				402.86 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241401 TOTAL:		402.86

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241402	10/17/2025	PRTD	99999	GAIL RICHARDS	NEM20260769	10/08/2025		10172025	124.19
Invoice: NEM20260769						NEM ESCROW PAY OUT 2024-25			
				124.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241402 TOTAL:			124.19
241403	10/17/2025	PRTD	99999	GARY BRILL	NEM20260770	10/08/2025		10172025	133.22
Invoice: NEM20260770						NEM ESCROW PAY OUT 2024-25			
				133.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241403 TOTAL:			133.22
241404	10/17/2025	PRTD	99999	GARY GALTON	NEM20260771	10/08/2025		10172025	353.10
Invoice: NEM20260771						NEM ESCROW PAY OUT 2024-25			
				353.10 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241404 TOTAL:			353.10
241405	10/17/2025	PRTD	99999	GARY SEGURA	NEM20260772	10/08/2025		10172025	379.39
Invoice: NEM20260772						NEM ESCROW PAY OUT 2024-25			
				379.39 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241405 TOTAL:			379.39
241406	10/17/2025	PRTD	99999	GARY M MALINO	NEM20260773	10/08/2025		10172025	110.38
Invoice: NEM20260773						NEM ESCROW PAY OUT 2024-25			
				110.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241406 TOTAL:			110.38
241407	10/17/2025	PRTD	99999	GEORGE LYNCH	NEM20260774	10/08/2025		10172025	203.33
Invoice: NEM20260774						NEM ESCROW PAY OUT 2024-25			
				203.33 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241407 TOTAL:			203.33
241408	10/17/2025	PRTD	99999	GEORGE NAMKUNG	NEM20260775	10/08/2025		10172025	175.01
Invoice: NEM20260775						NEM ESCROW PAY OUT 2024-25			
				175.01 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241408 TOTAL:			175.01

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241409	10/17/2025	PRTD	99999	GEORGE E KATHAWA	NEM20260776	10/08/2025		10172025	391.83
Invoice: NEM20260776					NEM ESCROW PAY OUT 2024-25				
				391.83 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241409 TOTAL:		391.83
241410	10/17/2025	PRTD	99999	GERSHON LESSER	NEM20260777	10/08/2025		10172025	300.09
Invoice: NEM20260777					NEM ESCROW PAY OUT 2024-25				
				300.09 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241410 TOTAL:		300.09
241411	10/17/2025	PRTD	99999	GILBERT LIPMAN	NEM20260778	10/08/2025		10172025	312.42
Invoice: NEM20260778					NEM ESCROW PAY OUT 2024-25				
				312.42 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241411 TOTAL:		312.42
241412	10/17/2025	PRTD	99999	GLENN MOLNAR	NEM20260779	10/08/2025		10172025	862.28
Invoice: NEM20260779					NEM ESCROW PAY OUT 2024-25				
				862.28 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241412 TOTAL:		862.28
241413	10/17/2025	PRTD	99999	GLENN WEAVER	NEM20260780	10/08/2025		10172025	107.70
Invoice: NEM20260780					NEM ESCROW PAY OUT 2024-25				
				107.70 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241413 TOTAL:		107.70
241414	10/17/2025	PRTD	99999	GLORIA KORNGOLD	NEM20260781	10/08/2025		10172025	191.76
Invoice: NEM20260781					NEM ESCROW PAY OUT 2024-25				
				191.76 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241414 TOTAL:		191.76
241415	10/17/2025	PRTD	99999	GLORIA TUINHOUT	NEM20260782	10/08/2025		10172025	263.37
Invoice: NEM20260782					NEM ESCROW PAY OUT 2024-25				
				263.37 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241415 TOTAL:		263.37

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241416	10/17/2025	PRTD	99999	GRAHAM OTTE	NEM20260783	10/08/2025		10172025	316.46
Invoice: NEM20260783						NEM ESCROW PAY OUT 2024-25			
				316.46 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241416 TOTAL:		316.46
241417	10/17/2025	PRTD	99999	GREGG LEVIN	NEM20260784	10/08/2025		10172025	160.13
Invoice: NEM20260784						NEM ESCROW PAY OUT 2024-25			
				160.13 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241417 TOTAL:		160.13
241418	10/17/2025	PRTD	99999	GRISELDA PATRICIA MACIAS	NEM20260785	10/08/2025		10172025	108.91
Invoice: NEM20260785						NEM ESCROW PAY OUT 2024-25			
				108.91 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241418 TOTAL:		108.91
241419	10/17/2025	PRTD	99999	HANNAH YOO	NEM20260786	10/08/2025		10172025	105.71
Invoice: NEM20260786						NEM ESCROW PAY OUT 2024-25			
				105.71 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241419 TOTAL:		105.71
241420	10/17/2025	PRTD	99999	HAROLD BERGHOUDIAN	NEM20260787	10/08/2025		10172025	201.35
Invoice: NEM20260787						NEM ESCROW PAY OUT 2024-25			
				201.35 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241420 TOTAL:		201.35
241421	10/17/2025	PRTD	99999	HAROLD EUGENE EFFLER	NEM20260788	10/08/2025		10172025	283.50
Invoice: NEM20260788						NEM ESCROW PAY OUT 2024-25			
				283.50 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241421 TOTAL:		283.50
241422	10/17/2025	PRTD	99999	HOLLY M MESROBIAN	NEM20260789	10/08/2025		10172025	1,249.49
Invoice: NEM20260789						NEM ESCROW PAY OUT 2024-25			
				1,249.49 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241422 TOTAL:		1,249.49

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241423	10/17/2025	PRTD	99999	HUGH MEEKS	NEM20260790	10/08/2025		10172025	473.38
Invoice: NEM20260790					NEM ESCROW PAY OUT 2024-25				
				473.38 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241423 TOTAL:		473.38
241424	10/17/2025	PRTD	99999	HUGH D GALT	NEM20260791	10/08/2025		10172025	239.97
Invoice: NEM20260791					NEM ESCROW PAY OUT 2024-25				
				239.97 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241424 TOTAL:		239.97
241425	10/17/2025	PRTD	99999	HUMBERTO GEREDA	NEM20260792	10/08/2025		10172025	287.00
Invoice: NEM20260792					NEM ESCROW PAY OUT 2024-25				
				287.00 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241425 TOTAL:		287.00
241426	10/17/2025	PRTD	99999	IRENE LARSEN	NEM20260793	10/08/2025		10172025	439.01
Invoice: NEM20260793					NEM ESCROW PAY OUT 2024-25				
				439.01 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241426 TOTAL:		439.01
241427	10/17/2025	PRTD	99999	ISIAH HARRIS	NEM20260794	10/08/2025		10172025	259.11
Invoice: NEM20260794					NEM ESCROW PAY OUT 2024-25				
				259.11 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241427 TOTAL:		259.11
241428	10/17/2025	PRTD	99999	IVAN VASILJ	NEM20260795	10/08/2025		10172025	344.02
Invoice: NEM20260795					NEM ESCROW PAY OUT 2024-25				
				344.02 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241428 TOTAL:		344.02
241429	10/17/2025	PRTD	99999	J B KEMP	NEM20260796	10/08/2025		10172025	120.15
Invoice: NEM20260796					NEM ESCROW PAY OUT 2024-25				
				120.15 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241429 TOTAL:		120.15

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241430	10/17/2025	PRTD	99999	J.C. CONSTANT	NEM20260797	10/08/2025		10172025	115.45
Invoice: NEM20260797				NEM ESCROW PAY OUT 2024-25					
				115.45 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241430 TOTAL:		115.45
241431	10/17/2025	PRTD	99999	JACK ROSEN	NEM20260798	10/08/2025		10172025	221.09
Invoice: NEM20260798				NEM ESCROW PAY OUT 2024-25					
				221.09 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241431 TOTAL:		221.09
241432	10/17/2025	PRTD	99999	JACK C DALTON	NEM20260799	10/08/2025		10172025	431.24
Invoice: NEM20260799				NEM ESCROW PAY OUT 2024-25					
				431.24 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241432 TOTAL:		431.24
241433	10/17/2025	PRTD	99999	JAMES BARNES	NEM20260800	10/08/2025		10172025	255.86
Invoice: NEM20260800				NEM ESCROW PAY OUT 2024-25					
				255.86 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241433 TOTAL:		255.86
241434	10/17/2025	PRTD	99999	JAMES BURKE	NEM20260801	10/08/2025		10172025	221.79
Invoice: NEM20260801				NEM ESCROW PAY OUT 2024-25					
				221.79 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241434 TOTAL:		221.79
241435	10/17/2025	PRTD	99999	JAMES KRIDEL	NEM20260802	10/08/2025		10172025	114.55
Invoice: NEM20260802				NEM ESCROW PAY OUT 2024-25					
				114.55 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241435 TOTAL:		114.55
241436	10/17/2025	PRTD	99999	JAMES KROLL	NEM20260803	10/08/2025		10172025	189.34
Invoice: NEM20260803				NEM ESCROW PAY OUT 2024-25					
				189.34 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241436 TOTAL:		189.34

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241437	10/17/2025	PRTD	99999	JAMES SHEYA	NEM20260804	10/08/2025		10172025	202.88
Invoice: NEM20260804						NEM ESCROW PAY OUT 2024-25			
				202.88 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241437 TOTAL:			202.88
241438	10/17/2025	PRTD	99999	JANET MILLER	NEM20260805	10/08/2025		10172025	246.54
Invoice: NEM20260805						NEM ESCROW PAY OUT 2024-25			
				246.54 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241438 TOTAL:			246.54
241439	10/17/2025	PRTD	99999	JANICE GACCHINA	NEM20260806	10/08/2025		10172025	109.97
Invoice: NEM20260806						NEM ESCROW PAY OUT 2024-25			
				109.97 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241439 TOTAL:			109.97
241440	10/17/2025	PRTD	99999	JANICE WISSLER	NEM20260807	10/08/2025		10172025	283.35
Invoice: NEM20260807						NEM ESCROW PAY OUT 2024-25			
				283.35 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241440 TOTAL:			283.35
241441	10/17/2025	PRTD	99999	JANIS MCMULLEN	NEM20260808	10/08/2025		10172025	173.96
Invoice: NEM20260808						NEM ESCROW PAY OUT 2024-25			
				173.96 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241441 TOTAL:			173.96
241442	10/17/2025	PRTD	99999	JAY PAK	NEM20260809	10/08/2025		10172025	222.37
Invoice: NEM20260809						NEM ESCROW PAY OUT 2024-25			
				222.37 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241442 TOTAL:			222.37
241443	10/17/2025	PRTD	99999	JEAN C CARRUS	NEM20260810	10/08/2025		10172025	146.84
Invoice: NEM20260810						NEM ESCROW PAY OUT 2024-25			
				146.84 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241443 TOTAL:			146.84

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241444	10/17/2025	PRTD	99999	JEFF HERZ	NEM20260811	10/08/2025		10172025	730.79
Invoice: NEM20260811				NEM ESCROW PAY OUT 2024-25					
				730.79 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241444 TOTAL:					730.79
241445	10/17/2025	PRTD	99999	JEFF RUSSELL	NEM20260812	10/08/2025		10172025	214.25
Invoice: NEM20260812				NEM ESCROW PAY OUT 2024-25					
				214.25 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241445 TOTAL:					214.25
241446	10/17/2025	PRTD	99999	JEFFREY BARBER	NEM20260813	10/08/2025		10172025	112.68
Invoice: NEM20260813				NEM ESCROW PAY OUT 2024-25					
				112.68 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241446 TOTAL:					112.68
241447	10/17/2025	PRTD	99999	JENNIFER L MATTHEWS	NEM20260814	10/08/2025		10172025	160.58
Invoice: NEM20260814				NEM ESCROW PAY OUT 2024-25					
				160.58 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241447 TOTAL:					160.58
241448	10/17/2025	PRTD	99999	JEREMY KEARNS	NEM20260815	10/08/2025		10172025	266.10
Invoice: NEM20260815				NEM ESCROW PAY OUT 2024-25					
				266.10 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241448 TOTAL:					266.10
241449	10/17/2025	PRTD	99999	JEROME H HOLMLUND	NEM20260816	10/08/2025		10172025	112.07
Invoice: NEM20260816				NEM ESCROW PAY OUT 2024-25					
				112.07 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241449 TOTAL:					112.07
241450	10/17/2025	PRTD	99999	JERRY MORRIS	NEM20260817	10/08/2025		10172025	117.57
Invoice: NEM20260817				NEM ESCROW PAY OUT 2024-25					
				117.57 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241450 TOTAL:					117.57

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241451	10/17/2025	PRTD	99999	JINHO CHOI	NEM20260818	10/08/2025		10172025	186.96
Invoice: NEM20260818				NEM ESCROW PAY OUT 2024-25					
				186.96 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241451 TOTAL:					186.96
241452	10/17/2025	PRTD	99999	JOAN DIM	NEM20260819	10/08/2025		10172025	439.91
Invoice: NEM20260819				NEM ESCROW PAY OUT 2024-25					
				439.91 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241452 TOTAL:					439.91
241453	10/17/2025	PRTD	99999	JOAN DODGE	NEM20260820	10/08/2025		10172025	214.21
Invoice: NEM20260820				NEM ESCROW PAY OUT 2024-25					
				214.21 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241453 TOTAL:					214.21
241454	10/17/2025	PRTD	99999	JOAN TEUFEL	NEM20260821	10/08/2025		10172025	169.98
Invoice: NEM20260821				NEM ESCROW PAY OUT 2024-25					
				169.98 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241454 TOTAL:					169.98
241455	10/17/2025	PRTD	99999	JOANNE MISHEK	NEM20260822	10/08/2025		10172025	123.91
Invoice: NEM20260822				NEM ESCROW PAY OUT 2024-25					
				123.91 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241455 TOTAL:					123.91
241456	10/17/2025	PRTD	99999	JOANNE C SARRO	NEM20260823	10/08/2025		10172025	209.81
Invoice: NEM20260823				NEM ESCROW PAY OUT 2024-25					
				209.81 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241456 TOTAL:					209.81
241457	10/17/2025	PRTD	99999	JODI M SANSONE	NEM20260824	10/08/2025		10172025	184.20
Invoice: NEM20260824				NEM ESCROW PAY OUT 2024-25					
				184.20 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241457 TOTAL:					184.20

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241458	10/17/2025	PRTD	99999	JOEL CLARK	NEM20260825	10/08/2025		10172025	341.32
Invoice: NEM20260825						NEM ESCROW PAY OUT 2024-25			
				341.32 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241458 TOTAL:		341.32
241459	10/17/2025	PRTD	99999	JOEL S CORREA	NEM20260826	10/08/2025		10172025	137.92
Invoice: NEM20260826						NEM ESCROW PAY OUT 2024-25			
				137.92 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241459 TOTAL:		137.92
241460	10/17/2025	PRTD	99999	JOHN DAGRES	NEM20260827	10/08/2025		10172025	102.95
Invoice: NEM20260827						NEM ESCROW PAY OUT 2024-25			
				102.95 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241460 TOTAL:		102.95
241461	10/17/2025	PRTD	99999	JOHN FALCONE	NEM20260828	10/08/2025		10172025	155.19
Invoice: NEM20260828						NEM ESCROW PAY OUT 2024-25			
				155.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241461 TOTAL:		155.19
241462	10/17/2025	PRTD	99999	JOHN MONTOYA	NEM20260829	10/08/2025		10172025	113.51
Invoice: NEM20260829						NEM ESCROW PAY OUT 2024-25			
				113.51 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241462 TOTAL:		113.51
241463	10/17/2025	PRTD	99999	JOHN NELSON	NEM20260830	10/08/2025		10172025	206.80
Invoice: NEM20260830						NEM ESCROW PAY OUT 2024-25			
				206.80 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241463 TOTAL:		206.80
241464	10/17/2025	PRTD	99999	JOHN POPPY	NEM20260831	10/08/2025		10172025	271.27
Invoice: NEM20260831						NEM ESCROW PAY OUT 2024-25			
				271.27 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241464 TOTAL:		271.27

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241465	10/17/2025	PRTD	99999	JOHN SCHMITT	NEM20260832	10/08/2025		10172025	217.76
Invoice: NEM20260832						NEM ESCROW PAY OUT 2024-25			
					217.76 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241465 TOTAL:	217.76
241466	10/17/2025	PRTD	99999	JOHN SIEHL	NEM20260833	10/08/2025		10172025	210.74
Invoice: NEM20260833						NEM ESCROW PAY OUT 2024-25			
					210.74 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241466 TOTAL:	210.74
241467	10/17/2025	PRTD	99999	JOHN WILLIAMS	NEM20260834	10/08/2025		10172025	136.24
Invoice: NEM20260834						NEM ESCROW PAY OUT 2024-25			
					136.24 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241467 TOTAL:	136.24
241468	10/17/2025	PRTD	99999	JOHN YOUNG	NEM20260835	10/08/2025		10172025	158.38
Invoice: NEM20260835						NEM ESCROW PAY OUT 2024-25			
					158.38 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241468 TOTAL:	158.38
241469	10/17/2025	PRTD	99999	JOHN A MACMAHON	NEM20260836	10/08/2025		10172025	191.14
Invoice: NEM20260836						NEM ESCROW PAY OUT 2024-25			
					191.14 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241469 TOTAL:	191.14
241470	10/17/2025	PRTD	99999	JOHN C WACKER	NEM20260837	10/08/2025		10172025	294.53
Invoice: NEM20260837						NEM ESCROW PAY OUT 2024-25			
					294.53 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241470 TOTAL:	294.53
241471	10/17/2025	PRTD	99999	JOHN D ALLAN	NEM20260838	10/08/2025		10172025	161.14
Invoice: NEM20260838						NEM ESCROW PAY OUT 2024-25			
					161.14 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241471 TOTAL:	161.14

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241472	10/17/2025	PRTD	99999	JOHN E HERPY	NEM20260839	10/08/2025		10172025	105.74
Invoice: NEM20260839				NEM ESCROW PAY OUT 2024-25					
				105.74 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241472 TOTAL:					105.74
241473	10/17/2025	PRTD	99999	JOHN J KOCK	NEM20260840	10/08/2025		10172025	230.42
Invoice: NEM20260840				NEM ESCROW PAY OUT 2024-25					
				230.42 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241473 TOTAL:					230.42
241474	10/17/2025	PRTD	99999	JOHN N GIARDINA	NEM20260841	10/08/2025		10172025	189.39
Invoice: NEM20260841				NEM ESCROW PAY OUT 2024-25					
				189.39 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241474 TOTAL:					189.39
241475	10/17/2025	PRTD	99999	JOHN P POWELL	NEM20260842	10/08/2025		10172025	410.10
Invoice: NEM20260842				NEM ESCROW PAY OUT 2024-25					
				410.10 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241475 TOTAL:					410.10
241476	10/17/2025	PRTD	99999	JOHN ROBERT HILL	NEM20260843	10/08/2025		10172025	113.75
Invoice: NEM20260843				NEM ESCROW PAY OUT 2024-25					
				113.75 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241476 TOTAL:					113.75
241477	10/17/2025	PRTD	99999	JOHN S DUBROW	NEM20260844	10/08/2025		10172025	221.54
Invoice: NEM20260844				NEM ESCROW PAY OUT 2024-25					
				221.54 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241477 TOTAL:					221.54
241478	10/17/2025	PRTD	99999	JOHN T BISSELL	NEM20260845	10/08/2025		10172025	172.74
Invoice: NEM20260845				NEM ESCROW PAY OUT 2024-25					
				172.74 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241478 TOTAL:					172.74

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241479	10/17/2025	PRTD	99999	JOHN V BLANDFORD	NEM20260846	10/08/2025		10172025	342.67
Invoice: NEM20260846				NEM ESCROW PAY OUT 2024-25					
				342.67 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241479 TOTAL:		342.67
241480	10/17/2025	PRTD	99999	JON RANT	NEM20260847	10/08/2025		10172025	128.20
Invoice: NEM20260847				NEM ESCROW PAY OUT 2024-25					
				128.20 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241480 TOTAL:		128.20
241481	10/17/2025	PRTD	99999	JON ROBERTSON	NEM20260848	10/08/2025		10172025	392.36
Invoice: NEM20260848				NEM ESCROW PAY OUT 2024-25					
				392.36 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241481 TOTAL:		392.36
241482	10/17/2025	PRTD	99999	JONATHAN LAPPEN	NEM20260849	10/08/2025		10172025	191.87
Invoice: NEM20260849				NEM ESCROW PAY OUT 2024-25					
				191.87 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241482 TOTAL:		191.87
241483	10/17/2025	PRTD	99999	JOSEF RIEMHOFER	NEM20260850	10/08/2025		10172025	151.46
Invoice: NEM20260850				NEM ESCROW PAY OUT 2024-25					
				151.46 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241483 TOTAL:		151.46
241484	10/17/2025	PRTD	99999	JOSEPH DUGAN	NEM20260851	10/08/2025		10172025	409.60
Invoice: NEM20260851				NEM ESCROW PAY OUT 2024-25					
				409.60 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241484 TOTAL:		409.60
241485	10/17/2025	PRTD	99999	JOSEPH MANTELLO	NEM20260852	10/08/2025		10172025	772.17
Invoice: NEM20260852				NEM ESCROW PAY OUT 2024-25					
				772.17 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241485 TOTAL:		772.17

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241486	10/17/2025	PRTD	99999	JOSEPH MOTT	NEM20260853	10/08/2025		10172025	187.67
Invoice: NEM20260853				NEM ESCROW PAY OUT 2024-25					
				187.67 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241486 TOTAL:					187.67
241487	10/17/2025	PRTD	99999	JOSEPH WILSON	NEM20260854	10/08/2025		10172025	134.42
Invoice: NEM20260854				NEM ESCROW PAY OUT 2024-25					
				134.42 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241487 TOTAL:					134.42
241488	10/17/2025	PRTD	99999	JOSEPH A GIBBS	NEM20260855	10/08/2025		10172025	181.01
Invoice: NEM20260855				NEM ESCROW PAY OUT 2024-25					
				181.01 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241488 TOTAL:					181.01
241489	10/17/2025	PRTD	99999	JOSEPH D III DENNIS	NEM20260856	10/08/2025		10172025	130.29
Invoice: NEM20260856				NEM ESCROW PAY OUT 2024-25					
				130.29 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241489 TOTAL:					130.29
241490	10/17/2025	PRTD	99999	JOSEPH HOFFMAN	BR20250020	10/06/2025		10172025	1,000.00
Invoice: BR20250020				RMEA RESILIENCY BATTERY PROGRAM					
				1,000.00 600 7426 SUSTAINABILITY REBATES & PRGRM					
				CHECK 241490 TOTAL:					1,000.00
241491	10/17/2025	PRTD	99999	JOYCE COX	NEM20260857	10/08/2025		10172025	319.99
Invoice: NEM20260857				NEM ESCROW PAY OUT 2024-25					
				319.99 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241491 TOTAL:					319.99
241492	10/17/2025	PRTD	99999	JOYCE JOHNSON	NEM20260858	10/08/2025		10172025	105.17
Invoice: NEM20260858				NEM ESCROW PAY OUT 2024-25					
				105.17 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241492 TOTAL:					105.17

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241493	10/17/2025	PRTD	99999	JUDITH CAROLLA	NEM20260859	10/08/2025		10172025	219.03
Invoice: NEM20260859					NEM ESCROW PAY OUT 2024-25				
				219.03 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241493 TOTAL:		219.03
241494	10/17/2025	PRTD	99999	JUDY STOJSAVLJEVIC	NEM20260860	10/08/2025		10172025	269.53
Invoice: NEM20260860					NEM ESCROW PAY OUT 2024-25				
				269.53 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241494 TOTAL:		269.53
241495	10/17/2025	PRTD	99999	JULIAN ROSENBERG	NEM20260861	10/08/2025		10172025	153.70
Invoice: NEM20260861					NEM ESCROW PAY OUT 2024-25				
				153.70 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241495 TOTAL:		153.70
241496	10/17/2025	PRTD	99999	JULIANNA THIRAS	NEM20260862	10/08/2025		10172025	149.61
Invoice: NEM20260862					NEM ESCROW PAY OUT 2024-25				
				149.61 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241496 TOTAL:		149.61
241497	10/17/2025	PRTD	99999	JULIE AUSTIN	NEM20260863	10/08/2025		10172025	193.32
Invoice: NEM20260863					NEM ESCROW PAY OUT 2024-25				
				193.32 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241497 TOTAL:		193.32
241498	10/17/2025	PRTD	99999	JUNE M YANNUZZI	NEM20260864	10/08/2025		10172025	163.22
Invoice: NEM20260864					NEM ESCROW PAY OUT 2024-25				
				163.22 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241498 TOTAL:		163.22
241499	10/17/2025	PRTD	99999	KAREN BLUMIN	NEM20260865	10/08/2025		10172025	171.35
Invoice: NEM20260865					NEM ESCROW PAY OUT 2024-25				
				171.35 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241499 TOTAL:		171.35

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241500	10/17/2025	PRTD	99999	KAREN E SPENCER	NEM20260866	10/08/2025		10172025	314.38
Invoice: NEM20260866						NEM ESCROW PAY OUT 2024-25			
					314.38 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241500 TOTAL:	314.38
241501	10/17/2025	PRTD	99999	KARL ANDERSON	NEM20260867	10/08/2025		10172025	387.21
Invoice: NEM20260867						NEM ESCROW PAY OUT 2024-25			
					387.21 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241501 TOTAL:	387.21
241502	10/17/2025	PRTD	99999	KARL SNIADY	NEM20260868	10/08/2025		10172025	105.23
Invoice: NEM20260868						NEM ESCROW PAY OUT 2024-25			
					105.23 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241502 TOTAL:	105.23
241503	10/17/2025	PRTD	99999	KATHI BALABAN	NEM20260869	10/08/2025		10172025	150.32
Invoice: NEM20260869						NEM ESCROW PAY OUT 2024-25			
					150.32 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241503 TOTAL:	150.32
241504	10/17/2025	PRTD	99999	KATHLEEN GRANGER	NEM20260870	10/08/2025		10172025	198.78
Invoice: NEM20260870						NEM ESCROW PAY OUT 2024-25			
					198.78 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241504 TOTAL:	198.78
241505	10/17/2025	PRTD	99999	KATHLEEN PAGANO	NEM20260871	10/08/2025		10172025	178.59
Invoice: NEM20260871						NEM ESCROW PAY OUT 2024-25			
					178.59 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241505 TOTAL:	178.59
241506	10/17/2025	PRTD	99999	KATHLEEN K CARROLL	NEM20260872	10/08/2025		10172025	107.98
Invoice: NEM20260872						NEM ESCROW PAY OUT 2024-25			
					107.98 600 2653	NET ENERGY METERING LIABILITY			
							CHECK	241506 TOTAL:	107.98

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241507	10/17/2025	PRTD	99999	KELLY BREAKS	NEM20260873	10/08/2025		10172025	240.88
Invoice: NEM20260873				NEM ESCROW PAY OUT 2024-25					
				240.88 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241507 TOTAL:					240.88
241508	10/17/2025	PRTD	99999	KELLY RAMIREZ	NEM20260874	10/08/2025		10172025	183.51
Invoice: NEM20260874				NEM ESCROW PAY OUT 2024-25					
				183.51 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241508 TOTAL:					183.51
241509	10/17/2025	PRTD	99999	KENNETH LANDKAMMER	NEM20260875	10/08/2025		10172025	237.54
Invoice: NEM20260875				NEM ESCROW PAY OUT 2024-25					
				237.54 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241509 TOTAL:					237.54
241510	10/17/2025	PRTD	99999	KENT G PRAMHUS	NEM20260876	10/08/2025		10172025	291.49
Invoice: NEM20260876				NEM ESCROW PAY OUT 2024-25					
				291.49 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241510 TOTAL:					291.49
241511	10/17/2025	PRTD	99999	KENT VINSON	BR20250025	10/06/2025		10172025	1,000.00
Invoice: BR20250025				RMEA RESILIENCY BATTERY PROGRAM					
				1,000.00 600 7426 SUSTAINABILITY REBATES & PRGRM					
				CHECK 241511 TOTAL:					1,000.00
241512	10/17/2025	PRTD	99999	KERI JONES	NEM20260877	10/08/2025		10172025	106.93
Invoice: NEM20260877				NEM ESCROW PAY OUT 2024-25					
				106.93 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241512 TOTAL:					106.93
241513	10/17/2025	PRTD	99999	KEVIN DORAN	NEM20260878	10/08/2025		10172025	205.52
Invoice: NEM20260878				NEM ESCROW PAY OUT 2024-25					
				205.52 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241513 TOTAL:					205.52

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241514	10/17/2025	PRTD	99999	KEVIN FARRENKOPF	NEM20260879	10/08/2025		10172025	123.87
Invoice: NEM20260879				NEM ESCROW PAY OUT 2024-25					
				123.87 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241514 TOTAL:					123.87
241515	10/17/2025	PRTD	99999	KEVIN M LARAMIE	NEM20260880	10/08/2025		10172025	174.33
Invoice: NEM20260880				NEM ESCROW PAY OUT 2024-25					
				174.33 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241515 TOTAL:					174.33
241516	10/17/2025	PRTD	99999	KHALID JAVAID	NEM20260881	10/08/2025		10172025	164.30
Invoice: NEM20260881				NEM ESCROW PAY OUT 2024-25					
				164.30 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241516 TOTAL:					164.30
241517	10/17/2025	PRTD	99999	KIM MALCOLM-VALENTE	NEM20260882	10/08/2025		10172025	283.45
Invoice: NEM20260882				NEM ESCROW PAY OUT 2024-25					
				283.45 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241517 TOTAL:					283.45
241518	10/17/2025	PRTD	99999	KIRK F MARTEN	NEM20260883	10/08/2025		10172025	142.30
Invoice: NEM20260883				NEM ESCROW PAY OUT 2024-25					
				142.30 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241518 TOTAL:					142.30
241519	10/17/2025	PRTD	99999	KO DAS	NEM20260884	10/08/2025		10172025	245.12
Invoice: NEM20260884				NEM ESCROW PAY OUT 2024-25					
				245.12 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241519 TOTAL:					245.12
241520	10/17/2025	PRTD	99999	KRISTIN KRAMER	NEM20260885	10/08/2025		10172025	470.62
Invoice: NEM20260885				NEM ESCROW PAY OUT 2024-25					
				470.62 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241520 TOTAL:					470.62

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241521	10/17/2025	PRTD	99999	KRISTINE CHUNG	NEM20260886	10/08/2025		10172025	247.99
Invoice: NEM20260886				NEM ESCROW PAY OUT 2024-25					
				247.99 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241521 TOTAL:					247.99
241522	10/17/2025	PRTD	99999	KRISTINE M PUTTERMAN	NEM20260887	10/08/2025		10172025	136.72
Invoice: NEM20260887				NEM ESCROW PAY OUT 2024-25					
				136.72 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241522 TOTAL:					136.72
241523	10/17/2025	PRTD	99999	KURT G KRAMER	NEM20260888	10/08/2025		10172025	152.10
Invoice: NEM20260888				NEM ESCROW PAY OUT 2024-25					
				152.10 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241523 TOTAL:					152.10
241524	10/17/2025	PRTD	99999	KYLE KOSS	NEM20260889	10/08/2025		10172025	161.80
Invoice: NEM20260889				NEM ESCROW PAY OUT 2024-25					
				161.80 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241524 TOTAL:					161.80
241525	10/17/2025	PRTD	99999	LARRY NATHANSON	NEM20260890	10/08/2025		10172025	125.58
Invoice: NEM20260890				NEM ESCROW PAY OUT 2024-25					
				125.58 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241525 TOTAL:					125.58
241526	10/17/2025	PRTD	99999	LAURA FOSTER	NEM20260891	10/08/2025		10172025	189.93
Invoice: NEM20260891				NEM ESCROW PAY OUT 2024-25					
				189.93 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241526 TOTAL:					189.93
241527	10/17/2025	PRTD	99999	LAURIE GREENBERG	NEM20260892	10/08/2025		10172025	483.68
Invoice: NEM20260892				NEM ESCROW PAY OUT 2024-25					
				483.68 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241527 TOTAL:					483.68

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241528	10/17/2025	PRTD	99999	LAWRENCE BLUMENFELD	NEM20260893	10/08/2025		10172025	207.45
Invoice: NEM20260893				NEM ESCROW PAY OUT 2024-25					
				207.45 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241528 TOTAL:					207.45
241529	10/17/2025	PRTD	99999	LAWRENCE CHEW	NEM20260894	10/08/2025		10172025	327.49
Invoice: NEM20260894				NEM ESCROW PAY OUT 2024-25					
				327.49 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241529 TOTAL:					327.49
241530	10/17/2025	PRTD	99999	LAWRENCE EARL	NEM20260895	10/08/2025		10172025	358.76
Invoice: NEM20260895				NEM ESCROW PAY OUT 2024-25					
				358.76 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241530 TOTAL:					358.76
241531	10/17/2025	PRTD	99999	LAWRENCE LICHTER	NEM20260896	10/08/2025		10172025	286.36
Invoice: NEM20260896				NEM ESCROW PAY OUT 2024-25					
				286.36 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241531 TOTAL:					286.36
241532	10/17/2025	PRTD	99999	LAWRENCE MEEKS	NEM20260897	10/08/2025		10172025	438.94
Invoice: NEM20260897				NEM ESCROW PAY OUT 2024-25					
				438.94 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241532 TOTAL:					438.94
241533	10/17/2025	PRTD	99999	LEANNE NOALL	NEM20260898	10/08/2025		10172025	358.86
Invoice: NEM20260898				NEM ESCROW PAY OUT 2024-25					
				358.86 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241533 TOTAL:					358.86
241534	10/17/2025	PRTD	99999	LEO A MALLETTE	NEM20260899	10/08/2025		10172025	174.57
Invoice: NEM20260899				NEM ESCROW PAY OUT 2024-25					
				174.57 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241534 TOTAL:					174.57

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241535	10/17/2025	PRTD	99999	LESLIE ADELSON	NEM20260900	10/08/2025		10172025	235.20
Invoice: NEM20260900						NEM ESCROW PAY OUT 2024-25			
				235.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241535 TOTAL:			235.20
241536	10/17/2025	PRTD	99999	LESLIE ANNE WALL BLAKE	NEM20260901	10/08/2025		10172025	186.56
Invoice: NEM20260901						NEM ESCROW PAY OUT 2024-25			
				186.56 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241536 TOTAL:			186.56
241537	10/17/2025	PRTD	99999	LEWIS BENNETT	NEM20260902	10/08/2025		10172025	189.56
Invoice: NEM20260902						NEM ESCROW PAY OUT 2024-25			
				189.56 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241537 TOTAL:			189.56
241538	10/17/2025	PRTD	99999	LILO BENDIXEN	NEM20260903	10/08/2025		10172025	147.08
Invoice: NEM20260903						NEM ESCROW PAY OUT 2024-25			
				147.08 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241538 TOTAL:			147.08
241539	10/17/2025	PRTD	99999	LINDA DELANEY	NEM20260904	10/08/2025		10172025	181.97
Invoice: NEM20260904						NEM ESCROW PAY OUT 2024-25			
				181.97 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241539 TOTAL:			181.97
241540	10/17/2025	PRTD	99999	LINDA LOETSCHER	NEM20260905	10/08/2025		10172025	120.56
Invoice: NEM20260905						NEM ESCROW PAY OUT 2024-25			
				120.56 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241540 TOTAL:			120.56
241541	10/17/2025	PRTD	99999	LINDA VON RHINE	NEM20260906	10/08/2025		10172025	452.90
Invoice: NEM20260906						NEM ESCROW PAY OUT 2024-25			
				452.90 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241541 TOTAL:			452.90

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241542	10/17/2025	PRTD	99999	LINDA J YODER	NEM20260907	10/08/2025		10172025	188.03
Invoice: NEM20260907				NEM ESCROW PAY OUT 2024-25					
				188.03 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241542 TOTAL:		188.03
241543	10/17/2025	PRTD	99999	LINE LACASSE	NEM20260908	10/08/2025		10172025	116.18
Invoice: NEM20260908				NEM ESCROW PAY OUT 2024-25					
				116.18 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241543 TOTAL:		116.18
241544	10/17/2025	PRTD	99999	LISA PETIT	NEM20260909	10/08/2025		10172025	178.91
Invoice: NEM20260909				NEM ESCROW PAY OUT 2024-25					
				178.91 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241544 TOTAL:		178.91
241545	10/17/2025	PRTD	99999	LONI ARGOVITZ	NEM20260910	10/08/2025		10172025	712.95
Invoice: NEM20260910				NEM ESCROW PAY OUT 2024-25					
				712.95 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241545 TOTAL:		712.95
241546	10/17/2025	PRTD	99999	LORI GOLDSTEIN	NEM20260911	10/08/2025		10172025	136.79
Invoice: NEM20260911				NEM ESCROW PAY OUT 2024-25					
				136.79 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241546 TOTAL:		136.79
241547	10/17/2025	PRTD	99999	LOWELL SELVIN	NEM20260912	10/08/2025		10172025	140.13
Invoice: NEM20260912				NEM ESCROW PAY OUT 2024-25					
				140.13 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241547 TOTAL:		140.13
241548	10/17/2025	PRTD	99999	LUCIA LUCAS	NEM20260913	10/08/2025		10172025	198.07
Invoice: NEM20260913				NEM ESCROW PAY OUT 2024-25					
				198.07 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241548 TOTAL:		198.07

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241549	10/17/2025	PRTD	99999	LUIS GONZALEZ	NEM20260914	10/08/2025		10172025	523.63
Invoice: NEM20260914					NEM ESCROW PAY OUT 2024-25				
				523.63 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241549 TOTAL:		523.63
241550	10/17/2025	PRTD	99999	LUIS A MOYA	NEM20260915	10/08/2025		10172025	332.97
Invoice: NEM20260915					NEM ESCROW PAY OUT 2024-25				
				332.97 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241550 TOTAL:		332.97
241551	10/17/2025	PRTD	99999	LUKE SUL	NEM20260916	10/08/2025		10172025	188.06
Invoice: NEM20260916					NEM ESCROW PAY OUT 2024-25				
				188.06 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241551 TOTAL:		188.06
241552	10/17/2025	PRTD	99999	M WAYNE CARLSON	NEM20260917	10/08/2025		10172025	259.15
Invoice: NEM20260917					NEM ESCROW PAY OUT 2024-25				
				259.15 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241552 TOTAL:		259.15
241553	10/17/2025	PRTD	99999	MARC HERMAN	NEM20260918	10/08/2025		10172025	288.24
Invoice: NEM20260918					NEM ESCROW PAY OUT 2024-25				
				288.24 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241553 TOTAL:		288.24
241554	10/17/2025	PRTD	99999	MARCELLA HARRIS	NEM20260919	10/08/2025		10172025	152.15
Invoice: NEM20260919					NEM ESCROW PAY OUT 2024-25				
				152.15 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241554 TOTAL:		152.15
241555	10/17/2025	PRTD	99999	MARCELO R TOURNE	NEM20260920	10/08/2025		10172025	230.97
Invoice: NEM20260920					NEM ESCROW PAY OUT 2024-25				
				230.97 600	2653	NET ENERGY METERING LIABILITY			
						CHECK	241555 TOTAL:		230.97

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241556	10/17/2025	PRTD	99999	MARGARET HEAD	NEM20260921	10/08/2025		10172025	131.38
Invoice: NEM20260921				NEM ESCROW PAY OUT 2024-25					
				131.38 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241556 TOTAL:					131.38
241557	10/17/2025	PRTD	99999	MARGARET HENTSCHKE	NEM20260922	10/08/2025		10172025	721.45
Invoice: NEM20260922				NEM ESCROW PAY OUT 2024-25					
				721.45 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241557 TOTAL:					721.45
241558	10/17/2025	PRTD	99999	MARGARET J WELCH	NEM20260923	10/08/2025		10172025	133.58
Invoice: NEM20260923				NEM ESCROW PAY OUT 2024-25					
				133.58 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241558 TOTAL:					133.58
241559	10/17/2025	PRTD	99999	MARIAN LEE	NEM20260924	10/08/2025		10172025	133.99
Invoice: NEM20260924				NEM ESCROW PAY OUT 2024-25					
				133.99 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241559 TOTAL:					133.99
241560	10/17/2025	PRTD	99999	MARILYN STANLEY	NEM20260925	10/08/2025		10172025	258.77
Invoice: NEM20260925				NEM ESCROW PAY OUT 2024-25					
				258.77 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241560 TOTAL:					258.77
241561	10/17/2025	PRTD	99999	MARK DAVIS	NEM20260926	10/08/2025		10172025	368.23
Invoice: NEM20260926				NEM ESCROW PAY OUT 2024-25					
				368.23 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241561 TOTAL:					368.23
241562	10/17/2025	PRTD	99999	MARK HAHN	NEM20260927	10/08/2025		10172025	219.20
Invoice: NEM20260927				NEM ESCROW PAY OUT 2024-25					
				219.20 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241562 TOTAL:					219.20

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241563	10/17/2025	PRTD	99999	MARK LOWENTHAL	NEM20260928	10/08/2025		10172025	165.24
Invoice: NEM20260928				NEM ESCROW PAY OUT 2024-25					
				165.24 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241563 TOTAL:					165.24
241564	10/17/2025	PRTD	99999	MARK CHRISTIANSEN	BR20250024	10/06/2025		10172025	1,000.00
Invoice: BR20250024				RMEA RESILIENCY BATTERY PROGRAM					
				1,000.00 600 7426 SUSTAINABILITY REBATES & PRGRM					
				CHECK 241564 TOTAL:					1,000.00
241565	10/17/2025	PRTD	99999	MARK E WISE	NEM20260929	10/08/2025		10172025	112.50
Invoice: NEM20260929				NEM ESCROW PAY OUT 2024-25					
				112.50 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241565 TOTAL:					112.50
241566	10/17/2025	PRTD	99999	MARLENE C JENKINS	NEM20260930	10/08/2025		10172025	170.51
Invoice: NEM20260930				NEM ESCROW PAY OUT 2024-25					
				170.51 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241566 TOTAL:					170.51
241567	10/17/2025	PRTD	99999	MARSHA J KARIOTH	NEM20260931	10/08/2025		10172025	129.49
Invoice: NEM20260931				NEM ESCROW PAY OUT 2024-25					
				129.49 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241567 TOTAL:					129.49
241568	10/17/2025	PRTD	99999	MARTHA BOSSLEY	NEM20260932	10/08/2025		10172025	302.56
Invoice: NEM20260932				NEM ESCROW PAY OUT 2024-25					
				302.56 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241568 TOTAL:					302.56
241569	10/17/2025	PRTD	99999	MARTIN KLEMM	NEM20260933	10/08/2025		10172025	124.31
Invoice: NEM20260933				NEM ESCROW PAY OUT 2024-25					
				124.31 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241569 TOTAL:					124.31

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241570	10/17/2025	PRTD	99999	MARTY SELTZER	NEM20260934	10/08/2025		10172025	135.07
Invoice: NEM20260934					NEM ESCROW PAY OUT 2024-25				
				135.07 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241570 TOTAL:		135.07
241571	10/17/2025	PRTD	99999	MARY SINGER	NEM20260935	10/08/2025		10172025	141.68
Invoice: NEM20260935					NEM ESCROW PAY OUT 2024-25				
				141.68 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241571 TOTAL:		141.68
241572	10/17/2025	PRTD	99999	MARY ANN MAYER	NEM20260936	10/08/2025		10172025	615.53
Invoice: NEM20260936					NEM ESCROW PAY OUT 2024-25				
				615.53 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241572 TOTAL:		615.53
241573	10/17/2025	PRTD	99999	MATIA REILLY	NEM20260937	10/08/2025		10172025	260.08
Invoice: NEM20260937					NEM ESCROW PAY OUT 2024-25				
				260.08 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241573 TOTAL:		260.08
241574	10/17/2025	PRTD	99999	MATT PETERSON	NEM20260938	10/08/2025		10172025	109.61
Invoice: NEM20260938					NEM ESCROW PAY OUT 2024-25				
				109.61 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241574 TOTAL:		109.61
241575	10/17/2025	PRTD	99999	MATTHEW HANSEN	NEM20260939	10/08/2025		10172025	144.49
Invoice: NEM20260939					NEM ESCROW PAY OUT 2024-25				
				144.49 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241575 TOTAL:		144.49
241576	10/17/2025	PRTD	99999	MAURICE ABIKZER	NEM20260940	10/08/2025		10172025	429.88
Invoice: NEM20260940					NEM ESCROW PAY OUT 2024-25				
				429.88 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241576 TOTAL:		429.88

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241577	10/17/2025	PRTD	99999	MELINDA DRICKEY	NEM20260941	10/08/2025		10172025	322.62
Invoice: NEM20260941				NEM ESCROW PAY OUT 2024-25					
				322.62 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241577 TOTAL:					322.62
241578	10/17/2025	PRTD	99999	MERLIN AALBORG	NEM20260942	10/08/2025		10172025	224.65
Invoice: NEM20260942				NEM ESCROW PAY OUT 2024-25					
				224.65 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241578 TOTAL:					224.65
241579	10/17/2025	PRTD	99999	MICHAEL APPELHANS	NEM20260943	10/08/2025		10172025	484.37
Invoice: NEM20260943				NEM ESCROW PAY OUT 2024-25					
				484.37 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241579 TOTAL:					484.37
241580	10/17/2025	PRTD	99999	MICHAEL BARNBLATT	NEM20260944	10/08/2025		10172025	506.82
Invoice: NEM20260944				NEM ESCROW PAY OUT 2024-25					
				506.82 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241580 TOTAL:					506.82
241581	10/17/2025	PRTD	99999	MICHAEL BLODGETT	NEM20260945	10/08/2025		10172025	238.87
Invoice: NEM20260945				NEM ESCROW PAY OUT 2024-25					
				238.87 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241581 TOTAL:					238.87
241582	10/17/2025	PRTD	99999	MICHAEL FRANCHINO	NEM20260946	10/08/2025		10172025	107.04
Invoice: NEM20260946				NEM ESCROW PAY OUT 2024-25					
				107.04 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241582 TOTAL:					107.04
241583	10/17/2025	PRTD	99999	MICHAEL JOHNSON	NEM20260947	10/08/2025		10172025	248.64
Invoice: NEM20260947				NEM ESCROW PAY OUT 2024-25					
				248.64 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241583 TOTAL:					248.64

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241584	10/17/2025	PRTD	99999	MICHAEL MALUCCIO	NEM20260948	10/08/2025		10172025	127.41
Invoice: NEM20260948						NEM ESCROW PAY OUT 2024-25			
				127.41 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241584 TOTAL:			127.41
241585	10/17/2025	PRTD	99999	MICHAEL MCDOWELL	NEM20260949	10/08/2025		10172025	158.28
Invoice: NEM20260949						NEM ESCROW PAY OUT 2024-25			
				158.28 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241585 TOTAL:			158.28
241586	10/17/2025	PRTD	99999	MICHAEL MORRIS	NEM20260950	10/08/2025		10172025	311.45
Invoice: NEM20260950						NEM ESCROW PAY OUT 2024-25			
				311.45 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241586 TOTAL:			311.45
241587	10/17/2025	PRTD	99999	MICHAEL NIMKOFF	NEM20260951	10/08/2025		10172025	428.79
Invoice: NEM20260951						NEM ESCROW PAY OUT 2024-25			
				428.79 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241587 TOTAL:			428.79
241588	10/17/2025	PRTD	99999	MICHAEL SHANNON	NEM20260952	10/08/2025		10172025	207.19
Invoice: NEM20260952						NEM ESCROW PAY OUT 2024-25			
				207.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241588 TOTAL:			207.19
241589	10/17/2025	PRTD	99999	MICHAEL SMITH	NEM20260953	10/08/2025		10172025	526.24
Invoice: NEM20260953						NEM ESCROW PAY OUT 2024-25			
				526.24 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241589 TOTAL:			526.24
241590	10/17/2025	PRTD	99999	MICHAEL YANG	NEM20260954	10/08/2025		10172025	179.26
Invoice: NEM20260954						NEM ESCROW PAY OUT 2024-25			
				179.26 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241590 TOTAL:			179.26

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241591	10/17/2025	PRTD	99999	MICHAEL E SHIMER	NEM20260955	10/08/2025		10172025	103.38
Invoice: NEM20260955						NEM ESCROW PAY OUT 2024-25			
				103.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241591 TOTAL:		103.38
241592	10/17/2025	PRTD	99999	MICHAEL J PASSARO	NEM20260956	10/08/2025		10172025	218.04
Invoice: NEM20260956						NEM ESCROW PAY OUT 2024-25			
				218.04 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241592 TOTAL:		218.04
241593	10/17/2025	PRTD	99999	MICHAEL L JENSEN	NEM20260957	10/08/2025		10172025	223.67
Invoice: NEM20260957						NEM ESCROW PAY OUT 2024-25			
				223.67 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241593 TOTAL:		223.67
241594	10/17/2025	PRTD	99999	MICHAEL T SMITH	NEM20260958	10/08/2025		10172025	134.77
Invoice: NEM20260958						NEM ESCROW PAY OUT 2024-25			
				134.77 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241594 TOTAL:		134.77
241595	10/17/2025	PRTD	99999	MICHELLA J MANNING	NEM20260959	10/08/2025		10172025	118.04
Invoice: NEM20260959						NEM ESCROW PAY OUT 2024-25			
				118.04 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241595 TOTAL:		118.04
241596	10/17/2025	PRTD	99999	MILAN RADOJEVICH	NEM20260960	10/08/2025		10172025	134.45
Invoice: NEM20260960						NEM ESCROW PAY OUT 2024-25			
				134.45 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241596 TOTAL:		134.45
241597	10/17/2025	PRTD	99999	MOHAMMAD MOJARAD	NEM20260961	10/08/2025		10172025	158.72
Invoice: NEM20260961						NEM ESCROW PAY OUT 2024-25			
				158.72 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241597 TOTAL:		158.72

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241598	10/17/2025	PRTD	99999	MONIQUE ZINSER	NEM20260962	10/08/2025		10172025	236.38
Invoice: NEM20260962						NEM ESCROW PAY OUT 2024-25			
				236.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241598 TOTAL:		236.38
241599	10/17/2025	PRTD	99999	MONTE MATTSON	NEM20260963	10/08/2025		10172025	102.81
Invoice: NEM20260963						NEM ESCROW PAY OUT 2024-25			
				102.81 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241599 TOTAL:		102.81
241600	10/17/2025	PRTD	99999	MYRNA GRIGORIAN	NEM20260964	10/08/2025		10172025	247.01
Invoice: NEM20260964						NEM ESCROW PAY OUT 2024-25			
				247.01 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241600 TOTAL:		247.01
241601	10/17/2025	PRTD	99999	NAN SHIPP	NEM20260965	10/08/2025		10172025	110.06
Invoice: NEM20260965						NEM ESCROW PAY OUT 2024-25			
				110.06 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241601 TOTAL:		110.06
241602	10/17/2025	PRTD	99999	NANCY CRUZ	NEM20260966	10/08/2025		10172025	194.06
Invoice: NEM20260966						NEM ESCROW PAY OUT 2024-25			
				194.06 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241602 TOTAL:		194.06
241603	10/17/2025	PRTD	99999	NANCY GORDON	NEM20260967	10/08/2025		10172025	240.38
Invoice: NEM20260967						NEM ESCROW PAY OUT 2024-25			
				240.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241603 TOTAL:		240.38
241604	10/17/2025	PRTD	99999	NANCY HAMMOND	NEM20260968	10/08/2025		10172025	168.49
Invoice: NEM20260968						NEM ESCROW PAY OUT 2024-25			
				168.49 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241604 TOTAL:		168.49

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241605	10/17/2025	PRTD	99999	NANCY LEE	NEM20260969	10/08/2025		10172025	135.02
Invoice: NEM20260969				NEM ESCROW PAY OUT 2024-25					
				135.02 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241605 TOTAL:					135.02
241606	10/17/2025	PRTD	99999	NANCY SCHECHTMAN	NEM20260970	10/08/2025		10172025	193.77
Invoice: NEM20260970				NEM ESCROW PAY OUT 2024-25					
				193.77 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241606 TOTAL:					193.77
241607	10/17/2025	PRTD	99999	NANCY TATE	NEM20260971	10/08/2025		10172025	256.54
Invoice: NEM20260971				NEM ESCROW PAY OUT 2024-25					
				256.54 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241607 TOTAL:					256.54
241608	10/17/2025	PRTD	99999	NAOMI KOOSED	NEM20260972	10/08/2025		10172025	309.63
Invoice: NEM20260972				NEM ESCROW PAY OUT 2024-25					
				309.63 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241608 TOTAL:					309.63
241609	10/17/2025	PRTD	99999	NEIL ENDER	NEM20260973	10/08/2025		10172025	580.69
Invoice: NEM20260973				NEM ESCROW PAY OUT 2024-25					
				580.69 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241609 TOTAL:					580.69
241610	10/17/2025	PRTD	99999	NEIL MANNING	NEM20260974	10/08/2025		10172025	224.92
Invoice: NEM20260974				NEM ESCROW PAY OUT 2024-25					
				224.92 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241610 TOTAL:					224.92
241611	10/17/2025	PRTD	99999	NEIL NAROFF	NEM20260975	10/08/2025		10172025	136.38
Invoice: NEM20260975				NEM ESCROW PAY OUT 2024-25					
				136.38 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241611 TOTAL:					136.38

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241612	10/17/2025	PRTD	99999	NEIL S WILENSKY	NEM20260976	10/08/2025		10172025	134.39
Invoice: NEM20260976				NEM ESCROW PAY OUT 2024-25					
				134.39 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241612 TOTAL:		134.39
241613	10/17/2025	PRTD	99999	NICHOLAS COTSIDAS	NEM20260977	10/08/2025		10172025	106.57
Invoice: NEM20260977				NEM ESCROW PAY OUT 2024-25					
				106.57 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241613 TOTAL:		106.57
241614	10/17/2025	PRTD	99999	NICHOLAS V CORONA	NEM20260978	10/08/2025		10172025	176.21
Invoice: NEM20260978				NEM ESCROW PAY OUT 2024-25					
				176.21 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241614 TOTAL:		176.21
241615	10/17/2025	PRTD	99999	NICOLAS SUROVY	NEM20260979	10/08/2025		10172025	201.96
Invoice: NEM20260979				NEM ESCROW PAY OUT 2024-25					
				201.96 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241615 TOTAL:		201.96
241616	10/17/2025	PRTD	99999	NIKKI STURM	NEM20260980	10/08/2025		10172025	318.11
Invoice: NEM20260980				NEM ESCROW PAY OUT 2024-25					
				318.11 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241616 TOTAL:		318.11
241617	10/17/2025	PRTD	99999	NINA LEES	NEM20260981	10/08/2025		10172025	274.51
Invoice: NEM20260981				NEM ESCROW PAY OUT 2024-25					
				274.51 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241617 TOTAL:		274.51
241618	10/17/2025	PRTD	99999	NORM C CHRISTENSEN	NEM20260982	10/08/2025		10172025	220.05
Invoice: NEM20260982				NEM ESCROW PAY OUT 2024-25					
				220.05 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241618 TOTAL:		220.05

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241619	10/17/2025	PRTD	99999	NORMAN BROOKS	NEM20260983	10/08/2025		10172025	149.28
Invoice: NEM20260983						NEM ESCROW PAY OUT 2024-25			
				149.28 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241619 TOTAL:		149.28
241620	10/17/2025	PRTD	99999	NORMAN D LEE	NEM20260984	10/08/2025		10172025	266.29
Invoice: NEM20260984						NEM ESCROW PAY OUT 2024-25			
				266.29 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241620 TOTAL:		266.29
241621	10/17/2025	PRTD	99999	NORMAN M GERLER	NEM20260985	10/08/2025		10172025	267.39
Invoice: NEM20260985						NEM ESCROW PAY OUT 2024-25			
				267.39 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241621 TOTAL:		267.39
241622	10/17/2025	PRTD	99999	OROMA NWANODI	NEM20260986	10/08/2025		10172025	115.53
Invoice: NEM20260986						NEM ESCROW PAY OUT 2024-25			
				115.53 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241622 TOTAL:		115.53
241623	10/17/2025	PRTD	99999	OVERMUCH INVESTMENT GROUP	NEM20260987	10/08/2025		10172025	333.82
Invoice: NEM20260987						NEM ESCROW PAY OUT 2024-25			
				333.82 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241623 TOTAL:		333.82
241624	10/17/2025	PRTD	99999	PAM WEEKLEY	NEM20260988	10/08/2025		10172025	252.07
Invoice: NEM20260988						NEM ESCROW PAY OUT 2024-25			
				252.07 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241624 TOTAL:		252.07
241625	10/17/2025	PRTD	99999	PAMELA FIELDS	NEM20260989	10/08/2025		10172025	240.16
Invoice: NEM20260989						NEM ESCROW PAY OUT 2024-25			
				240.16 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241625 TOTAL:		240.16

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241626	10/17/2025	PRTD	99999	PAMELA KOSSACK	NEM20260990	10/08/2025		10172025	378.79
Invoice: NEM20260990						NEM ESCROW PAY OUT 2024-25			
				378.79 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241626 TOTAL:		378.79
241627	10/17/2025	PRTD	99999	PATRICIA FLAVIO	NEM20260991	10/08/2025		10172025	238.93
Invoice: NEM20260991						NEM ESCROW PAY OUT 2024-25			
				238.93 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241627 TOTAL:		238.93
241628	10/17/2025	PRTD	99999	PATRICIA KIPPELS	NEM20260992	10/08/2025		10172025	248.46
Invoice: NEM20260992						NEM ESCROW PAY OUT 2024-25			
				248.46 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241628 TOTAL:		248.46
241629	10/17/2025	PRTD	99999	PATRICIA MURPHY	NEM20260993	10/08/2025		10172025	149.58
Invoice: NEM20260993						NEM ESCROW PAY OUT 2024-25			
				149.58 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241629 TOTAL:		149.58
241630	10/17/2025	PRTD	99999	PATRICIA NEWMAN	NEM20260994	10/08/2025		10172025	258.45
Invoice: NEM20260994						NEM ESCROW PAY OUT 2024-25			
				258.45 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241630 TOTAL:		258.45
241631	10/17/2025	PRTD	99999	PATRICIA SCARAMELLINO	NEM20260995	10/08/2025		10172025	104.16
Invoice: NEM20260995						NEM ESCROW PAY OUT 2024-25			
				104.16 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241631 TOTAL:		104.16
241632	10/17/2025	PRTD	99999	PATRICIA YOUNG	NEM20260996	10/08/2025		10172025	130.20
Invoice: NEM20260996						NEM ESCROW PAY OUT 2024-25			
				130.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241632 TOTAL:		130.20

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241633	10/17/2025	PRTD	99999	PATRICIA A MALONEY	NEM20260997	10/08/2025		10172025	142.43
Invoice: NEM20260997					NEM ESCROW PAY OUT 2024-25				
				142.43 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241633 TOTAL:		142.43
241634	10/17/2025	PRTD	99999	PATRICK CULHANE	NEM20260998	10/08/2025		10172025	102.45
Invoice: NEM20260998					NEM ESCROW PAY OUT 2024-25				
				102.45 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241634 TOTAL:		102.45
241635	10/17/2025	PRTD	99999	PATRICK LOWRY	NEM20260999	10/08/2025		10172025	336.35
Invoice: NEM20260999					NEM ESCROW PAY OUT 2024-25				
				336.35 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241635 TOTAL:		336.35
241636	10/17/2025	PRTD	99999	PATTY BLACK	NEM20261000	10/08/2025		10172025	411.38
Invoice: NEM20261000					NEM ESCROW PAY OUT 2024-25				
				411.38 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241636 TOTAL:		411.38
241637	10/17/2025	PRTD	99999	PAUL HORWITZ	NEM20261001	10/08/2025		10172025	357.36
Invoice: NEM20261001					NEM ESCROW PAY OUT 2024-25				
				357.36 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241637 TOTAL:		357.36
241638	10/17/2025	PRTD	99999	PAUL SEPULVEDA	NEM20261002	10/08/2025		10172025	211.48
Invoice: NEM20261002					NEM ESCROW PAY OUT 2024-25				
				211.48 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241638 TOTAL:		211.48
241639	10/17/2025	PRTD	99999	PAUL THIEL	NEM20261003	10/08/2025		10172025	370.51
Invoice: NEM20261003					NEM ESCROW PAY OUT 2024-25				
				370.51 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241639 TOTAL:		370.51

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241640	10/17/2025	PRTD	99999	PAUL W MC DONALD	NEM20261004	10/08/2025		10172025	130.46
Invoice: NEM20261004						NEM ESCROW PAY OUT 2024-25			
					130.46 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241640 TOTAL:		130.46
241641	10/17/2025	PRTD	99999	PAULA CARRICK	NEM20261005	10/08/2025		10172025	301.31
Invoice: NEM20261005						NEM ESCROW PAY OUT 2024-25			
					301.31 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241641 TOTAL:		301.31
241642	10/17/2025	PRTD	99999	PAULA PETERSON	NEM20261006	10/08/2025		10172025	120.77
Invoice: NEM20261006						NEM ESCROW PAY OUT 2024-25			
					120.77 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241642 TOTAL:		120.77
241643	10/17/2025	PRTD	99999	PENNY DREYFUS	NEM20261007	10/08/2025		10172025	446.24
Invoice: NEM20261007						NEM ESCROW PAY OUT 2024-25			
					446.24 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241643 TOTAL:		446.24
241644	10/17/2025	PRTD	99999	PERRY G DATWYLER	NEM20261008	10/08/2025		10172025	144.56
Invoice: NEM20261008						NEM ESCROW PAY OUT 2024-25			
					144.56 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241644 TOTAL:		144.56
241645	10/17/2025	PRTD	99999	PETER BAKER	NEM20261009	10/08/2025		10172025	185.61
Invoice: NEM20261009						NEM ESCROW PAY OUT 2024-25			
					185.61 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241645 TOTAL:		185.61
241646	10/17/2025	PRTD	99999	PETER SCHEER	NEM20261010	10/08/2025		10172025	164.49
Invoice: NEM20261010						NEM ESCROW PAY OUT 2024-25			
					164.49 600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241646 TOTAL:		164.49

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241647	10/17/2025	PRTD	99999	PETER C BEHNKE	NEM20261011	10/08/2025		10172025	184.31
Invoice: NEM20261011				NEM ESCROW PAY OUT 2024-25					
				184.31 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241647 TOTAL:		184.31
241648	10/17/2025	PRTD	99999	PETER F. DALLAS	NEM20261012	10/08/2025		10172025	186.43
Invoice: NEM20261012				NEM ESCROW PAY OUT 2024-25					
				186.43 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241648 TOTAL:		186.43
241649	10/17/2025	PRTD	99999	PHILIP PAASCH	NEM20261013	10/08/2025		10172025	180.94
Invoice: NEM20261013				NEM ESCROW PAY OUT 2024-25					
				180.94 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241649 TOTAL:		180.94
241650	10/17/2025	PRTD	99999	PHILIP WILSON	NEM20261014	10/08/2025		10172025	259.15
Invoice: NEM20261014				NEM ESCROW PAY OUT 2024-25					
				259.15 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241650 TOTAL:		259.15
241651	10/17/2025	PRTD	99999	PHILIP ZETZMAN	NEM20261015	10/08/2025		10172025	102.40
Invoice: NEM20261015				NEM ESCROW PAY OUT 2024-25					
				102.40 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241651 TOTAL:		102.40
241652	10/17/2025	PRTD	99999	PHYLLIS ABBUHL	NEM20261016	10/08/2025		10172025	342.90
Invoice: NEM20261016				NEM ESCROW PAY OUT 2024-25					
				342.90 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241652 TOTAL:		342.90
241653	10/17/2025	PRTD	99999	PIERRE BILLARD	NEM20261017	10/08/2025		10172025	295.63
Invoice: NEM20261017				NEM ESCROW PAY OUT 2024-25					
				295.63 600 2653 NET ENERGY METERING LIABILITY					
						CHECK	241653 TOTAL:		295.63

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241654	10/17/2025	PRTD	99999	POLLY A PRESTON	NEM20261018	10/08/2025		10172025	107.93
Invoice: NEM20261018						NEM ESCROW PAY OUT 2024-25			
				107.93 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241654 TOTAL:		107.93
241655	10/17/2025	PRTD	99999	QUENTIN ENG	NEM20261019	10/08/2025		10172025	107.64
Invoice: NEM20261019						NEM ESCROW PAY OUT 2024-25			
				107.64 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241655 TOTAL:		107.64
241656	10/17/2025	PRTD	99999	R. PETERSEN	NEM20261020	10/08/2025		10172025	123.43
Invoice: NEM20261020						NEM ESCROW PAY OUT 2024-25			
				123.43 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241656 TOTAL:		123.43
241657	10/17/2025	PRTD	99999	RAFIK MORGAN	NEM20261021	10/08/2025		10172025	188.79
Invoice: NEM20261021						NEM ESCROW PAY OUT 2024-25			
				188.79 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241657 TOTAL:		188.79
241658	10/17/2025	PRTD	99999	RAIMUND BRENDEL	NEM20261022	10/08/2025		10172025	152.82
Invoice: NEM20261022						NEM ESCROW PAY OUT 2024-25			
				152.82 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241658 TOTAL:		152.82
241659	10/17/2025	PRTD	99999	RANCHO MIRAGE, CITY OF	NEM20261023	10/08/2025		10172025	1,509.81
Invoice: NEM20261023						NEM ESCROW PAY OUT 2024-25			
				1,509.81 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241659 TOTAL:		1,509.81
241660	10/17/2025	PRTD	99999	REESA MANNING	NEM20261024	10/08/2025		10172025	318.83
Invoice: NEM20261024						NEM ESCROW PAY OUT 2024-25			
				318.83 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241660 TOTAL:		318.83

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241661	10/17/2025	PRTD	99999	REGINA BRAGADO	NEM20261025	10/08/2025		10172025	235.00
Invoice: NEM20261025				NEM ESCROW PAY OUT 2024-25					
				235.00 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241661 TOTAL:					235.00
241662	10/17/2025	PRTD	99999	RENATE SENTERS	NEM20261026	10/08/2025		10172025	260.85
Invoice: NEM20261026				NEM ESCROW PAY OUT 2024-25					
				260.85 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241662 TOTAL:					260.85
241663	10/17/2025	PRTD	99999	RIC A HOVDA	NEM20261027	10/08/2025		10172025	132.48
Invoice: NEM20261027				NEM ESCROW PAY OUT 2024-25					
				132.48 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241663 TOTAL:					132.48
241664	10/17/2025	PRTD	99999	RICHARD BALDWIN	NEM20261028	10/08/2025		10172025	186.23
Invoice: NEM20261028				NEM ESCROW PAY OUT 2024-25					
				186.23 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241664 TOTAL:					186.23
241665	10/17/2025	PRTD	99999	RICHARD BAYER	NEM20261029	10/08/2025		10172025	415.52
Invoice: NEM20261029				NEM ESCROW PAY OUT 2024-25					
				415.52 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241665 TOTAL:					415.52
241666	10/17/2025	PRTD	99999	RICHARD BIRD	NEM20261030	10/08/2025		10172025	199.00
Invoice: NEM20261030				NEM ESCROW PAY OUT 2024-25					
				199.00 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241666 TOTAL:					199.00
241667	10/17/2025	PRTD	99999	RICHARD SERVICE	NEM20261031	10/08/2025		10172025	240.52
Invoice: NEM20261031				NEM ESCROW PAY OUT 2024-25					
				240.52 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241667 TOTAL:					240.52

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241668	10/17/2025	PRTD	99999	RICHARD A SHERWOOD	NEM20261032	10/08/2025		10172025	101.00
Invoice: NEM20261032						NEM ESCROW PAY OUT 2024-25			
				101.00 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241668 TOTAL:			101.00
241669	10/17/2025	PRTD	99999	RICHARD F BUTZ	NEM20261033	10/08/2025		10172025	221.42
Invoice: NEM20261033						NEM ESCROW PAY OUT 2024-25			
				221.42 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241669 TOTAL:			221.42
241670	10/17/2025	PRTD	99999	RICHARD J HECKMANN	NEM20261034	10/08/2025		10172025	129.47
Invoice: NEM20261034						NEM ESCROW PAY OUT 2024-25			
				129.47 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241670 TOTAL:			129.47
241671	10/17/2025	PRTD	99999	RICHARD M SEAY	NEM20261035	10/08/2025		10172025	216.65
Invoice: NEM20261035						NEM ESCROW PAY OUT 2024-25			
				216.65 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241671 TOTAL:			216.65
241672	10/17/2025	PRTD	99999	RICK D SELLERS	NEM20261036	10/08/2025		10172025	214.27
Invoice: NEM20261036						NEM ESCROW PAY OUT 2024-25			
				214.27 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241672 TOTAL:			214.27
241673	10/17/2025	PRTD	99999	RIGOBERTO GARCIA	NEM20261037	10/08/2025		10172025	172.02
Invoice: NEM20261037						NEM ESCROW PAY OUT 2024-25			
				172.02 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241673 TOTAL:			172.02
241674	10/17/2025	PRTD	99999	ROBERT CAPLAIN	NEM20261038	10/08/2025		10172025	194.57
Invoice: NEM20261038						NEM ESCROW PAY OUT 2024-25			
				194.57 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241674 TOTAL:			194.57

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241675	10/17/2025	PRTD	99999	ROBERT FARIAS	NEM20261039	10/08/2025		10172025	348.96
Invoice: NEM20261039						NEM ESCROW PAY OUT 2024-25			
				348.96 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241675 TOTAL:		348.96
241676	10/17/2025	PRTD	99999	ROBERT GARMISA	NEM20261040	10/08/2025		10172025	198.38
Invoice: NEM20261040						NEM ESCROW PAY OUT 2024-25			
				198.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241676 TOTAL:		198.38
241677	10/17/2025	PRTD	99999	ROBERT PASCUA	NEM20261041	10/08/2025		10172025	114.51
Invoice: NEM20261041						NEM ESCROW PAY OUT 2024-25			
				114.51 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241677 TOTAL:		114.51
241678	10/17/2025	PRTD	99999	ROBERT PERRI	NEM20261042	10/08/2025		10172025	270.70
Invoice: NEM20261042						NEM ESCROW PAY OUT 2024-25			
				270.70 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241678 TOTAL:		270.70
241679	10/17/2025	PRTD	99999	ROBERT RECTOR	NEM20261043	10/08/2025		10172025	115.19
Invoice: NEM20261043						NEM ESCROW PAY OUT 2024-25			
				115.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241679 TOTAL:		115.19
241680	10/17/2025	PRTD	99999	ROBERT ROSEN	NEM20261044	10/08/2025		10172025	150.84
Invoice: NEM20261044						NEM ESCROW PAY OUT 2024-25			
				150.84 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241680 TOTAL:		150.84
241681	10/17/2025	PRTD	99999	ROBERT SCHNEIDER	NEM20261045	10/08/2025		10172025	195.29
Invoice: NEM20261045						NEM ESCROW PAY OUT 2024-25			
				195.29 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241681 TOTAL:		195.29

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241682	10/17/2025	PRTD	99999	ROBERT SINCLAIR	NEM20261046	10/08/2025		10172025	117.23
Invoice: NEM20261046					NEM ESCROW PAY OUT 2024-25				
				117.23 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241682 TOTAL:		117.23
241683	10/17/2025	PRTD	99999	ROBERT A SHERWOOD	NEM20261047	10/08/2025		10172025	141.35
Invoice: NEM20261047					NEM ESCROW PAY OUT 2024-25				
				141.35 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241683 TOTAL:		141.35
241684	10/17/2025	PRTD	99999	ROBERT B. GOLDBERG	NEM20261048	10/08/2025		10172025	134.87
Invoice: NEM20261048					NEM ESCROW PAY OUT 2024-25				
				134.87 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241684 TOTAL:		134.87
241685	10/17/2025	PRTD	99999	ROBERT J CARRIER	NEM20261049	10/08/2025		10172025	277.57
Invoice: NEM20261049					NEM ESCROW PAY OUT 2024-25				
				277.57 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241685 TOTAL:		277.57
241686	10/17/2025	PRTD	99999	ROBERT J GANTT	NEM20261050	10/08/2025		10172025	129.87
Invoice: NEM20261050					NEM ESCROW PAY OUT 2024-25				
				129.87 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241686 TOTAL:		129.87
241687	10/17/2025	PRTD	99999	ROBIN LEVY	NEM20261051	10/08/2025		10172025	172.26
Invoice: NEM20261051					NEM ESCROW PAY OUT 2024-25				
				172.26 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241687 TOTAL:		172.26
241688	10/17/2025	PRTD	99999	ROBIN PAULE	NEM20261052	10/08/2025		10172025	113.54
Invoice: NEM20261052					NEM ESCROW PAY OUT 2024-25				
				113.54 600 2653	NET ENERGY METERING LIABILITY				
						CHECK	241688 TOTAL:		113.54

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241689	10/17/2025	PRTD	99999	RODEBERG FAMILY TRUST	NEM20261053	10/08/2025		10172025	156.38
	Invoice: NEM20261053					NEM ESCROW PAY OUT 2024-25			
				156.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241689 TOTAL:			156.38
241690	10/17/2025	PRTD	99999	ROGER C KERCHMAN	NEM20261054	10/08/2025		10172025	287.45
	Invoice: NEM20261054					NEM ESCROW PAY OUT 2024-25			
				287.45 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241690 TOTAL:			287.45
241691	10/17/2025	PRTD	99999	ROLLIN A RANSOM	NEM20261055	10/08/2025		10172025	143.40
	Invoice: NEM20261055					NEM ESCROW PAY OUT 2024-25			
				143.40 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241691 TOTAL:			143.40
241692	10/17/2025	PRTD	99999	RONALD NOVAK	NEM20261056	10/08/2025		10172025	259.73
	Invoice: NEM20261056					NEM ESCROW PAY OUT 2024-25			
				259.73 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241692 TOTAL:			259.73
241693	10/17/2025	PRTD	99999	RONALD WHITAKER	NEM20261057	10/08/2025		10172025	128.67
	Invoice: NEM20261057					NEM ESCROW PAY OUT 2024-25			
				128.67 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241693 TOTAL:			128.67
241694	10/17/2025	PRTD	99999	RONALD YOUNG	NEM20261058	10/08/2025		10172025	233.59
	Invoice: NEM20261058					NEM ESCROW PAY OUT 2024-25			
				233.59 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241694 TOTAL:			233.59
241695	10/17/2025	PRTD	99999	RONALD A KOLAR	NEM20261059	10/08/2025		10172025	620.11
	Invoice: NEM20261059					NEM ESCROW PAY OUT 2024-25			
				620.11 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241695 TOTAL:			620.11

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241696	10/17/2025	PRTD	99999	RONALD C MARINELLA	NEM20261060	10/08/2025		10172025	226.97
Invoice: NEM20261060						NEM ESCROW PAY OUT 2024-25			
				226.97 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241696 TOTAL:		226.97
241697	10/17/2025	PRTD	99999	RONALD E SULPIZIO	NEM20261061	10/08/2025		10172025	140.85
Invoice: NEM20261061						NEM ESCROW PAY OUT 2024-25			
				140.85 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241697 TOTAL:		140.85
241698	10/17/2025	PRTD	99999	RONALD M EVERETT	NEM20261062	10/08/2025		10172025	126.84
Invoice: NEM20261062						NEM ESCROW PAY OUT 2024-25			
				126.84 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241698 TOTAL:		126.84
241699	10/17/2025	PRTD	99999	RUSSELL JARVIS	NEM20261063	10/08/2025		10172025	167.20
Invoice: NEM20261063						NEM ESCROW PAY OUT 2024-25			
				167.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241699 TOTAL:		167.20
241700	10/17/2025	PRTD	99999	RUSSELL S MOCH	NEM20261064	10/08/2025		10172025	225.31
Invoice: NEM20261064						NEM ESCROW PAY OUT 2024-25			
				225.31 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241700 TOTAL:		225.31
241701	10/17/2025	PRTD	99999	SALLY HARB	NEM20261065	10/08/2025		10172025	367.37
Invoice: NEM20261065						NEM ESCROW PAY OUT 2024-25			
				367.37 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241701 TOTAL:		367.37
241702	10/17/2025	PRTD	99999	SALLY HARRISON	NEM20261066	10/08/2025		10172025	105.20
Invoice: NEM20261066						NEM ESCROW PAY OUT 2024-25			
				105.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241702 TOTAL:		105.20

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241703	10/17/2025	PRTD	99999	SALMAN ZAHID	NEM20261067	10/08/2025		10172025	206.86
Invoice: NEM20261067				NEM ESCROW PAY OUT 2024-25					
				206.86 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241703 TOTAL:					206.86
241704	10/17/2025	PRTD	99999	SAMAN S TALAB	NEM20261068	10/08/2025		10172025	194.48
Invoice: NEM20261068				NEM ESCROW PAY OUT 2024-25					
				194.48 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241704 TOTAL:					194.48
241705	10/17/2025	PRTD	99999	SCOTT DEAN	NEM20261069	10/08/2025		10172025	149.09
Invoice: NEM20261069				NEM ESCROW PAY OUT 2024-25					
				149.09 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241705 TOTAL:					149.09
241706	10/17/2025	PRTD	99999	SCOTT KNOLLMILLER	NEM20261070	10/08/2025		10172025	125.90
Invoice: NEM20261070				NEM ESCROW PAY OUT 2024-25					
				125.90 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241706 TOTAL:					125.90
241707	10/17/2025	PRTD	99999	SCOTT SWANSON	NEM20261071	10/08/2025		10172025	487.33
Invoice: NEM20261071				NEM ESCROW PAY OUT 2024-25					
				487.33 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241707 TOTAL:					487.33
241708	10/17/2025	PRTD	99999	SCOTT THON	NEM20261072	10/08/2025		10172025	128.31
Invoice: NEM20261072				NEM ESCROW PAY OUT 2024-25					
				128.31 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241708 TOTAL:					128.31
241709	10/17/2025	PRTD	99999	SCOTT WHITE	NEM20261073	10/08/2025		10172025	148.81
Invoice: NEM20261073				NEM ESCROW PAY OUT 2024-25					
				148.81 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241709 TOTAL:					148.81

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241710	10/17/2025	PRTD	99999	SCOTT A MACDONALD	NEM20261074	10/08/2025		10172025	132.43
Invoice: NEM20261074						NEM ESCROW PAY OUT 2024-25			
				132.43 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241710 TOTAL:		132.43
241711	10/17/2025	PRTD	99999	SELMA FINK	NEM20261075	10/08/2025		10172025	107.62
Invoice: NEM20261075						NEM ESCROW PAY OUT 2024-25			
				107.62 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241711 TOTAL:		107.62
241712	10/17/2025	PRTD	99999	SHARON LAYNE	NEM20261076	10/08/2025		10172025	483.60
Invoice: NEM20261076						NEM ESCROW PAY OUT 2024-25			
				483.60 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241712 TOTAL:		483.60
241713	10/17/2025	PRTD	99999	SHAUNA TURNER	NEM20261077	10/08/2025		10172025	159.92
Invoice: NEM20261077						NEM ESCROW PAY OUT 2024-25			
				159.92 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241713 TOTAL:		159.92
241714	10/17/2025	PRTD	99999	SHELBIE H WASSEL	NEM20261078	10/08/2025		10172025	354.92
Invoice: NEM20261078						NEM ESCROW PAY OUT 2024-25			
				354.92 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241714 TOTAL:		354.92
241715	10/17/2025	PRTD	99999	SHELDON N GOLDMAN	NEM20261079	10/08/2025		10172025	181.29
Invoice: NEM20261079						NEM ESCROW PAY OUT 2024-25			
				181.29 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241715 TOTAL:		181.29
241716	10/17/2025	PRTD	99999	SHELLEY FYFFE	NEM20261080	10/08/2025		10172025	207.69
Invoice: NEM20261080						NEM ESCROW PAY OUT 2024-25			
				207.69 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241716 TOTAL:		207.69

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241717	10/17/2025	PRTD	99999	SHELLEY SNYDER	NEM20261081	10/08/2025		10172025	108.68
Invoice: NEM20261081						NEM ESCROW PAY OUT 2024-25			
				108.68 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241717 TOTAL:			108.68
241718	10/17/2025	PRTD	99999	SHERYL CARONNA	NEM20261082	10/08/2025		10172025	245.57
Invoice: NEM20261082						NEM ESCROW PAY OUT 2024-25			
				245.57 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241718 TOTAL:			245.57
241719	10/17/2025	PRTD	99999	SHIRLEY BEATON	NEM20261083	10/08/2025		10172025	337.90
Invoice: NEM20261083						NEM ESCROW PAY OUT 2024-25			
				337.90 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241719 TOTAL:			337.90
241720	10/17/2025	PRTD	99999	SILVIO PENSANTI	NEM20261084	10/08/2025		10172025	122.59
Invoice: NEM20261084						NEM ESCROW PAY OUT 2024-25			
				122.59 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241720 TOTAL:			122.59
241721	10/17/2025	PRTD	99999	SIMONE EPSTEIN	NEM20261085	10/08/2025		10172025	115.37
Invoice: NEM20261085						NEM ESCROW PAY OUT 2024-25			
				115.37 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241721 TOTAL:			115.37
241722	10/17/2025	PRTD	99999	SKIP YUNGFLEISCH	NEM20261086	10/08/2025		10172025	137.19
Invoice: NEM20261086						NEM ESCROW PAY OUT 2024-25			
				137.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241722 TOTAL:			137.19
241723	10/17/2025	PRTD	99999	STEPHEN GOLD	NEM20261087	10/08/2025		10172025	132.88
Invoice: NEM20261087						NEM ESCROW PAY OUT 2024-25			
				132.88 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241723 TOTAL:			132.88

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241724	10/17/2025	PRTD	99999	STEPHEN OVERTON	NEM20261088	10/08/2025		10172025	271.16
Invoice: NEM20261088						NEM ESCROW PAY OUT 2024-25			
				271.16 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241724 TOTAL:			271.16
241725	10/17/2025	PRTD	99999	STEPHEN J BROWN	NEM20261089	10/08/2025		10172025	173.22
Invoice: NEM20261089						NEM ESCROW PAY OUT 2024-25			
				173.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241725 TOTAL:			173.22
241726	10/17/2025	PRTD	99999	STEPHEN P GRAYSON	NEM20261090	10/08/2025		10172025	306.83
Invoice: NEM20261090						NEM ESCROW PAY OUT 2024-25			
				306.83 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241726 TOTAL:			306.83
241727	10/17/2025	PRTD	99999	STEVE HANEY	NEM20261091	10/08/2025		10172025	265.44
Invoice: NEM20261091						NEM ESCROW PAY OUT 2024-25			
				265.44 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241727 TOTAL:			265.44
241728	10/17/2025	PRTD	99999	STEVE PIETRANGELO	NEM20261092	10/08/2025		10172025	209.36
Invoice: NEM20261092						NEM ESCROW PAY OUT 2024-25			
				209.36 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241728 TOTAL:			209.36
241729	10/17/2025	PRTD	99999	STEVE REGIER	NEM20261093	10/08/2025		10172025	165.50
Invoice: NEM20261093						NEM ESCROW PAY OUT 2024-25			
				165.50 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241729 TOTAL:			165.50
241730	10/17/2025	PRTD	99999	STEVE E LAPIN	NEM20261094	10/08/2025		10172025	496.58
Invoice: NEM20261094						NEM ESCROW PAY OUT 2024-25			
				496.58 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241730 TOTAL:			496.58

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241731	10/17/2025	PRTD	99999	STEVEN ROSENBLUM	NEM20261095	10/08/2025		10172025	391.59
Invoice: NEM20261095				NEM ESCROW PAY OUT 2024-25					
				391.59 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241731 TOTAL:					391.59
241732	10/17/2025	PRTD	99999	STUART ROSENTHAL	NEM20261096	10/08/2025		10172025	334.03
Invoice: NEM20261096				NEM ESCROW PAY OUT 2024-25					
				334.03 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241732 TOTAL:					334.03
241733	10/17/2025	PRTD	99999	STUART SWEETSER	NEM20261097	10/08/2025		10172025	431.10
Invoice: NEM20261097				NEM ESCROW PAY OUT 2024-25					
				431.10 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241733 TOTAL:					431.10
241734	10/17/2025	PRTD	99999	SUNRISE COUNTRY CLUB	NEM20261098	10/08/2025		10172025	238.79
Invoice: NEM20261098				NEM ESCROW PAY OUT 2024-25					
				238.79 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241734 TOTAL:					238.79
241735	10/17/2025	PRTD	99999	SUNRISE COUNTRY CLUB	NEM20261099	10/08/2025		10172025	250.14
Invoice: NEM20261099				NEM ESCROW PAY OUT 2024-25					
				250.14 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241735 TOTAL:					250.14
241736	10/17/2025	PRTD	99999	SUSAN BELL	NEM20261100	10/08/2025		10172025	107.30
Invoice: NEM20261100				NEM ESCROW PAY OUT 2024-25					
				107.30 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241736 TOTAL:					107.30
241737	10/17/2025	PRTD	99999	SUSAN ST LOUIS	NEM20261101	10/08/2025		10172025	343.18
Invoice: NEM20261101				NEM ESCROW PAY OUT 2024-25					
				343.18 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241737 TOTAL:					343.18

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241738	10/17/2025	PRTD	99999	SUSAN TUBMAN	NEM20261102	10/08/2025		10172025	181.64
Invoice: NEM20261102						NEM ESCROW PAY OUT 2024-25			
				181.64 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241738 TOTAL:			181.64
241739	10/17/2025	PRTD	99999	SUSAN VERBURG	NEM20261103	10/08/2025		10172025	131.59
Invoice: NEM20261103						NEM ESCROW PAY OUT 2024-25			
				131.59 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241739 TOTAL:			131.59
241740	10/17/2025	PRTD	99999	SUSANNE TARR	NEM20261104	10/08/2025		10172025	401.10
Invoice: NEM20261104						NEM ESCROW PAY OUT 2024-25			
				401.10 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241740 TOTAL:			401.10
241741	10/17/2025	PRTD	99999	SUSANNE TENHOFF	NEM20261105	10/08/2025		10172025	108.68
Invoice: NEM20261105						NEM ESCROW PAY OUT 2024-25			
				108.68 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241741 TOTAL:			108.68
241742	10/17/2025	PRTD	99999	SYLVIA CROY	NEM20261106	10/08/2025		10172025	153.25
Invoice: NEM20261106						NEM ESCROW PAY OUT 2024-25			
				153.25 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241742 TOTAL:			153.25
241743	10/17/2025	PRTD	99999	T BRADY	NEM20261107	10/08/2025		10172025	187.65
Invoice: NEM20261107						NEM ESCROW PAY OUT 2024-25			
				187.65 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241743 TOTAL:			187.65
241744	10/17/2025	PRTD	99999	TAMBRIA TURCO	NEM20261108	10/08/2025		10172025	104.19
Invoice: NEM20261108						NEM ESCROW PAY OUT 2024-25			
				104.19 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241744 TOTAL:			104.19

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241745	10/17/2025	PRTD	99999	TARANG DESHPANDE	NEM20261109	10/08/2025		10172025	289.22
Invoice: NEM20261109						NEM ESCROW PAY OUT 2024-25			
				289.22 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241745 TOTAL:			289.22
241746	10/17/2025	PRTD	99999	TEAGUEJOEL TEAGUE	NEM20261110	10/08/2025		10172025	169.29
Invoice: NEM20261110						NEM ESCROW PAY OUT 2024-25			
				169.29 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241746 TOTAL:			169.29
241747	10/17/2025	PRTD	99999	TED CLARK	NEM20261111	10/08/2025		10172025	146.59
Invoice: NEM20261111						NEM ESCROW PAY OUT 2024-25			
				146.59 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241747 TOTAL:			146.59
241748	10/17/2025	PRTD	99999	TED LAWE	NEM20261112	10/08/2025		10172025	182.03
Invoice: NEM20261112						NEM ESCROW PAY OUT 2024-25			
				182.03 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241748 TOTAL:			182.03
241749	10/17/2025	PRTD	99999	TED J STEIN	NEM20261113	10/08/2025		10172025	111.28
Invoice: NEM20261113						NEM ESCROW PAY OUT 2024-25			
				111.28 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241749 TOTAL:			111.28
241750	10/17/2025	PRTD	99999	TERRY KAISER	NEM20261114	10/08/2025		10172025	135.96
Invoice: NEM20261114						NEM ESCROW PAY OUT 2024-25			
				135.96 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241750 TOTAL:			135.96
241751	10/17/2025	PRTD	99999	THERESE HABIJANAC	NEM20261115	10/08/2025		10172025	183.70
Invoice: NEM20261115						NEM ESCROW PAY OUT 2024-25			
				183.70 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241751 TOTAL:			183.70

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241752	10/17/2025	PRTD	99999	THOMAS GOTTLIEB	NEM20261116	10/08/2025		10172025	146.70
Invoice: NEM20261116						NEM ESCROW PAY OUT 2024-25			
				146.70 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241752 TOTAL:			146.70
241753	10/17/2025	PRTD	99999	THOMAS LALIBERTE	NEM20261117	10/08/2025		10172025	103.20
Invoice: NEM20261117						NEM ESCROW PAY OUT 2024-25			
				103.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241753 TOTAL:			103.20
241754	10/17/2025	PRTD	99999	THOMAS TOKHEIM	NEM20261118	10/08/2025		10172025	292.20
Invoice: NEM20261118						NEM ESCROW PAY OUT 2024-25			
				292.20 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241754 TOTAL:			292.20
241755	10/17/2025	PRTD	99999	THOMAS J PETERSON	NEM20261119	10/08/2025		10172025	126.54
Invoice: NEM20261119						NEM ESCROW PAY OUT 2024-25			
				126.54 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241755 TOTAL:			126.54
241756	10/17/2025	PRTD	99999	THOMAS R MCHENRY	NEM20261120	10/08/2025		10172025	173.38
Invoice: NEM20261120						NEM ESCROW PAY OUT 2024-25			
				173.38 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241756 TOTAL:			173.38
241757	10/17/2025	PRTD	99999	TIMOTHY CORBETT	NEM20261121	10/08/2025		10172025	160.47
Invoice: NEM20261121						NEM ESCROW PAY OUT 2024-25			
				160.47 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241757 TOTAL:			160.47
241758	10/17/2025	PRTD	99999	TIMOTHY GOSNEY	NEM20261122	10/08/2025		10172025	300.49
Invoice: NEM20261122						NEM ESCROW PAY OUT 2024-25			
				300.49 600 2653		NET ENERGY METERING LIABILITY			
						CHECK 241758 TOTAL:			300.49

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241759	10/17/2025	PRTD	99999	TIMOTHY R BRADLEY JR	NEM20261123	10/08/2025		10172025	271.78
	Invoice: NEM20261123					NEM ESCROW PAY OUT 2024-25			
				271.78 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241759 TOTAL:		271.78
241760	10/17/2025	PRTD	99999	TOM MALPASS	NEM20261124	10/08/2025		10172025	127.57
	Invoice: NEM20261124					NEM ESCROW PAY OUT 2024-25			
				127.57 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241760 TOTAL:		127.57
241761	10/17/2025	PRTD	99999	TOM MARONDE	NEM20261125	10/08/2025		10172025	143.74
	Invoice: NEM20261125					NEM ESCROW PAY OUT 2024-25			
				143.74 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241761 TOTAL:		143.74
241762	10/17/2025	PRTD	99999	TOM ZECCHINI	NEM20261126	10/08/2025		10172025	313.71
	Invoice: NEM20261126					NEM ESCROW PAY OUT 2024-25			
				313.71 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241762 TOTAL:		313.71
241763	10/17/2025	PRTD	99999	TOMMY HOUSHAR	NEM20261127	10/08/2025		10172025	358.26
	Invoice: NEM20261127					NEM ESCROW PAY OUT 2024-25			
				358.26 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241763 TOTAL:		358.26
241764	10/17/2025	PRTD	99999	TONI VICTOR	NEM20261128	10/08/2025		10172025	233.74
	Invoice: NEM20261128					NEM ESCROW PAY OUT 2024-25			
				233.74 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241764 TOTAL:		233.74
241765	10/17/2025	PRTD	99999	TRACEY JONES	NEM20261129	10/08/2025		10172025	110.35
	Invoice: NEM20261129					NEM ESCROW PAY OUT 2024-25			
				110.35 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241765 TOTAL:		110.35

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241766	10/17/2025	PRTD	99999	TRINA DAVIS-SARTIN	NEM20261130	10/08/2025		10172025	267.73
Invoice: NEM20261130				NEM ESCROW PAY OUT 2024-25					
				267.73 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241766 TOTAL:					267.73
241767	10/17/2025	PRTD	99999	TYRONE SEWELL	NEM20261131	10/08/2025		10172025	121.35
Invoice: NEM20261131				NEM ESCROW PAY OUT 2024-25					
				121.35 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241767 TOTAL:					121.35
241768	10/17/2025	PRTD	99999	VALERIE DUNN	NEM20261132	10/08/2025		10172025	311.73
Invoice: NEM20261132				NEM ESCROW PAY OUT 2024-25					
				311.73 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241768 TOTAL:					311.73
241769	10/17/2025	PRTD	99999	VERNA WATSON	NEM20261133	10/08/2025		10172025	109.41
Invoice: NEM20261133				NEM ESCROW PAY OUT 2024-25					
				109.41 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241769 TOTAL:					109.41
241770	10/17/2025	PRTD	99999	VIRGINIA DVORAK	NEM20261134	10/08/2025		10172025	134.72
Invoice: NEM20261134				NEM ESCROW PAY OUT 2024-25					
				134.72 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241770 TOTAL:					134.72
241771	10/17/2025	PRTD	99999	VIRGINIA NOLAND	NEM20261135	10/08/2025		10172025	173.96
Invoice: NEM20261135				NEM ESCROW PAY OUT 2024-25					
				173.96 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241771 TOTAL:					173.96
241772	10/17/2025	PRTD	99999	VLADISLAV BARGMAN	NEM20261136	10/08/2025		10172025	439.23
Invoice: NEM20261136				NEM ESCROW PAY OUT 2024-25					
				439.23 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241772 TOTAL:					439.23

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241773	10/17/2025	PRTD	99999	W GEORGE RODGERS	NEM20261137	10/08/2025		10172025	310.90
Invoice: NEM20261137				NEM ESCROW PAY OUT 2024-25					
				310.90 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241773 TOTAL:					310.90
241774	10/17/2025	PRTD	99999	WALTER C DANDRIDGE	NEM20261138	10/08/2025		10172025	269.42
Invoice: NEM20261138				NEM ESCROW PAY OUT 2024-25					
				269.42 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241774 TOTAL:					269.42
241775	10/17/2025	PRTD	99999	WARREN SCHNEIDER	NEM20261139	10/08/2025		10172025	365.79
Invoice: NEM20261139				NEM ESCROW PAY OUT 2024-25					
				365.79 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241775 TOTAL:					365.79
241776	10/17/2025	PRTD	99999	WAYNE KANOW	NEM20261140	10/08/2025		10172025	159.76
Invoice: NEM20261140				NEM ESCROW PAY OUT 2024-25					
				159.76 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241776 TOTAL:					159.76
241777	10/17/2025	PRTD	99999	WENDY GREENE	NEM20261141	10/08/2025		10172025	287.71
Invoice: NEM20261141				NEM ESCROW PAY OUT 2024-25					
				287.71 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241777 TOTAL:					287.71
241778	10/17/2025	PRTD	99999	WENDY B O'KANE	NEM20261142	10/08/2025		10172025	138.12
Invoice: NEM20261142				NEM ESCROW PAY OUT 2024-25					
				138.12 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241778 TOTAL:					138.12
241779	10/17/2025	PRTD	99999	WILLIAM ALLEN	NEM20261143	10/08/2025		10172025	141.97
Invoice: NEM20261143				NEM ESCROW PAY OUT 2024-25					
				141.97 600 2653 NET ENERGY METERING LIABILITY					
				CHECK 241779 TOTAL:					141.97

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME		INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC					
241780	10/17/2025	PRTD	99999	WILLIAM CHUNOWITZ		NEM20261144	10/08/2025		10172025	297.29
Invoice: NEM20261144							NEM ESCROW PAY OUT 2024-25			
					297.29 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241780 TOTAL:		297.29
241781	10/17/2025	PRTD	99999	WILLIAM KINSTLE		NEM20261145	10/08/2025		10172025	106.19
Invoice: NEM20261145							NEM ESCROW PAY OUT 2024-25			
					106.19 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241781 TOTAL:		106.19
241782	10/17/2025	PRTD	99999	WILLIAM RAINES		NEM20261146	10/08/2025		10172025	211.25
Invoice: NEM20261146							NEM ESCROW PAY OUT 2024-25			
					211.25 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241782 TOTAL:		211.25
241783	10/17/2025	PRTD	99999	WILLIAM & CONNIE R. UNDERWOOD		NEM20261147	10/08/2025		10172025	100.64
Invoice: NEM20261147							NEM ESCROW PAY OUT 2024-25			
					100.64 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241783 TOTAL:		100.64
241784	10/17/2025	PRTD	99999	WILLIAM BURLEY		EV20250020	10/06/2025		10172025	300.00
Invoice: EV20250020							RMEA CHARGEUP PROGRAM			
					300.00 600 7426		SUSTAINABILITY REBATES & PRGRM			
								CHECK 241784 TOTAL:		300.00
241785	10/17/2025	PRTD	99999	WILLIAM D NICHOLSON		NEM20261148	10/08/2025		10172025	392.91
Invoice: NEM20261148							NEM ESCROW PAY OUT 2024-25			
					392.91 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241785 TOTAL:		392.91
241786	10/17/2025	PRTD	99999	WILLIAM DAVID BAKER		NEM20261149	10/08/2025		10172025	309.21
Invoice: NEM20261149							NEM ESCROW PAY OUT 2024-25			
					309.21 600 2653		NET ENERGY METERING LIABILITY			
								CHECK 241786 TOTAL:		309.21

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241787	10/17/2025	PRTD	99999	WILLIAM G PARSONS	NEM20261150	10/08/2025		10172025	341.32
Invoice: NEM20261150						NEM ESCROW PAY OUT 2024-25			
				341.32 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241787 TOTAL:		341.32
241788	10/17/2025	PRTD	99999	WILLIAM J BURDEN	NEM20261151	10/08/2025		10172025	176.76
Invoice: NEM20261151						NEM ESCROW PAY OUT 2024-25			
				176.76 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241788 TOTAL:		176.76
241789	10/17/2025	PRTD	360	PACIFIC TELEMANAGEMENT SERVICES`	2146359	09/25/2025		10172025	118.00
Invoice: 2146359						SERVICE PE 10/31/2025			
				118.00 24281000 7821		TELEPHONE			
						CHECK	241789 TOTAL:		118.00
241790	10/17/2025	PRTD	1892	PALM SPRINGS POWER BASEBALL CLUB,	7495	10/02/2025		10172025	8,250.00
Invoice: 7495						SPONSORSHIP - PS POWER BASEBALL FY 2026			
				8,250.00 10157000 7872		PUBLIC RELATIONS			
						CHECK	241790 TOTAL:		8,250.00
241791	10/17/2025	PRTD	423	PATTON ENTERPRISES INC.	101682	10/14/2025		10172025	195.31
Invoice: 101682						WEATHER STRIP			
				195.31 21500690 7612		MAINTENANCE			
						CHECK	241791 TOTAL:		195.31
241792	10/17/2025	PRTD	670	POSTNET	1044	09/29/2025		10172025	1,048.41
Invoice: 1044						PRINTING SERVICES			
				1,048.41 10157000 7872		PUBLIC RELATIONS			
						CHECK	241792 TOTAL:		1,048.41
241793	10/17/2025	PRTD	5	POWERS AWARDS	162190	09/17/2025		10172025	252.16
Invoice: 162190						NAME PLATES			
				252.16 10151000 8000		SUPPLIES			
				POWERS AWARDS	162295	10/07/2025		10172025	46.95
Invoice: 162295						NAME BADGE			
				46.95 24281000 8000		SUPPLIES			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
							CHECK	241793 TOTAL:	299.11
241794	10/17/2025	PRTD	510	PRO EQUIPMENT INC	106733	10/07/2025		10172025	112.40
	Invoice: 106733					CHAIN SAW REPAIR			
					112.40 10133000 8004	REPAIR & MAINT SUPPLIES			
							CHECK	241794 TOTAL:	112.40
241795	10/17/2025	PRTD	1926	PROPER SOLUTIONS	17607	10/10/2025		10172025	1,669.80
	Invoice: 17607					M COVARRUBIAS PE 10/10/2025			
					1,669.80 10133000 7444	TEMPORARY AGENCY SERVICES			
							CHECK	241795 TOTAL:	1,669.80
241796	10/17/2025	PRTD	147	RIVERSIDE COUNTY SHERIFFS DEPT	SH0000049061	09/30/2025		10172025	907,963.55
	Invoice: SH0000049061					LAW ENFORCEMENT BP #2 PE 8/20/2025			
					907,963.55 10141000 7404	SHERIFF SERVICES			
							CHECK	241796 TOTAL:	907,963.55
241797	10/17/2025	PRTD	394	RIVERSIDE COUNTY TREASURER	2025004417028	10/03/2025		10172025	564.36
	Invoice: 2025004417028					ASSESSMENT #2025-650080050 - INSTALLMENT 1 & 2			
					564.36 10133000 7648	PROPERTY TAX/ASSESSMENT			
				RIVERSIDE COUNTY TREASURER	2025003000571	10/03/2025		10172025	212.34
	Invoice: 2025003000571					ASSESSMENT SUP - 2025-650080054 - INSTALMENT 1 & 2			
					212.34 10133000 7648	PROPERTY TAX/ASSESSMENT			
				RIVERSIDE COUNTY TREASURER	2025005156268	10/03/2025		10172025	4,667.30
	Invoice: 2025005156268					ASSESSMENT SUP 2025-650090024 - INSTALEMENT 1 & 2			
					4,667.30 10133000 7648	PROPERTY TAX/ASSESSMENT			
				RIVERSIDE COUNTY TREASURER	2025003478315	09/26/2025		10172025	5,233.20
	Invoice: 2025003478315					ASSESSMENT #2025-684182007 - INSTALLMENT 1 & 2			
					5,233.20 10133000 7648	PROPERTY TAX/ASSESSMENT			
							CHECK	241797 TOTAL:	10,677.20
241798	10/17/2025	PRTD	1864	RMES PTG C/O RANCHO MIRAGE ELEMEN	80460	10/14/2025		10172025	500.00
	Invoice: 80460					SUPPORT FOR NON-PROFIT			
					100.00				
					E WEILL -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					100.00				
					E MALLOTTO -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					100.00				

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
				E OKEEFE -UNDEFINED -UNDEFINED -UNDEFINED					
				10157000 7458 SUPPORT FOR NON-PROFITS 100.00					
				E EDELSTEIN -UNDEFINED -UNDEFINED -UNDEFINED					
				10157000 7458 SUPPORT FOR NON-PROFITS 100.00					
				E DOWNS -UNDEFINED -UNDEFINED -UNDEFINED					
				10157000 7458 SUPPORT FOR NON-PROFITS					
				CHECK 241798 TOTAL:					500.00
241799	10/17/2025	PRTD	139	SIERRA PACIFIC ELECTRICAL	31611	09/30/2025		10172025	3,580.00
	Invoice: 31611			TRAFFIC SIGNAL MAINTENANCE - VIA FLORENCIO					
				3,580.00 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC					
				CHECK 241799 TOTAL:					3,580.00
241800	10/17/2025	PRTD	61	SOUTHERN CALIFORNIA EDISON COMPAN	008609302025	10/03/2025		10172025	1,675.13
	Invoice: 008609302025			SERVICE PE 9/30/2025 (ACCT# 700052520086)					
				1,675.13 10132000 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	954809302025	10/03/2025		10172025	630.26
	Invoice: 954809302025			SERVICE PE 9/30/2025 (ACCT #700183359548)					
				630.26 201 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	170809182025	09/23/2025		10172025	81.85
	Invoice: 170809182025			SERVICE PE 9/18/2025 (ACCT #700261401708)					
				81.85 201 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	681209302025	10/03/2025		10172025	803.39
	Invoice: 681209302025			SERVICE PE 9/30/2025 (ACCT #700349196812)					
				474.86 21895000 7603 ELECTRICITY					
				278.77 21893000 7603 ELECTRICITY					
				49.76 21892000 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	492209182025	09/23/2025		10172025	1,499.02
	Invoice: 492209182025			SERVICE PE 8/19/2025 (ACCT #700457284922)					
				1,499.02 21892000 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	460409292025	10/02/2025		10172025	65.32
	Invoice: 460409292025			SERVICE PE 9/29/2025 (ACCT# 700484394604)					
				65.32 201 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	509309252025	10/01/2025		10172025	5,243.60
	Invoice: 509309252025			SERVICE PE 09/28/2025 (ACCT# 700485325093)					
				5,243.60 21500500 7603 ELECTRICITY					
				SOUTHERN CALIFORNIA EDISON COMPAN	690510022025	10/07/2025		10172025	1,746.95
	Invoice: 690510022025			SERVICE PE 10/02/2025 (ACCT# 700394436905)					
				1,746.95 10132000 7618 TRAFFIC SIGNAL MAINT/ELEC					

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241800 TOTAL:		11,745.52
241801	10/17/2025	PRTD	2286	STATE OF CALIFORNIA	80439	10/01/2025		10172025	1,043.48
Invoice: 80439						SMI FEES Q1 07/25 - 09/25			
				1,043.48 101 2465		SMI FEE			
						CHECK	241801 TOTAL:		1,043.48
241802	10/17/2025	PRTD	532	SUNLINE TRANSIT AGENCY	INV09182	09/30/2025	20260006	10172025	4,763.67
Invoice: INV09182						BUS SHELTER MAINTENANCE 9/2025			
				4,763.67 10133000 7612		MAINTENANCE			
						CHECK	241802 TOTAL:		4,763.67
241803	10/17/2025	PRTD	2824	T-MOBILE USA INC	211217610	10/02/2025		10172025	22.84
Invoice: 211217610						SERVICE PE 10/1/2025			
				22.84 28600000 7821		TELEPHONE			
						CHECK	241803 TOTAL:		22.84
241804	10/17/2025	PRTD	2756	WESTERN SYSTEMS, INC	0000069130	09/30/2025		10172025	525.89
Invoice: 0000069130						LOCK & LATCH KIT			
				525.89 10132000 7618		TRAFFIC SIGNAL MAINT/ELEC			
						CHECK	241804 TOTAL:		525.89
241805	10/17/2025	PRTD	2881	WELTYS ENTERPRISES, INC	25-74157	10/10/2025		10172025	263.34
Invoice: 25-74157						2026 RMWF INVITATIONS			
				263.34 244 7839		REPRODUCTION & PRINTING			
				WELTYS ENTERPRISES, INC	25-74023	10/07/2025		10172025	258.58
Invoice: 25-74023						LIBRARY CARD APPLICATIONS			
				258.58 24281000 7839		REPRODUCTION & PRINTING			
						CHECK	241805 TOTAL:		521.92
241806	10/17/2025	PRTD	129	ZUMAR INDUSTRIES INC	11134	10/06/2025		10172025	2,136.15
Invoice: 11134						ANCHOR - STREETS			
				2,136.15 10132000 8003		STREET SIGNS & MARKINGS			
						CHECK	241806 TOTAL:		2,136.15

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NUMBER OF CHECKS 596 *** CASH ACCOUNT TOTAL *** 1,624,567.60

	COUNT	AMOUNT
TOTAL PRINTED CHECKS	574	1,308,984.42
TOTAL EFT'S	22	315,583.18

*** GRAND TOTAL *** 1,624,567.60

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
9106	10/24/2025	EFT	492	AIR EXCHANGE, INC	91615713	10/07/2025		10242025	683.75
Invoice: 91615713						PM SERVICE - FS #69			
					683.75 21500690 7612	MAINTENANCE			
				AIR EXCHANGE, INC	91615712	10/07/2025		10242025	1,813.16
Invoice: 91615712						PM SERVICE - FS #50			
					1,813.16 21500500 7612	MAINTENANCE			
						CHECK	9106 TOTAL:		2,496.91
9107	10/24/2025	EFT	333	BECK OIL INC	184717	10/07/2025		10242025	464.87
Invoice: 184717						FUEL PE 10/7/25			
					62.45 10133000 7623	VEHICLE FUEL			
					194.77 10132000 7623	VEHICLE FUEL			
					207.65 10141000 7623	VEHICLE FUEL			
				BECK OIL INC	185406	10/14/2025		10242025	1,169.32
Invoice: 185406						FUEL PE 10/14/2025			
					328.99 10133000 7623	VEHICLE FUEL			
					89.13 21800000 7623	VEHICLE FUEL			
					416.88 10132000 7623	VEHICLE FUEL			
					177.84 10132000 7623	VEHICLE FUEL			
					156.48 10123000 7623	VEHICLE FUEL			
				BECK OIL INC	186439	10/21/2025		10242025	628.29
Invoice: 186439						FUEL PE 10/21/2025			
					305.76 10133000 7623	VEHICLE FUEL			
					113.92 10132000 7623	VEHICLE FUEL			
					208.61 10141000 7623	VEHICLE FUEL			
						CHECK	9107 TOTAL:		2,262.48
9108	10/24/2025	EFT	2361	JOEL CASTILLO	80593	10/17/2025		10242025	293.61
Invoice: 80593						EXP REIMB - WORKBOOTS FY 24/25			
					293.61 10133000 8020	UNIFORMS			
						CHECK	9108 TOTAL:		293.61
9109	10/24/2025	EFT	2314	CREATIVE LIGHTING & ELECTRICAL ,	4154901	08/27/2025	20260016	10242025	269.50
Invoice: 4154901						LIGHTING MAINTENANCE 8/27/2025			
					269.50 24281000 7612	MAINTENANCE			
				CREATIVE LIGHTING & ELECTRICAL ,	4155390	10/21/2025	20260016	10242025	269.50
Invoice: 4155390						LIGHTING MAINTENANCE 10/2025			
					269.50 24281000 7612	MAINTENANCE			
						CHECK	9109 TOTAL:		539.00

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
9110	10/24/2025	EFT	433	DESERT PROMOTIONAL & EMBROIDERY L	106766	09/23/2025		10242025	574.66
Invoice: 106766						COPS UNIFORMS			
				574.66	10141000 7550	CITY-WIDE COPS PROGRAM			
						CHECK	9110 TOTAL:		574.66
9111	10/24/2025	EFT	2783	DESERT THEATRICALS, LLC	DT 26-1003	10/19/2025	20260017	10242025	40,000.00
Invoice: DT 26-1003						DESERT THEATRICALS 2025-2026 SEASON			
				40,000.00	10172000 7494	AMPHITHEATER PROGRAMMING			
						CHECK	9111 TOTAL:		40,000.00
9112	10/24/2025	EFT	3388	EVE FROMBERG EDELSTEIN	80652	10/15/2025		10242025	1,082.88
Invoice: 80652						EXP REIMB - LCC CONFERENCE 10/7-10/25			
				1,082.88	10111000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	9112 TOTAL:		1,082.88
9113	10/24/2025	EFT	3017	IAN LASLEY	80692	10/22/2025		10242025	234.00
Invoice: 80692						REIMBURSEMENT - PWI CONFERENCE 10/14 - 16/25			
				117.00	10132000 7806	MEETINGS/TRAINING/TRAVEL			
				117.00	10133000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	9113 TOTAL:		234.00
9114	10/24/2025	EFT	10	ICMA RETIREMENT TRUST-401	80682	10/22/2025		10242025	4,658.34
Invoice: 80682						ICMA 401A PE 10/17/25			
				4,658.34	101 2236	401A DEF COMP - ICMA			
						CHECK	9114 TOTAL:		4,658.34
9115	10/24/2025	EFT	34	ICMA RETIREMENT TRUST-457	80683	10/22/2025		10242025	31,102.21
Invoice: 80683						ICMA 457 PE 10/17/25			
				31,102.21	101 2235	DEFERRED COMP - ICMA			
						CHECK	9115 TOTAL:		31,102.21
9116	10/24/2025	EFT	36	JOSLYN CENTER	80643	10/21/2025		10242025	89.24
Invoice: 80643						WITHDRAWAL OF INTEREST ALLOCATION 10/21/2025			
				89.24	750 3600	FUND BALANCE-UNDESIGNATED			
						CHECK	9116 TOTAL:		89.24

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
						INVOICE DTL DESC			
9117	10/24/2025	EFT	813	LYNN MALLOTTO	80654	10/15/2025		10242025	1,451.88
Invoice: 80654						EXP REIMB - LCC CONFERENCE 10/7-10/25			
				1,451.88 10111000 7806		MEETINGS/TRAINING/TRAVEL			
						CHECK	9117 TOTAL:		1,451.88
9118	10/24/2025	EFT	3309	MAZZETTI INC	0110002	10/20/2025	20260072	10242025	48,000.00
Invoice: 0110002						RMEA ENERGY EFFICIENCY CONSULTANT 9/2025			
				48,000.00 600 7426		SUSTAINABILITY REBATES & PRGRM			
						CHECK	9118 TOTAL:		48,000.00
9119	10/24/2025	EFT	1295	MICHAEL BAKER INTERNATIONAL INC	1252648	06/25/2025	20260052	10242025	26,937.75
Invoice: 1252648						CP 22-378 PUBLIC PARKING IMPROVEMENTS PE 5/25/2025			
				26,937.75 10134000 9003		PUBLIC PARKING LOT IMPROVEMENT			
				MICHAEL BAKER INTERNATIONAL INC	1256857	08/04/2025	20260052	10242025	12,362.85
Invoice: 1256857						CP 22-378 PUBLIC PARKING IMPROVEMENTS PE 7/27/2025			
				12,362.85 10134000 9003		PUBLIC PARKING LOT IMPROVEMENT			
						CHECK	9119 TOTAL:		39,300.60
9120	10/24/2025	EFT	3239	MICHAEL O'KEEFE	80653	10/15/2025		10242025	1,387.88
Invoice: 80653						EXP REIMB - LCC CONFERENCE 10/7-10/25			
				1,387.88 10111000 7806		MEETINGS/TRAINING/TRAVEL			
						CHECK	9120 TOTAL:		1,387.88
9121	10/24/2025	EFT	3390	MONTEFERANTE FOODS LLC	RML20251117	10/20/2025		10242025	11,411.81
Invoice: RML20251117						DEPOSIT - RMPLO 30TH ANNIVERSARY DONOR EVENT			
				11,411.81 24281000 7887		SPECIAL EVENTS			
						CHECK	9121 TOTAL:		11,411.81
9122	10/24/2025	EFT	468	NATIONWIDE	80688	10/22/2025		10242025	1,982.21
Invoice: 80688						PT DEFERRED COMP PE 10/17/25			
				1,982.21 101 2241		NATIONAL - PART TIME			
						CHECK	9122 TOTAL:		1,982.21
9123	10/24/2025	EFT	295	OVERDRIVE INC	01187CO25248894	08/13/2025		10242025	99.99
Invoice: 01187CO25248894						EBOOKS			
				99.99					
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912	FOUNDATION - COLLECTION			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				OVERDRIVE INC	01187CO25251424	08/18/2025		10242025	137.37
Invoice: 01187CO25251424					EBOOKS & AUDIOBOOKS				
					137.37				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25252738	08/19/2025		10242025	920.26
Invoice: 01187CO25252738					EBOOKS				
					920.26				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25252740	08/19/2025		10242025	59.99
Invoice: 01187CO25252740					EBOOKS				
					59.99				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25253915	08/20/2025		10242025	309.67
Invoice: 01187CO25253915					EBOOKS & AUDIOBOOKS				
					309.67				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25258157	08/26/2025		10242025	292.17
Invoice: 01187CO25258157					EBOOKS & AUDIOBOOKS				
					292.17				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25261312	08/28/2025		10242025	812.69
Invoice: 01187CO25261312					EBOOKS & AUDIOBOOKS				
					812.69				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25277881	09/09/2025		10242025	247.50
Invoice: 01187DA25277881					EBOOKS				
					247.50				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25276862	09/09/2025		10242025	149.04
Invoice: 01187CO25276862					EBOOKS & AUDIOBOOKS				
					149.04				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25287531	09/17/2025		10242025	9.99
Invoice: 01187DA25287531					EBOOKS				
					9.99				

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25288926	09/19/2025		10242025	488.61
				Invoice: 01187CO25288926	EBOOKS				
					488.61				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25292745	09/23/2025		10242025	152.49
				Invoice: 01187DA25292745	EBOOKS				
					152.49				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25292908	09/23/2025		10242025	10.99
				Invoice: 01187DA25292908	EBOOKS				
					10.99				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25294118	09/24/2025		10242025	49.99
				Invoice: 01187CO25294118	AUDIOBOOKS				
					49.99				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25306371	09/30/2025		10242025	27.50
				Invoice: 01187DA25306371	EBOOKS				
					27.50				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25320200	10/14/2025		10242025	150.00
				Invoice: 01187DA25320200	EBOOKS & AUDIOBOOKS				
					150.00				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25321677	10/15/2025		10242025	125.92
				Invoice: 01187CO25321677	EBOOKS & AUDIOBOOKS				
					125.92				
					E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
							CHECK	9123 TOTAL:	4,044.17
9124	10/24/2025	EFT	116	PARKHOUSE TIRE	2030253500	10/15/2025		10242025	1,257.28
	Invoice: 2030253500				TIRE DISPOSAL				
					1,257.28 10132000 7624 VEHICLE MAINTENANCE				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				PARKHOUSE TIRE	2030253480	10/14/2025		10242025	27.48
	Invoice: 2030253480					TIRE REPAIR			
					27.48 10133000 7624	VEHICLE MAINTENANCE			
						CHECK	9124 TOTAL:		1,284.76
9125	10/24/2025	EFT	12	PUBLIC ENTITY RISK MANAGEMENT AUT	INV478	10/21/2025		10242025	11,500.00
	Invoice: INV478					LIABILITY TRUST ACCT DEPOSIT Q2 FY 2025-2026			
					11,500.00 101 1025	CASH WITH PERMA			
						CHECK	9125 TOTAL:		11,500.00
9126	10/24/2025	EFT	2790	RICHARD GRIMALDO	80599	10/20/2025		10242025	773.23
	Invoice: 80599					REIMBURSE-EQUIPMENT FOR FS69 REMODEL			
					773.23 21500690 9453	FIRE STATION #69 BUILD/IM			
						CHECK	9126 TOTAL:		773.23
9127	10/24/2025	EFT	232	RMEA MEMBERSHIP	80686	10/22/2025		10242025	960.00
	Invoice: 80686					RMEA DUES PE 10/17/25			
					960.00 101 2255	RMEA MEMBERSHIP			
				RMEA MEMBERSHIP	80690	10/22/2025		10242025	25.90
	Invoice: 80690					RMEA PREPAID LEGAL PE 10/17/25			
					25.90 101 2256	RMEA PREPAID LEGAL			
				RMEA MEMBERSHIP	80691	10/22/2025		10242025	33.90
	Invoice: 80691					RMEA PREPAID LEGAL PE 10/17/25			
					33.90 101 2256	RMEA PREPAID LEGAL			
						CHECK	9127 TOTAL:		1,019.80
9128	10/24/2025	EFT	3039	STEVE DOWNS	80651	10/15/2025		10242025	1,476.18
	Invoice: 80651					EXP REIMB - LCC CONFERENCE 10/7-10/25			
					1,476.18 10111000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	9128 TOTAL:		1,476.18
9129	10/24/2025	EFT	1991	THOMAS HUNA	18238-1	08/07/2025		10242025	1,732.93
	Invoice: 18238-1					UNIFORM SHIRT/HATS - FACILITIES			
					866.47 10132000 8020	UNIFORMS			
					866.46 10133000 8020	UNIFORMS			
						CHECK	9129 TOTAL:		1,732.93

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
9130	10/24/2025	EFT	218	TRACY FINNELL, INC	139490	10/13/2025		10242025	272.32
Invoice: 139490					272.32 10132000 7624	PM SERVICE - 2002 FORD F550 VEHICLE MAINTENANCE			
				TRACY FINNELL, INC	139506	10/14/2025		10242025	182.66
Invoice: 139506					182.66 10132000 7624	PM SERVICE - 2010 FORD F350 VEHICLE MAINTENANCE			
				TRACY FINNELL, INC	139512	10/14/2025		10242025	169.84
Invoice: 139512					169.84 10132000 7624	PM SERVICE - 2016 FORD F350 VEHICLE MAINTENANCE			
				TRACY FINNELL, INC	139522	10/15/2025		10242025	48.75
Invoice: 139522					48.75 10132000 7624	PM SERVICE - 2010 FORD F350 VEHICLE MAINTENANCE			
				TRACY FINNELL, INC	139521	10/16/2025		10242025	2,609.51
Invoice: 139521					2,609.51 10133000 7624	PM SERVICE - 2007 FORD F550 VEHICLE MAINTENANCE			
				TRACY FINNELL, INC	139583	10/21/2025		10242025	517.06
Invoice: 139583					517.06 10133000 7624	PM SERVICE 2022 FORD F-250 VEHICLE MAINTENANCE			
						CHECK	9130 TOTAL:		3,800.14
9131	10/24/2025	EFT	2889	VINTAGE ASSOCIATES INC	238630	10/16/2025	20260100	10242025	325.00
Invoice: 238630					325.00 10133320 7612	REPAIR MAINLINE - HIGHWAY 111 MAINTENANCE			
				VINTAGE ASSOCIATES INC	238629	10/16/2025	20260100	10242025	554.30
Invoice: 238629					554.30 21892000 7612	COMMUNITY PARK WIRE REPAIR MAINTENANCE			
						CHECK	9131 TOTAL:		879.30
9132	10/24/2025	EFT	1542	WAXIE SANITARY SUPPLY	83585578	10/21/2025		10242025	81.62
Invoice: 83585578					81.62 10133300 8000	JANITORIAL SUPPLIES - CITY HALL SUPPLIES			
						CHECK	9132 TOTAL:		81.62
9133	10/24/2025	EFT	776	WILLDAN ENGINEERING	002-36101	10/07/2025	20260106	10242025	1,995.00
Invoice: 002-36101					1,995.00 10122000 7430	DAVIDSON PLAN CHECK SERVICES 9/2025 PLAN CHECK SERVICES			
				WILLDAN ENGINEERING	002-36104	10/07/2025	20260106	10242025	840.00
Invoice: 002-36104						WOODBRIDGE PLAN CHECK SERVICES 9/2025			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					840.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36106	10/07/2025	20260106	10242025	420.00
				Invoice: 002-36106	JOHNSTON PLAN CHECK SERVICES 9/2025				
					420.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36102	10/07/2025	20260106	10242025	1,155.00
				Invoice: 002-36102	PENTA PLAN CHECK SERVICES 9/2025				
					1,155.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36103	10/07/2025	20260106	10242025	3,045.00
				Invoice: 002-36103	DMB PLAN CHECK SERVICES 9/2025				
					3,045.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36100	10/07/2025	20260106	10242025	2,310.00
				Invoice: 002-36100	SHEA PLAN CHECK SERVICES 9/2025				
					2,310.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36105	10/07/2025	20260106	10242025	525.00
				Invoice: 002-36105	B FOSTER PLAN CHECK SERVICES 9/2025				
					525.00 10122000 7430 PLAN CHECK SERVICES				
				WILLDAN ENGINEERING	002-36099	10/07/2025	20260106	10242025	2,835.00
				Invoice: 002-36099	PLAN CHECK AND INSPECTION SERVICES 9/2025				
					2,835.00 10122000 7430 PLAN CHECK SERVICES				
					CHECK 9133 TOTAL:				13,125.00
9134	10/24/2025	EFT	1848	EMPLOYEE BENEFIT SPECIALISTS, INC	138406	10/16/2025		10242025	380.70
				Invoice: 138406	ADMIN FEE 10/2025				
					380.70 10151000 7400 PROFESSIONAL/TECHNICAL				
					CHECK 9134 TOTAL:				380.70
241807	10/24/2025	PRTD	3077	ALLIED PAVING CO	25-0424-05	07/01/2025	20260084	10242025	57,475.00
				Invoice: 25-0424-05	CP 23-394: CLASS II BIKE LANE EXTENSIONS				
					60,500.00 10134000 9535 BIKE&PED CONNECT/SAFETY IMP				
					-3,025.00 101 2050 RETENTION PAYABLE				
					CHECK 241807 TOTAL:				57,475.00
241808	10/24/2025	PRTD	2888	UNIVERSAL BUILDING MAINTENANCE, L	17666852	09/30/2025	20260111	10242025	200.00
				Invoice: 17666852	JANITORIAL SERVICES 9/2025				
					200.00 10172000 7494 AMPHITHEATER PROGRAMMING				
				UNIVERSAL BUILDING MAINTENANCE, L	17666851	09/30/2025	20260111	10242025	200.00
				Invoice: 17666851	JANITORIAL SERVICES 9/25-29/2025				
					200.00 10172000 7494 AMPHITHEATER PROGRAMMING				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241808 TOTAL:		400.00
241809	10/24/2025	PRTD	56	ALTURA CREDIT UNION	80684	10/22/2025		10242025	176.00
Invoice: 80684						CREDIT UNION PE 10/17/25			
					176.00 101 2245	EMPLOYEE CREDIT UNION			
						CHECK	241809 TOTAL:		176.00
241810	10/24/2025	PRTD	186	ANDERSON COMMUNICATIONS INC	21470B	10/07/2025	20260020	10242025	1,065.00
Invoice: 21470B						RADIO SITE LEASE (3) REPEATERS INDIO HILL 10/2025			
					1,065.00 10142000 7824	COMMUNICATION MAIN/SERV			
						CHECK	241810 TOTAL:		1,065.00
241811	10/24/2025	PRTD	357	BURRTEC ENVIRONMENTAL	45-PU 562886 092125	09/21/2025		10242025	207.75
Invoice: 45-PU 562886 092125						PORTABLE RESTROOM RENTAL FS69 PE 9/20/2025			
					207.75 21500690 9453	FIRE STATION #69 BUILD/IM			
						CHECK	241811 TOTAL:		207.75
241812	10/24/2025	PRTD	275	CINTAS DOCUMENT MANAGEMENT	5298072908	10/20/2025		10242025	616.91
Invoice: 5298072908						FIRST AID SUPPLIES			
					616.91 10151000 8000	SUPPLIES			
						CHECK	241812 TOTAL:		616.91
241813	10/24/2025	PRTD	2627	CLEAN DIESEL SPECIAL SO CAL, INC	4-130500	10/15/2025		10242025	510.00
Invoice: 4-130500						SMOG TESTING - DUMP TRUCKS & CERT TRUCK			
					170.00 10132000 7624	VEHICLE MAINTENANCE			
					170.00 10141000 7624	VEHICLE MAINTENANCE			
					170.00 10132000 7624	VEHICLE MAINTENANCE			
						CHECK	241813 TOTAL:		510.00
241814	10/24/2025	PRTD	322	ELEPHANT CAR WASH	91225874	10/06/2025		10242025	107.96
Invoice: 91225874						CAR WASH PE 9/30/2025			
					26.99 10123000 7624	VEHICLE MAINTENANCE			
					26.99 10133000 7624	VEHICLE MAINTENANCE			
					26.99 10122000 7624	VEHICLE MAINTENANCE			
					26.99 10133000 7624	VEHICLE MAINTENANCE			
						CHECK	241814 TOTAL:		107.96

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241815	10/24/2025	PRTD	148	EMPLOYMENT DEVELOPMENT DEPARTMENT	L0769902544	09/22/2025		10242025	9,509.52
Invoice: L0769902544						UNEMPLOYMENT INSURANCE QE 3/31/25 & 6/30/25			
					9,509.52 10151000 7245	UNEMPLOYMENT INSURANCE			
						CHECK	241815 TOTAL:		9,509.52
241816	10/24/2025	PRTD	73	ESGIL CORPORATION	2529042	10/09/2025	20260049	10242025	20,825.08
Invoice: 2529042						PLAN REVIEW SERVICES 9/2025			
					20,825.08 10122000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	241816 TOTAL:		20,825.08
241817	10/24/2025	PRTD	24	FEDERAL EXPRESS CORPORATION	8-963-36605-1	08/22/2025		10242025	87.03
Invoice: 8-963-36605-1						EXPRESS MAIL - ATSI 8/13/2025			
					87.03 10131000 8000	SUPPLIES			
						CHECK	241817 TOTAL:		87.03
241818	10/24/2025	PRTD	3376	FOURTY-FOUR STEPS INC	80613	10/19/2025		10242025	2,090.23
Invoice: 80613						2026 RMWF TRAVEL REIMBURSEMENT - B MELTZER			
					2,090.23 244 7910	FOUNDATION - PROGRAMS			
						CHECK	241818 TOTAL:		2,090.23
241819	10/24/2025	PRTD	1489	THE HERO IN YOU FOUNDATION	80574	10/16/2025		10242025	5,000.00
Invoice: 80574						SUPPORT FOR NON-PROFIT			
					1,000.00				
					E WEILL -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					1,000.00				
					E MALLOTTO -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					1,000.00				
					E OKEEFE -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					1,000.00				
					E EDELSTEIN -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
					1,000.00				
					E DOWNS -UNDEFINED -UNDEFINED -UNDEFINED				
					10157000 7458	SUPPORT FOR NON-PROFITS			
						CHECK	241819 TOTAL:		5,000.00

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241820	10/24/2025	PRTD	30	IMPERIAL IRRIGATION DISTRICT	5047882810012025	10/03/2025		10242025	35.17
Invoice: 5047882810012025						SERVICE PE 10/1/2025 (ACCT# 50478828)			
					35.17 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
				IMPERIAL IRRIGATION DISTRICT	5040992510012025	10/03/2025		10242025	1.63
Invoice: 5040992510012025						SERVICE PE 10/1/2025 (ACCT# 50409925)			
					1.63 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
				IMPERIAL IRRIGATION DISTRICT	5040992510082025	10/13/2025		10242025	31.31
Invoice: 5040992510082025						SERVICE PE 10/8/2025 (ACCT# 50409925)			
					31.31 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
				IMPERIAL IRRIGATION DISTRICT	5047882810082025	10/13/2025		10242025	57.45
Invoice: 5047882810082025						SERVICE PE 10/8/2025 (ACCT# 50478828)			
					57.45 10132000 7618	TRAFFIC SIGNAL MAINT/ELEC			
							CHECK	241820 TOTAL:	125.56
241821	10/24/2025	PRTD	185	LIEBERT CASSIDY WHITMORE	306551	09/30/2025		10242025	48.50
Invoice: 306551						LEGAL SERVICES PE 9/30/2025			
					48.50 10154000 7400	PROFESSIONAL/TECHNICAL			
							CHECK	241821 TOTAL:	48.50
241822	10/24/2025	PRTD	1723	LOWES	981476-PNOLRC	09/08/2025		10242025	203.18
Invoice: 981476-PNOLRC						BATTERIES, PLUMBING FIXTURES			
					203.18 10133300 8004	REPAIR & MAINT SUPPLIES			
				LOWES	981860-PNOLRI	09/08/2025		10242025	-148.77
Invoice: 981860-PNOLRI						CREDIT - PLUMBING FIXTURE			
					-148.77 10133300 8004	REPAIR & MAINT SUPPLIES			
				LOWES	981920-PNOLRJ	09/08/2025		10242025	244.69
Invoice: 981920-PNOLRJ						PEST CONTROL SUPPLIES			
					244.69 10133300 8000	SUPPLIES			
				LOWES	985156-PNTDZM	09/09/2025		10242025	18.53
Invoice: 985156-PNTDZM						SPRAY FOAM INSULATION			
					18.53 10132000 8004	REPAIR & MAINT SUPPLIES			
				LOWES	989391-POCKGS	09/11/2025		10242025	14.19
Invoice: 989391-POCKGS						LIQUID NAILS			
					14.19 10132000 8004	REPAIR & MAINT SUPPLIES			
				LOWES	990213-POCKGZ	09/11/2025		10242025	126.80
Invoice: 990213-POCKGZ						ELECTRICAL PLATE COVERS			
					126.80 24281000 8004	REPAIR & MAINT SUPPLIES			
				LOWES	991931-POGITI	09/12/2025		10242025	-40.32

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
Invoice: 991931-POGITI					CREDIT - ELECTRICAL PLATE COVER				
				-40.32 24281000 8004	REPAIR & MAINT SUPPLIES				
			LOWES		991943-POGITJ	09/12/2025		10242025	35.13
Invoice: 991943-POGITJ					ELECTICAL PLATE COVER				
				35.13 24281000 8004	REPAIR & MAINT SUPPLIES				
			LOWES		971530-PORLWB	09/16/2025		10242025	57.77
Invoice: 971530-PORLWB					LED LIGHT BULBS				
				57.77 21892000 8004	REPAIR & MAINT SUPPLIES				
			LOWES		973283-POWDLG	09/17/2025		10242025	24.56
Invoice: 973283-POWDLG					METAL ELECTRICAL COVER				
				24.56 21892000 8004	REPAIR & MAINT SUPPLIES				
			LOWES		986598-PPPRKB	09/23/2025		10242025	61.29
Invoice: 986598-PPPRKB					CABLE TIES, DRILL BITS				
				61.29 10133300 8004	REPAIR & MAINT SUPPLIES				
			LOWES		999557-PQJCQW	09/29/2025		10242025	9.87
Invoice: 999557-PQJCQW					SCREWS				
				9.87 24281000 8004	REPAIR & MAINT SUPPLIES				
			LOWES		999668-PQJCRB	09/29/2025		10242025	65.65
Invoice: 999668-PQJCRB					PLYWOOD, SCREWS				
				65.65 10133310 8004	REPAIR & MAINT SUPPLIES				
					CHECK 241822 TOTAL:				672.57
241823	10/24/2025	PRTD	3387	MEMORIA FILMS INC	INV-25102	10/13/2025		10242025	5,000.00
Invoice: INV-25102					VIDEO PRODUCTION AND EDITING - STATE OF THE CITY				
				5,000.00 10172000 7872	PUBLIC RELATIONS				
					CHECK 241823 TOTAL:				5,000.00
241824	10/24/2025	PRTD	437	NAI CONSULTING INC	2019-04.66	10/07/2025	20260063	10242025	2,886.50
Invoice: 2019-04.66					CP 14-313: CALTRANS COMPLIANCE PE 9/30/2025				
				2,886.50 10134000 9523	RMN RD ST WID/FR RGT/SND				
					CHECK 241824 TOTAL:				2,886.50
241825	10/24/2025	PRTD	2852	ODP BUSINESS SOLUTIONS, LLC	442605950001	10/14/2025		10242025	39.79
Invoice: 442605950001					COFFEE SUPPLIES				
				39.79 10151000 8000	SUPPLIES				
				ODP BUSINESS SOLUTIONS, LLC	442605939001	10/14/2025		10242025	229.99
Invoice: 442605939001					GLUE, TAPE, HOLDER, PAPER				
				229.99 10151000 8000	SUPPLIES				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				ODP BUSINESS SOLUTIONS, LLC	442605594001	10/14/2025		10242025	178.66
Invoice: 442605594001						CHAIR			
				178.66	10156000 8012	SMALL TOOLS, FURN & EQUIP			
						CHECK	241825 TOTAL:		448.44
241826	10/24/2025	PRTD	99999	LAURIE K DANIELS	NEM20261500	10/07/2025		10242025	164.04
Invoice: NEM20261500						NEM COMP 2024-25			
				164.04	600 2653	NET ENERGY METERING LIABILITY			
						CHECK	241826 TOTAL:		164.04
241827	10/24/2025	PRTD	2666	AUGUSTO GARZA	1535	10/06/2025		10242025	4,750.00
Invoice: 1535						ABATEMENT - SUNNY LN 10/6/2025			
				4,750.00	10123000 7642	ABATEMENTS			
						CHECK	241827 TOTAL:		4,750.00
241828	10/24/2025	PRTD	206	PALM SPRINGS AIR MUSEUM	80645	10/21/2025		10242025	11,500.00
Invoice: 80645						2026 GALA SPONSORSHIP			
				11,500.00	10157000 7872	PUBLIC RELATIONS			
						CHECK	241828 TOTAL:		11,500.00
241829	10/24/2025	PRTD	1812	PETTY CASH-ELIJAH ALEMAN	80656	05/20/2025		10242025	4.64
Invoice: 80656						SUPPLIES FOR CHILDRENS ROOM			
				4.64	24281000 7914	FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80658	05/22/2025		10242025	17.23
Invoice: 80658						SUPPLIES FOR SUMMER READING CLUB			
				17.23					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919	FOUNDATN-LITERARY LEGACY			
				PETTY CASH-ELIJAH ALEMAN	80659	05/29/2025		10242025	28.27
Invoice: 80659						SUPPLIES FOR SUMMER READING CLUB			
				28.27					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919	FOUNDATN-LITERARY LEGACY			
				PETTY CASH-ELIJAH ALEMAN	80660	05/29/2025		10242025	13.31
Invoice: 80660						REFRESHMENTS - CHILDRENS READING CLUB			
				13.31	24281000 7914	FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80661	05/31/2025		10242025	2.61
Invoice: 80661						SUPPLIES FOR SUMMER READING CLUB			
				2.61					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80662	06/02/2025		10242025	10.51
Invoice: 80662					SUPPLIES FOR SUMMER READING CLUB				
				10.51					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80663	06/02/2025		10242025	15.20
Invoice: 80663					SUPPLIES FOR SUMMER READING CLUB				
				15.20					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80664	07/02/2025		10242025	8.95
Invoice: 80664					REFUND - LOST ITEM				
				8.95 242 4226	LOST/DAMAGED ITEMS				
				PETTY CASH-ELIJAH ALEMAN	80665	07/15/2025		10242025	9.97
Invoice: 80665					SUPPLIES FOR SUMMER READING CLUB				
				9.97					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80666	07/15/2025		10242025	16.12
Invoice: 80666					SUPPLIES FOR SUMMER READING CLUB				
				16.12					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80667	07/15/2025		10242025	4.08
Invoice: 80667					SUPPLIES FOR SUMMER READING CLUB				
				4.08					
					E LB_SRC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919 FOUNDATN-LITERARY LEGACY				
				PETTY CASH-ELIJAH ALEMAN	80668	07/18/2025		10242025	1.36
Invoice: 80668					POSTER BOARD				
				1.36 24281000 7891	OBSERVATORY PROGRAMMING				
				PETTY CASH-ELIJAH ALEMAN	80669	07/19/2025		10242025	10.41
Invoice: 80669					BULLETIN BOARD SUPPLIES				
				10.41 24281000 7914	FOUNDATION - READING CLUB				
				PETTY CASH-ELIJAH ALEMAN	80670	07/25/2025		10242025	14.29
Invoice: 80670					BULLETIN BOARD SUPPLIES				
				14.29 24281000 7914	FOUNDATION - READING CLUB				
				PETTY CASH-ELIJAH ALEMAN	80671	08/02/2025		10242025	12.23
Invoice: 80671					BACK TO SCHOOL DECORATIONS				
				12.23 24281000 7914	FOUNDATION - READING CLUB				

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				PETTY CASH-ELIJAH ALEMAN	80672	09/06/2025		10242025	5.99
Invoice: 80672						REFUND - LOST ITEM			
				5.99 242 4226		LOST/DAMAGED ITEMS			
				PETTY CASH-ELIJAH ALEMAN	80673	09/09/2025		10242025	9.48
Invoice: 80673						REFRESHMENTS - BOOK DISCUSSION			
				9.48 24281000 7914		FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80675	09/13/2025		10242025	12.89
Invoice: 80675						SUPPLIES FOR FALL CRAFTS			
				12.89 24281000 7914		FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80676	10/07/2025		10242025	3.23
Invoice: 80676						SUPPLIES FOR CRAFTS			
				3.23 24281000 7914		FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80677	10/04/2025		10242025	1.24
Invoice: 80677						SUPPLIES FOR STEAM READS			
				1.24					
				E LL_STEAM -UNDEFINED -UNDEFINED -UNDEFINED					
				24281000 7919		FOUNDATN-LITERARY LEGACY			
				PETTY CASH-ELIJAH ALEMAN	80678	10/06/2025		10242025	8.98
Invoice: 80678						REFRESHMENTS - BOOK DISCUSSION			
				8.98 24281000 7914		FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80679	10/09/2025		10242025	44.82
Invoice: 80679						REFRESHMENTS - FAMILY NIGHT			
				44.82					
				E LB_FAMNITE-UNDEFINED -UNDEFINED -UNDEFINED					
				24281000 7914		FOUNDATION - READING CLUB			
				PETTY CASH-ELIJAH ALEMAN	80712	08/04/2025		10242025	18.95
Invoice: 80712						DONUTS FOR COPS			
				18.95 10141000 7550		CITY-WIDE COPS PROGRAM			
				PETTY CASH-ELIJAH ALEMAN	80715	08/14/2025		10242025	48.22
Invoice: 80715						EMPLOYEE FUNCTION			
				48.22 10151000 7869		EMPLOYEE EVENTS			
				PETTY CASH-ELIJAH ALEMAN	80716	08/15/2025		10242025	21.05
Invoice: 80716						MAILING FOR FIRE DEPT			
				21.05 10151000 8000		SUPPLIES			
				PETTY CASH-ELIJAH ALEMAN	80717	09/15/2025		10242025	18.00
Invoice: 80717						FILING FEES COUNTY CLERK			
				18.00 10131000 8000		SUPPLIES			
				PETTY CASH-ELIJAH ALEMAN	80719	09/19/2025		10242025	15.77
Invoice: 80719						SLURRY PROJECT - LUNCH			
				15.77 10132000 8024		TRAFFIC CONTROL			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				PETTY CASH-ELIJAH ALEMAN	80720	10/08/2025		10242025	16.00
	Invoice: 80720					OFFICIAL RECORDS COPIES			
				16.00 10131000 8000		SUPPLIES			
						CHECK	241829 TOTAL:		393.80
241830	10/24/2025	PRTD	5	POWERS AWARDS	162339	10/13/2025		10242025	31.73
	Invoice: 162339					NAME BADGE			
				31.73 24281000 8000		SUPPLIES			
				POWERS AWARDS	161991	08/12/2025		10242025	46.95
	Invoice: 161991					NAME BADGES			
				46.95 24281000 8000		SUPPLIES			
						CHECK	241830 TOTAL:		78.68
241831	10/24/2025	PRTD	2767	SAVANT SOLUTIONS, INC	SS-1287	10/15/2025	20260112	10242025	30,075.63
	Invoice: SS-1287					VERKADA ACCESS DOOR CONTROL HARDWARE			
				30,075.63 243 9536		LIBRARY INFRASTRUCTURE			
						CHECK	241831 TOTAL:		30,075.63
241832	10/24/2025	PRTD	131	SOUTH COAST AIR QUALITY	4612584	10/01/2025		10242025	170.94
	Invoice: 4612584					AB2588 AQMD FEE FY25/26-FACILITY ID#106928 (FS#50)			
				170.94 21500500 8700		MISC EXPENDITURE			
				SOUTH COAST AIR QUALITY	4612583	10/01/2025		10242025	170.94
	Invoice: 4612583					AB2588 AQMD FEE FY25/26-FACILITY ID#106927 (FS#69)			
				170.94 21500690 8700		MISC EXPENDITURE			
				SOUTH COAST AIR QUALITY	4612579	10/01/2025		10242025	170.94
	Invoice: 4612579					AB2588 AQMD FEE FY25/26-FACILITY ID#106922 (CH)			
				170.94 10133300 8700		MISC EXPENDITURE			
				SOUTH COAST AIR QUALITY	4610175	10/01/2025		10242025	565.63
	Invoice: 4610175					FS#50 GENERATOR #G50859 - FACILITY ID #106928			
				565.63 21500500 8700		MISC EXPENDITURE			
				SOUTH COAST AIR QUALITY	4610173	10/01/2025		10242025	565.63
	Invoice: 4610173					CITY HALL GENERATOR #G4891 - FACILITY ID #106922			
				565.63 10133300 8700		MISC EXPENDITURE			
				SOUTH COAST AIR QUALITY	4610174	10/01/2025		10242025	565.63
	Invoice: 4610174					FS #69 GENERATOR #G51249 - FACILITY ID #106927			
				565.63 21500690 8700		MISC EXPENDITURE			
						CHECK	241832 TOTAL:		2,209.71

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241833	10/24/2025	PRTD	61	SOUTHERN CALIFORNIA EDISON COMPAN	873210132025	10/16/2025		10242025	65.49
	Invoice: 873210132025					SERVICE PE 10/13/2025 (ACCT #700483708732)			
					-39.67 205 7603	ELECTRICITY			
					-1.04 203 7603	ELECTRICITY			
					106.20 204 7603	ELECTRICITY			
				SOUTHERN CALIFORNIA EDISON COMPAN	371410132025	10/17/2025		10242025	4,844.64
	Invoice: 371410132025					SERVICE PE 10/13/2025 (ACCT #700380343714)			
					4,844.64 10132000 7603	ELECTRICITY			
				SOUTHERN CALIFORNIA EDISON COMPAN	452410132025	10/16/2025		10242025	9,785.97
	Invoice: 452410132025					SERVICE PE 10/14/2025 (ACCT #700275914524)			
					9,785.97 10133300 7603	ELECTRICITY			
				SOUTHERN CALIFORNIA EDISON COMPAN	603510152025	10/20/2025		10242025	2,346.56
	Invoice: 603510152025					SERVICE PE 10/15/2025 (ACCT #700100656035)			
					2,346.56 21500690 7603	ELECTRICITY			
				SOUTHERN CALIFORNIA EDISON COMPAN	593210152025	10/20/2025		10242025	122.90
	Invoice: 593210152025					SERVICE PE 10/15/2025 (ACCT #700310815932)			
					122.90 201 7603	ELECTRICITY			
				SOUTHERN CALIFORNIA EDISON COMPAN	351810132025	10/20/2025		10242025	570.47
	Invoice: 351810132025					SERVICE PE 10/13/2025 (ACCT #700409463518)			
					570.47 201 7603	ELECTRICITY			
						CHECK 241833 TOTAL:			17,736.03
241834	10/24/2025	PRTD	62	SOUTHERN CALIFORNIA GAS COMPANY	2300610152025	10/17/2025		10242025	1,311.65
	Invoice: 2300610152025					SERVICE PE 10/15/2025 (ACCT #051 525 2300 6)			
					1,311.65 10133300 7600	NATURAL GAS			
				SOUTHERN CALIFORNIA GAS COMPANY	0930110152025	10/17/2025		10242025	97.61
	Invoice: 0930110152025					SERVICE PE 10/15/2025 (ACCT #154 326 0930 1)			
					97.61 21500690 7600	NATURAL GAS			
				SOUTHERN CALIFORNIA GAS COMPANY	0338810202025	10/20/2025		10242025	250.54
	Invoice: 0338810202025					SERVICE PE 10/16/2025 (ACCT #066 225 3388 0)			
					250.54 21500500 7600	NATURAL GAS			
						CHECK 241834 TOTAL:			1,659.80
241835	10/24/2025	PRTD	234	DESERT LIMNOLOGISTS INC	10-23815	10/20/2025	20260004	10242025	415.00
	Invoice: 10-23815					WATER FEATURE MAINTENANCE 10/2025			
					415.00 21893000 7612	MAINTENANCE			
				DESERT LIMNOLOGISTS INC	10-23817	10/17/2025	20260004	10242025	150.00
	Invoice: 10-23817					WATER FEATURE MAINTENANCE 10/2025			
					150.00 21895000 7612	MAINTENANCE			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241835 TOTAL:		565.00
241836	10/24/2025	PRTD	233	STATE DISBURSEMENT UNIT	80687	10/22/2025		10242025	126.92
	Invoice: 80687					CHILD SUPPORT PE 10/17/25			
					126.92 101 2260	CHILD SUPPORT			
						CHECK	241836 TOTAL:		126.92
241837	10/24/2025	PRTD	816	BRUCE SWAN	80575	10/15/2025		10242025	540.00
	Invoice: 80575					CLEAN/WAX - BRONZE PLAQUES 10/15/2025			
					540.00 21892000 7612	MAINTENANCE			
				BRUCE SWAN	80578	10/15/2025		10242025	750.00
	Invoice: 80578					CLEAN/WAX - BRONZE PLAQUES 10/15/2025			
					750.00 21893000 7612	MAINTENANCE			
				BRUCE SWAN	80579	10/15/2025		10242025	1,465.00
	Invoice: 80579					CLEAN/WAX - BRONZE PLAQUES/STATUES			
					1,465.00 21895000 7612	MAINTENANCE			
				BRUCE SWAN	80580	10/15/2025		10242025	700.00
	Invoice: 80580					CLEAN/WAX BRONZE PLAQUE - DOG PARK 10/15/2025			
					350.00 21896000 7612	MAINTENANCE			
					350.00 21891000 7612	MAINTENANCE			
						CHECK	241837 TOTAL:		3,455.00
241838	10/24/2025	PRTD	1509	TYLER TECHNOLOGIES INC	045-537897	10/01/2025		10242025	1,535.16
	Invoice: 045-537897					MY CIVIC APPLICATION BUNDLE PW 10/31/26			
					1,535.16 10134000 9527	INFMTION SRV SOFTWRE RPLC			
						CHECK	241838 TOTAL:		1,535.16
241839	10/24/2025	PRTD	68	UNITED WAY OF THE DESERT	80685	10/22/2025		10242025	3.85
	Invoice: 80685					UNITED WAY PE 10/17/25			
					3.85 101 2250	DONATIONS-UNITED WAY			
						CHECK	241839 TOTAL:		3.85
241840	10/24/2025	PRTD	121	UNITED PARCEL SERVICE	0000E405A5395	09/27/2025		10242025	25.00
	Invoice: 0000E405A5395					EXPRESS MAIL 9/27/2025			
					25.00 10151000 8000	SUPPLIES			
				UNITED PARCEL SERVICE	0000E405A5345	08/23/2025		10242025	2.06
	Invoice: 0000E405A5345					EXPRESS MAIL 8/23/2025			
					2.06 10151000 8000	SUPPLIES			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				UNITED PARCEL SERVICE	0000E405A5425	10/18/2025		10242025	2.48
				Invoice: 0000E405A5425		EXPRESS MAIL 10/18/2025			
					2.48 10151000 8000	SUPPLIES			
						CHECK	241840 TOTAL:		29.54
241841	10/24/2025	PRTD	174	VALLEY LOCK & SAFE	196029	10/15/2025		10242025	496.06
				Invoice: 196029		INSTALL LOCK			
					496.06 10133300 7612	MAINTENANCE			
						CHECK	241841 TOTAL:		496.06

NUMBER OF CHECKS 64 *** CASH ACCOUNT TOTAL *** 408,996.81

	COUNT	AMOUNT
TOTAL PRINTED CHECKS	35	182,031.27
TOTAL EFT'S	29	226,965.54

*** GRAND TOTAL *** 408,996.81

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
9135	10/31/2025	EFT	188	JONI D ALMY	80554	10/17/2025		10312025	3,135.60
Invoice: 80554						MEDICAL REIMBURSEMENT 11/2025			
					3,135.60 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9135 TOTAL:		3,135.60
9136	10/31/2025	EFT	1376	AMERICAN FORENSIC NURSES LLC	79818	10/16/2025		10312025	544.00
Invoice: 79818						DUI TESTING PE 10/20/2025			
					544.00 10141000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	9136 TOTAL:		544.00
9137	10/31/2025	EFT	2110	ANNIE SANFILLIPPO	80557	10/17/2025		10312025	1,683.66
Invoice: 80557						MEDICAL REIMBURSEMENT 11/2025			
					1,683.66 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9137 TOTAL:		1,683.66
9138	10/31/2025	EFT	106	DAVID BARRETT	80553	10/17/2025		10312025	2,377.36
Invoice: 80553						MEDICAL REIMBURSEMENT 11/2025			
					2,377.36 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9138 TOTAL:		2,377.36
9139	10/31/2025	EFT	74	RANDAL BYNDER	80570	10/17/2025		10312025	1,693.36
Invoice: 80570						MEDICAL REIMBURSEMENT 11/2025			
					1,693.36 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9139 TOTAL:		1,693.36
9140	10/31/2025	EFT	2860	CHARTER COMMUNICATIONS HOLDINGS,	187879401102125	10/21/2025		10312025	3,517.80
Invoice: 187879401102125						SERVICE PE 11/20/2025 (ACCT # 187879401)			
					3,517.80 10151000 7826	INTERNET ACCESS & SERVICE			
						CHECK	9140 TOTAL:		3,517.80
9141	10/31/2025	EFT	359	NOEL CHICAS	80562	10/17/2025		10312025	2,377.36
Invoice: 80562						MEDICAL REIMBURSEMENT 11/2025			
					2,377.36 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9141 TOTAL:		2,377.36
9142	10/31/2025	EFT	124	LELAND COLE	80566	10/17/2025		10312025	1,698.33
Invoice: 80566						MEDICAL REIMBURSEMENT 11/2025			
					1,698.33 10151000 7200	GROUP INSURANCE-MEDICAL			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9142	TOTAL:	1,698.33
9143	10/31/2025	EFT	2314	CREATIVE LIGHTING & ELECTRICAL ,	4155389	10/21/2025	20260016	10312025	388.00
Invoice: 4155389					388.00 21892000 7612	LIGHTING MAINTENANCE 10/2025 MAINTENANCE			
				CREATIVE LIGHTING & ELECTRICAL ,	4155391	10/21/2025	20260016	10312025	85.00
Invoice: 4155391					85.00 21891000 7612	LIGHTING MAINTENANCE 10/2025 MAINTENANCE			
				CREATIVE LIGHTING & ELECTRICAL ,	4155397	10/21/2025	20260016	10312025	302.00
Invoice: 4155397					302.00 10133300 7612	LIGHTING MAINTENANCE 10/2025 MAINTENANCE			
				CREATIVE LIGHTING & ELECTRICAL ,	4155399	10/21/2025	20260016	10312025	303.00
Invoice: 4155399					303.00 10133310 7612	LIGHTING MAINTENANCE 10/2025 MAINTENANCE			
						CHECK	9143	TOTAL:	1,078.00
9144	10/31/2025	EFT	1929	FARMER BROTHERS CO.	70672221	10/24/2025		10312025	863.25
Invoice: 70672221					863.25 10151000 8000	COFFEE SUPPLIES SUPPLIES			
				FARMER BROTHERS CO.	70672216	10/24/2025		10312025	247.11
Invoice: 70672216					247.11 24281000 8000	COFFEE SUPPLIES SUPPLIES			
						CHECK	9144	TOTAL:	1,110.36
9145	10/31/2025	EFT	547	LETICIA GALLEGOS-GALLARDO	80567	10/17/2025		10312025	1,254.34
Invoice: 80567					1,254.34 10151000 7200	MEDICAL REIMBURSEMENT 11/2025 GROUP INSURANCE-MEDICAL			
						CHECK	9145	TOTAL:	1,254.34
9146	10/31/2025	EFT	2227	GLORIA GRIEGO	80563	10/17/2025		10312025	3,135.60
Invoice: 80563					3,135.60 10151000 7200	MEDICAL REIMBURSEMENT 11/2025 GROUP INSURANCE-MEDICAL			
						CHECK	9146	TOTAL:	3,135.60
9147	10/31/2025	EFT	1663	G DANA HOBART	80565	10/17/2025		10312025	1,019.30
Invoice: 80565					1,019.30 10151000 7200	MEDICAL REIMBURSEMENT 11/2025 GROUP INSURANCE-MEDICAL			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9147 TOTAL:		1,019.30
9148	10/31/2025	EFT	2738	HR GREEN PACIFIC INC	193880	10/13/2025	20260044	10312025	11,246.69
Invoice: 193880						SURVEY/CIVIL ENGINEERING PLAN REVIEW PE 2025			
					11,246.69 10131000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	9148 TOTAL:		11,246.69
9149	10/31/2025	EFT	2864	VALET CLEANERS, INC.	80758	10/25/2025		10312025	291.50
Invoice: 80758						UNIFORM CLEANING PE 10/15/2025			
					291.50 10141000 7550	CITY-WIDE COPS PROGRAM			
						CHECK	9149 TOTAL:		291.50
9150	10/31/2025	EFT	3035	KAILA WAYBRIGHT	80876	10/25/2025		10312025	525.49
Invoice: 80876						REIMB-SUPPLIES FOR EVENTS, DECOR, STEAM, FAM NITE			
					19.18				
					E LL_STEAM -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919	FOUNDATN-LITERARY LEGACY			
					19.30				
					E LB_FAMNITE-UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7914	FOUNDATION - READING CLUB			
					4.99 24281000 7914	FOUNDATION - READING CLUB			
					370.84 24281000 7910	FOUNDATION - PROGRAMS			
					111.18 10157000 7875	CULTURAL SPECIAL EVENTS			
						CHECK	9150 TOTAL:		525.49
9151	10/31/2025	EFT	1578	RICHARD KITE	80569	10/17/2025		10312025	1,019.30
Invoice: 80569						MEDICAL REIMBURSEMENT 11/2025			
					1,019.30 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9151 TOTAL:		1,019.30
9152	10/31/2025	EFT	238	BERNARD B. KOPP	80558	10/17/2025		10312025	776.42
Invoice: 80558						MEDICAL REIMBURSEMENT 11/2025			
					776.42 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9152 TOTAL:		776.42
9153	10/31/2025	EFT	3228	MACMILLAN HOLDINGS LLC	MSBMEFR013026-A	10/14/2025		10312025	10,000.00
Invoice: MSBMEFR013026-A						2026 RMWF DEPOSIT - M GATES			
					10,000.00 244 7910	FOUNDATION - PROGRAMS			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9153	TOTAL:	10,000.00
9154	10/31/2025	EFT	127	DAVID MARTIN	80556	10/17/2025		10312025	2,377.36
	Invoice: 80556					MEDICAL REIMBURSEMENT 11/2025			
					2,377.36 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9154	TOTAL:	2,377.36
9155	10/31/2025	EFT	1295	MICHAEL BAKER INTERNATIONAL INC	1264966	10/23/2025	20260053	10312025	12,789.60
	Invoice: 1264966					CP 25-401: SOLAR - CITY HALL PE 9/28/2025			
					12,789.60 600 7426	SUSTAINABILITY REBATES & PRGRM			
				MICHAEL BAKER INTERNATIONAL INC	1264741	10/22/2025	20260052	10312025	20,851.70
	Invoice: 1264741					PUBLIC PARKING LOT IMPROVEMENTS PE 9/28/2025			
					20,851.70 10134000 9003	PUBLIC PARKING LOT IMPROVEMENT			
						CHECK	9155	TOTAL:	33,641.30
9156	10/31/2025	EFT	1317	MISSION LINEN SUPPLY	524835264	10/23/2025	20260009	10312025	39.66
	Invoice: 524835264					BI-WEEKLY RENTAL SERVICE			
					39.66 10133300 8002	EQUIPMENT RENTAL			
				MISSION LINEN SUPPLY	524839150	10/24/2025	20260009	10312025	35.00
	Invoice: 524839150					BI-WEEKLY RENTAL SERVICE			
					35.00 21500690 8002	EQUIPMENT RENTAL			
				MISSION LINEN SUPPLY	524839152	10/24/2025	20260009	10312025	41.00
	Invoice: 524839152					BI-WEEKLY RENTAL SERVICE			
					41.00 21500500 8002	EQUIPMENT RENTAL			
				MISSION LINEN SUPPLY	524839157	10/24/2025	20260009	10312025	30.00
	Invoice: 524839157					BI-WEEKLY RENTAL SERVICE			
					30.00 24281000 8002	EQUIPMENT RENTAL			
				MISSION LINEN SUPPLY	524839151	10/24/2025	20260009	10312025	54.00
	Invoice: 524839151					BI-WEEKLY RENTAL SERVICE			
					54.00 10133300 8002	EQUIPMENT RENTAL			
						CHECK	9156	TOTAL:	199.66
9157	10/31/2025	EFT	133	SYLVIA NINO	80547	10/17/2025		10312025	1,019.30
	Invoice: 80547					MEDICAL REIMBURSEMENT 11/2025			
					1,019.30 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9157	TOTAL:	1,019.30

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
9158	10/31/2025	EFT	295	OVERDRIVE INC	01187CO25330066	10/23/2025		10312025	2,076.47
	Invoice: 01187CO25330066				EBOOKS & AUDIOBOOKS				
				2,076.47	E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25327985	10/21/2025		10312025	307.99
	Invoice: 01187DA25327985				EBOOKS & AUDIOBOOKS				
				307.99	E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25328112	10/21/2025		10312025	13.48
	Invoice: 01187DA25328112				EBOOKS				
				13.48	E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187CO25328786	10/22/2025		10312025	1,390.05
	Invoice: 01187CO25328786				EBOOKS & AUDIOBOOKS				
				1,390.05	E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
				OVERDRIVE INC	01187DA25334610	10/28/2025		10312025	74.99
	Invoice: 01187DA25334610				AUDIOBOOKS				
				74.99	E LB_ELECT -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7912 FOUNDATION - COLLECTION				
					CHECK 9158 TOTAL:				3,862.98
9159	10/31/2025	EFT	1808	PATRICK PRATT	80552	10/17/2025		10312025	1,679.15
	Invoice: 80552				MEDICAL REIMBURSEMENT 11/2025				
				1,679.15	10151000 7200 GROUP INSURANCE-MEDICAL				
					CHECK 9159 TOTAL:				1,679.15
9160	10/31/2025	EFT	2086	PHOTOBOOTH SUPPLY CO	D13601	09/22/2025	20260118	10312025	7,541.42
	Invoice: D13601				PURCHASE OF PHOTOBOOTH				
				7,541.42	24281000 8900 FURNITURE & EQUIPMENT				
					CHECK 9160 TOTAL:				7,541.42
9161	10/31/2025	EFT	728	FIRE PROTECTION SERVICE CORPORATI	7313279	10/21/2025		10312025	320.47
	Invoice: 7313279				MONITORING SERVICE PE 10/21/2025				
				320.47	21892000 7612 MAINTENANCE				

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9161 TOTAL:		320.47
9162	10/31/2025	EFT	728	FIRE PROTECTION SERVICE CORPORATI	5350124	10/15/2024	10312025		476.11
	Invoice: 5350124				476.11 24281000 7612	INSTALL WIRELESS RECEIVER & PANIC BUTTONS MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	5776091	01/09/2025	10312025		330.00
	Invoice: 5776091				330.00 24281000 7612	ANNUAL FIRE ALARM INSPECTION - OBSERVATORY MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	5776089	01/09/2025	10312025		330.00
	Invoice: 5776089				330.00 24281000 8000	ANNUAL FIRE ALARM INSPECTION - LIBRARY SUPPLIES			
				FIRE PROTECTION SERVICE CORPORATI	6843493	07/30/2025	10312025		214.01
	Invoice: 6843493				214.01 24281000 7612	INSTALL PANIC BUTTONS MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	6944349	09/01/2025	10312025		264.34
	Invoice: 6944349				264.34 24281000 7612	MONITORING SERVICE 9/2025 MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	5902917	01/24/2025	10312025		392.17
	Invoice: 5902917				392.17 24281000 7612	REPLACE FIRE SYSTEM BELL MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	6843473	07/30/2025	10312025		32.76
	Invoice: 6843473				32.76 24281000 7612	REPLACE AES RADIO BATTERY MAINTENANCE			
				FIRE PROTECTION SERVICE CORPORATI	7323486	10/24/2025	10312025		214.44
	Invoice: 7323486				214.44 24282000 7613	BATTERY REPLACEMENT - OBSERVATORY OBSERVATORY MAINTENANCE			
						CHECK	9162 TOTAL:		2,253.83
9163	10/31/2025	EFT	934	MATTHEW REYNOLDS	80723	10/17/2025	10312025		180.00
	Invoice: 80723				180.00 10132000 7806	MEAL REIMB - APWA CERT PROGRAM MEETINGS/TRAINING/TRAVEL			
						CHECK	9163 TOTAL:		180.00
9164	10/31/2025	EFT	2790	RICHARD GRIMALDO	80722	10/20/2025	10312025		294.00
	Invoice: 80722				294.00 10133000 7806	EXP REIMB - PW INSTITUTE MEETING MEETINGS/TRAINING/TRAVEL			
				RICHARD GRIMALDO	80769	10/28/2025	10312025		333.57
	Invoice: 80769				333.57 10133000 7806	REIM - LUNCH STAFF FIRST RESPONDERS DAY 10/27/2025 MEETINGS/TRAINING/TRAVEL			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9164	TOTAL:	627.57
9165	10/31/2025	EFT	2080	ROGER MANNING	80564	10/17/2025		10312025	3,135.60
	Invoice: 80564					MEDICAL REIMBURSEMENT 11/2025			
					3,135.60 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9165	TOTAL:	3,135.60
9166	10/31/2025	EFT	1810	RON HALL	80555	10/17/2025		10312025	776.42
	Invoice: 80555					MEDICAL REIMBURSEMENT 11/2025			
					776.42 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9166	TOTAL:	776.42
9167	10/31/2025	EFT	3178	RUBBERIZED CRACKFILLER SEALANT IN	1412	06/30/2025	20260116	10312025	15,515.90
	Invoice: 1412					CP 25-396: CITYWIDE CRACK SEAL 2025			
					16,332.53 236 9525	RUBBZD CRCK SEALNG STRTS			
					-816.63 101 2050	RETENTION PAYABLE			
						CHECK	9167	TOTAL:	15,515.90
9168	10/31/2025	EFT	626	JUSTIN RUBERG	80725	10/23/2025		10312025	234.00
	Invoice: 80725					EXP REIMB - PW INSTITUTE MEETING			
					234.00 10132000 7806	MEETINGS/TRAINING/TRAVEL			
						CHECK	9168	TOTAL:	234.00
9169	10/31/2025	EFT	2423	MICHAEL SCHLANGE	80560	10/17/2025		10312025	2,339.00
	Invoice: 80560					MEDICAL REIMBURSEMENT 11/2025			
					2,339.00 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9169	TOTAL:	2,339.00
9170	10/31/2025	EFT	195	SHIRLEY NYEKI	80568	10/17/2025		10312025	1,683.66
	Invoice: 80568					MEDICAL REIMBURSEMENT 11/2025			
					1,683.66 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9170	TOTAL:	1,683.66
9171	10/31/2025	EFT	1897	SHORT EDITION	2130	08/27/2025		10312025	4,968.00
	Invoice: 2130					SHORT STORY KIOSKS FY 2025/2026			
					4,968.00 244 7639	COMPUTER MAINTENANCE			

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CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9171 TOTAL:		4,968.00
9172	10/31/2025	EFT	2528	CAUPAIN LLC	80800	10/23/2025		10312025	4,708.68
Invoice: 80800						GINGERBREAD HOUSES FOR GINGERBREAD EVENT 11/21/25			
					4,708.68 24281000 7919	FOUNDATN-LITERARY LEGACY			
						CHECK	9172 TOTAL:		4,708.68
9173	10/31/2025	EFT	317	SIGNATURE PARTY RENTALS, LLC	452932	10/27/2025		10312025	4,858.20
Invoice: 452932						AMPHITHEATER RENTALS 10/23/2025			
					4,858.20 10172000 7494	AMPHITHEATER PROGRAMMING			
						CHECK	9173 TOTAL:		4,858.20
9174	10/31/2025	EFT	332	IRIS SMOTRICH	80561	10/17/2025		10312025	1,019.30
Invoice: 80561						MEDICAL REIMBURSEMENT 11/2025			
					1,019.30 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9174 TOTAL:		1,019.30
9175	10/31/2025	EFT	2751	SOLOMON N NIMAKO	104	10/10/2025	20260066	10312025	7,480.00
Invoice: 104						GIS PARCEL/FIELD MAP UPDATES (AUG & SEPT 2025)			
					7,480.00 10156000 7400	PROFESSIONAL/TECHNICAL			
						CHECK	9175 TOTAL:		7,480.00
9176	10/31/2025	EFT	542	CHARLES TOWNSEND VINCI	80559	10/17/2025		10312025	1,019.30
Invoice: 80559						MEDICAL REIMBURSEMENT 11/2025			
					1,019.30 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9176 TOTAL:		1,019.30
9177	10/31/2025	EFT	3350	UNIVERSAL CONSTRUCTION AND ENGINE	2513-2	09/30/2025	20260096	10312025	809,038.65
Invoice: 2513-2						CP 22-378:PUBLIC PARKING IMPROVEMENTS PE 9/30/2025			
					851,619.63 10134000 9003	PUBLIC PARKING LOT IMPROVEMENT			
					-42,580.98 101 2050	RETENTION PAYABLE			
						CHECK	9177 TOTAL:		809,038.65
9178	10/31/2025	EFT	2244	U.S. BANK CORPORATE PAYMENT SYSTE	6960 PE 10222025	10/22/2025		10312025	53,787.40
Invoice: 6960 PE 10222025						CC 6960 PE 10/22/2025			
					53,787.40 242 2011	CAL CARD - US BANK			
				U.S. BANK CORPORATE PAYMENT SYSTE	467024 090925	10/22/2025		10312025	84.00
Invoice: 467024 090925						SERVICE PE 09/09/25			

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					84.00 10133310 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	467214 090825	10/22/2025		10312025	155.50
				Invoice: 467214 090825				SERVICE PE 09/08/25	
					155.50 10133310 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	528640 091125	10/22/2025		10312025	59.52
				Invoice: 528640 091125				SERVICE PE 09/11/25	
					59.52 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	759442 091025	10/22/2025		10312025	45.74
				Invoice: 759442 091025				SERVICE PE 09/10/25	
					45.74 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	759854 090825	10/22/2025		10312025	86.99
				Invoice: 759854 090825				SERVICE PE 09/08/25	
					86.99 10133310 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	777460 091225	10/22/2025		10312025	578.15
				Invoice: 777460 091225				SERVICE PE 09/12/25	
					578.15 10133300 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	843102 090925	10/22/2025		10312025	26.78
				Invoice: 843102 090925				SERVICE PE 09/09/25	
					26.78 10133310 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	845202 090825	10/22/2025		10312025	93.34
				Invoice: 845202 090825				SERVICE PE 09/08/25	
					93.34 10133310 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	846450 091125	10/22/2025		10312025	77.20
				Invoice: 846450 091125				SERVICE PE 09/11/25	
					77.20 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	847568 091125	10/22/2025		10312025	45.74
				Invoice: 847568 091125				SERVICE PE 09/11/25	
					45.74 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	847570 091125	10/22/2025		10312025	74.30
				Invoice: 847570 091125				SERVICE PE 09/11/25	
					74.30 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	849270 091725	10/22/2025		10312025	217.96
				Invoice: 849270 091725				SERVICE PE 09/17/25	
					217.96 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	849722 091625	10/22/2025		10312025	995.00
				Invoice: 849722 091625				SERVICE PE 09/16/25	
					995.00 21892000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	847620 090425	10/22/2025		10312025	72.94
				Invoice: 847620 090425				SERVICE PE 09/04/25	

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					72.94 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	531358 091225	10/22/2025		10312025	14.23
				Invoice: 531358 091225				SERVICE PE 09/12/25	
					14.23 21500690 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	760018 091225	10/22/2025		10312025	115.82
				Invoice: 760018 091225				SERVICE PE 09/12/25	
					115.82 21500690 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	531028 091225	10/22/2025		10312025	111.20
				Invoice: 531028 091225				SERVICE PE 09/12/25	
					111.20 207 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	844474 091225	10/22/2025		10312025	222.54
				Invoice: 844474 091225				SERVICE PE 09/12/25	
					222.54 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	571692 091625	10/22/2025		10312025	40.65
				Invoice: 571692 091625				SERVICE PE 09/16/25	
					40.65 21892000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	567870 091625	10/22/2025		10312025	181.10
				Invoice: 567870 091625				SERVICE PE 09/16/25	
					181.10 21892000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	861254 090425	10/22/2025		10312025	344.74
				Invoice: 861254 090425				SERVICE PE 09/04/25	
					344.74 21891000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	861264 090425	10/22/2025		10312025	30.86
				Invoice: 861264 090425				SERVICE PE 09/04/25	
					30.86 21891000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	888040 091225	10/22/2025		10312025	132.96
				Invoice: 888040 091225				SERVICE PE 09/12/25	
					132.96 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	582266 091125	10/22/2025		10312025	70.77
				Invoice: 582266 091125				SERVICE PE 09/11/25	
					70.77 21893000 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	568180 091725	10/22/2025		10312025	211.55
				Invoice: 568180 091725				SERVICE PE 09/17/25	
					211.55 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	531778 091225	10/22/2025		10312025	67.68
				Invoice: 531778 091225				SERVICE PE 09/12/25	
					67.68 201 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	567920 091625	10/22/2025		10312025	83.71
				Invoice: 567920 091625				SERVICE PE 09/16/25	

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
					83.71 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	567916 091625	10/22/2025		10312025	83.71
				Invoice: 567916 091625		SERVICE PE 09/16/25			
					83.71 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	567912 091625	10/22/2025		10312025	80.70
				Invoice: 567912 091625		SERVICE PE 09/16/25			
					80.70 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	567910 091625	10/22/2025		10312025	80.70
				Invoice: 567910 091625		SERVICE PE 09/16/25			
					80.70 10133320 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	847826 091525	10/22/2025		10312025	10,344.77
				Invoice: 847826 091525		SERVICE PE 09/15/25			
					4,728.68 201 7606 WATER				
					264.30 10133320 7606 WATER				
					2,594.53 10133300 7606 WATER				
					1,298.76 21893000 7606 WATER				
					897.12 21500690 7606 WATER				
					188.54 202 7606 WATER				
					319.28 205 7606 WATER				
					53.56 204 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	847828 091925	10/22/2025		10312025	1,755.29
				Invoice: 847828 091925		SERVICE PE 09/19/25			
					1,084.03 201 7606 WATER				
					408.18 10133320 7606 WATER				
					211.90 21500500 7606 WATER				
					51.18 203 7606 WATER				
				U.S. BANK CORPORATE PAYMENT SYSTE	9534 PE 102225	10/22/2025		10312025	34,923.73
				Invoice: 9534 PE 102225		ACCT# 9534 PE 10/22/25			
					34,923.73 101 2011 CAL CARD - US BANK				
				U.S. BANK CORPORATE PAYMENT SYSTE	5829 PE 102225	10/22/2025		10312025	9,280.98
				Invoice: 5829 PE 102225		ACCT# 5829 PE 10/22/25			
					9,280.98 101 2011 CAL CARD - US BANK				
				U.S. BANK CORPORATE PAYMENT SYSTE	0671 PE 102225	10/22/2025		10312025	24,965.68
				Invoice: 0671 PE 102225		ACCT# 0671 PE 10/22/25			
					24,965.68 101 2011 CAL CARD - US BANK				
							CHECK	9178 TOTAL:	139,543.93
9179	10/31/2025	EFT	1674	RANDALL J. VIEGAS	80549	10/17/2025		10312025	1,094.45
	Invoice: 80549					MEDICAL REIMBURSEMENT 11/2025			
					1,094.45 10151000 7200 GROUP INSURANCE-MEDICAL				

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CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	9179	TOTAL:	1,094.45
9180	10/31/2025	EFT	2889	VINTAGE ASSOCIATES INC	238671	10/23/2025	20260100	10312025	280.00
	Invoice: 238671					LANDSCAPE MAINTENANCE - AMPHITHEATRE 10/22/2026			
					280.00 21892000 7612	MAINTENANCE			
						CHECK	9180	TOTAL:	280.00
9181	10/31/2025	EFT	313	TROY WILSON	80550	10/17/2025		10312025	776.42
	Invoice: 80550					MEDICAL REIMBURSEMENT 11/2025			
					776.42 10151000 7200	GROUP INSURANCE-MEDICAL			
						CHECK	9181	TOTAL:	776.42
241842	10/31/2025	PRTD	3222	ABD OFFICE MACHINES INC	ABD25100017	10/15/2025	20260077	10312025	1,379.57
	Invoice: ABD25100017					PRINTER MAINTENANCE 10/2025			
					1,379.57 10156000 8000	SUPPLIES			
						CHECK	241842	TOTAL:	1,379.57
241843	10/31/2025	PRTD	3077	ALLIED PAVING CO	25-0424-03	07/17/2025	20260084	10312025	17,955.00
	Invoice: 25-0424-03					CP 23-394: CLASS II BIKE LANE EXTENSIONS			
					18,900.00 10134000 9535	BIKE&PED CONNECT/SAFETY IMP			
					-945.00 101 2050	RETENTION PAYABLE			
						CHECK	241843	TOTAL:	17,955.00
241844	10/31/2025	PRTD	2888	UNIVERSAL BUILDING MAINTENANCE, L	17666854	10/31/2025	20260111	10312025	200.00
	Invoice: 17666854					JANITORIAL SERVICES 10/2025			
					200.00 10172000 7494	AMPHITHEATER PROGRAMMING			
				UNIVERSAL BUILDING MAINTENANCE, L	17666853	10/31/2025	20260111	10312025	87.50
	Invoice: 17666853					JANITORIAL SERVICES 10/2025			
					87.50 10172000 7494	AMPHITHEATER PROGRAMMING			
				UNIVERSAL BUILDING MAINTENANCE, L	17666850	10/31/2025	20260111	10312025	100.00
	Invoice: 17666850					JANITORIAL SERVICES 10/2/2025			
					100.00 10172000 7494	AMPHITHEATER PROGRAMMING			
				UNIVERSAL BUILDING MAINTENANCE, L	17703332	10/30/2025	20260111	10312025	200.00
	Invoice: 17703332					JANITORIAL SERVICES 10/2025			
					200.00 10172000 7494	AMPHITHEATER PROGRAMMING			
				UNIVERSAL BUILDING MAINTENANCE, L	17703333	10/30/2025	20260111	10312025	200.00
	Invoice: 17703333					JANITORIAL SERVICES 10/2025			
					200.00 10172000 7494	AMPHITHEATER PROGRAMMING			

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
				UNIVERSAL BUILDING MAINTENANCE, L	17703334	10/30/2025	20260111	10312025	337.50
	Invoice: 17703334					JANITORIAL SERVICES 10/2025			
					337.50 10172000 7494	AMPHITHEATER PROGRAMMING			
						CHECK	241844 TOTAL:		1,125.00
241845	10/31/2025	PRTD	1851	AMSTERDAM PRINTING & LITHO	7943027	10/22/2025	20260119	10312025	16,693.87
	Invoice: 7943027					2026 RMWF JOURNALS & PENS			
					16,693.87 244 7887	SPECIAL EVENTS			
						CHECK	241845 TOTAL:		16,693.87
241846	10/31/2025	PRTD	395	AT&T	590257	10/16/2025		10312025	575.00
	Invoice: 590257					SERVICE PE 10/14/2025			
					575.00 10141000 8000	SUPPLIES			
				AT&T	590288	10/16/2025		10312025	1,050.00
	Invoice: 590288					SERVICE PE 10/14/2025			
					1,050.00 10141000 8000	SUPPLIES			
				AT&T	588572	10/08/2025		10312025	325.00
	Invoice: 588572					SERVICE PE 10/7/2025			
					325.00 10141000 8000	SUPPLIES			
						CHECK	241846 TOTAL:		1,950.00
241847	10/31/2025	PRTD	1297	AUTOZONE, INC	06227926883	10/22/2025		10312025	22.00
	Invoice: 06227926883					BATTERY FOR UTILITY CART			
					22.00 21892000 8004	REPAIR & MAINT SUPPLIES			
				AUTOZONE, INC	0622793548	10/27/2025		10312025	36.60
	Invoice: 0622793548					UTILITY CART REPAIR			
					36.60 21892000 8004	REPAIR & MAINT SUPPLIES			
						CHECK	241847 TOTAL:		58.60
241848	10/31/2025	PRTD	3288	BERNARD EPPS JR	80867	10/29/2025		10312025	250.00
	Invoice: 80867					HONORARIUM - ALL IN THE BRITISH FAMILY 11/14/2025			
					250.00				
					E LL_FILM -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7919	FOUNDATN-LITERARY LEGACY			
						CHECK	241848 TOTAL:		250.00
241849	10/31/2025	PRTD	3288	BERNARD EPPS JR	80869	10/29/2025		10312025	250.00
	Invoice: 80869					HONORARIUM - ALL IN THE BRITISH FAMILY 11/21/2025			
					250.00				

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
				E LL_FILM -UNDEFINED -UNDEFINED -UNDEFINED					
				24281000 7919 FOUNDATN-LITERARY LEGACY					
							CHECK	241849 TOTAL:	250.00
241850	10/31/2025	PRTD	115	BIGHORN INSTITUTE	80763	10/01/2025	20260115	10312025	6,250.00
	Invoice: 80763					CONTRACT SERVICES Q1 FY 2025/2026			
				6,250.00 10151000 7400 PROFESSIONAL/TECHNICAL					
							CHECK	241850 TOTAL:	6,250.00
241851	10/31/2025	PRTD	13	COACHELLA VALLEY WATER DISTRICT	56772210162025	10/20/2025		10312025	724.95
	Invoice: 56772210162025					SERVICE PE 10/16/2025			
				724.95 24281000 7606 WATER					
				COACHELLA VALLEY WATER DISTRICT	75844810162025	10/20/2025		10312025	40.65
	Invoice: 75844810162025					SERVICE PE 10/16/2025			
				40.65 24281000 7606 WATER					
							CHECK	241851 TOTAL:	765.60
241852	10/31/2025	PRTD	85	CONSOLIDATED ELECTRICAL DISTRIBUT	5725-1175565	10/23/2025		10312025	70.38
	Invoice: 5725-1175565					ELECTRICAL SUPPLIES			
				70.38 201 8004 REPAIR & MAINT SUPPLIES					
							CHECK	241852 TOTAL:	70.38
241853	10/31/2025	PRTD	1628	EISENHOWER MEDICAL CENTER	80777	09/29/2025		10312025	400.00
	Invoice: 80777					ACCT #700000134 (S251640021) SVC PE 7/19/2025			
				400.00 10141000 7400 PROFESSIONAL/TECHNICAL					
							CHECK	241853 TOTAL:	400.00
241854	10/31/2025	PRTD	403	EMCOR SERVICE	910075643	10/24/2025	20260014	10312025	730.40
	Invoice: 910075643					HVAC MAINTENANCE PE 10/24/25			
				730.40 21500690 7612 MAINTENANCE					
							CHECK	241854 TOTAL:	730.40
241855	10/31/2025	PRTD	2502	EPLUS TECHNOLOGY, INC	V3025695	10/15/2025		10312025	4,132.50
	Invoice: V3025695					INFORMACAST FUSION SOFTWARE			
				4,132.50 10156000 7639 COMPUTER MAINTENANCE					
							CHECK	241855 TOTAL:	4,132.50

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
241856	10/31/2025	PRTD	3394	FRANCESCA L AMARI SAJTAR	80875	10/29/2025		10312025	1,500.00
Invoice: 80875						HONORARIUM - PONYTAILS, CHIFFON & SHANGRI-LA 11/19			
				1,500.00 10157000 7875		CULTURAL SPECIAL EVENTS			
						CHECK	241856 TOTAL:		1,500.00
241857	10/31/2025	PRTD	1797	CAPPUCCINO CONNECTION	929522	10/23/2025		10312025	1,266.30
Invoice: 929522						BUSINESS CARDS			
				1,266.30 10154000 8000		SUPPLIES			
						CHECK	241857 TOTAL:		1,266.30
241858	10/31/2025	PRTD	2852	ODP BUSINESS SOLUTIONS, LLC	443036908001	10/21/2025		10312025	223.57
Invoice: 443036908001						COFFEE SUPPLIES			
				223.57 24281000 8000		SUPPLIES			
				ODP BUSINESS SOLUTIONS, LLC	443052527001	10/21/2025		10312025	6.45
Invoice: 443052527001						GLUE			
				6.45 24281000 8000		SUPPLIES			
						CHECK	241858 TOTAL:		230.02
241859	10/31/2025	PRTD	99999	BRIAN ZINNI	NEM20260749	10/08/2025		10312025	150.07
Invoice: NEM20260749						NEM ESCROW PAY OUT 2024-25			
				150.07 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241859 TOTAL:		150.07
241860	10/31/2025	PRTD	99999	HOFFMAN YANN BUILDERS INC	62801	10/27/2025		10312025	2,000.00
Invoice: 62801						REFUND DUST CONTROL DEPOSIT (E2100188)			
				2,000.00 702 2415		DUST CONTROL DEPOSIT			
						CHECK	241860 TOTAL:		2,000.00
241861	10/31/2025	PRTD	99999	PEDRO CASTRO	NEM20260817	10/08/2025		10312025	117.57
Invoice: NEM20260817						NEM ESCROW PAY OUT 2024-25			
				117.57 600 2653		NET ENERGY METERING LIABILITY			
						CHECK	241861 TOTAL:		117.57
241862	10/31/2025	PRTD	423	PATTON ENTERPRISES INC.	101766	10/24/2025		10312025	344.40
Invoice: 101766						GATE SERVICE			
				344.40 21500690 7612		MAINTENANCE			

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
						CHECK	241862 TOTAL:		344.40
241863	10/31/2025	PRTD	1812	PETTY CASH-ELIJAH ALEMAN	80713	08/13/2025		10312025	46.20
	Invoice: 80713					MIILEAGE REIMB - J. GUERRA			
					46.20 10112000 7800	MILEAGE			
				PETTY CASH-ELIJAH ALEMAN	80714	08/14/2025		10312025	32.69
	Invoice: 80714					MILEAGE REIMB - Y. AMADOR			
					32.69 10154000 7800	MILEAGE			
				PETTY CASH-ELIJAH ALEMAN	80718	09/30/2025		10312025	46.20
	Invoice: 80718					MILEAGE REIMB - J. GUERRA			
					46.20 10112000 7800	MILEAGE			
						CHECK	241863 TOTAL:		125.09
241864	10/31/2025	PRTD	2120	STEVEN K SALMACIA	17544	10/22/2025		10312025	450.00
	Invoice: 17544					PIANO TUNING PE 10/22/2025			
					450.00				
					E LB_MUSIC -UNDEFINED -UNDEFINED -UNDEFINED				
					24281000 7910	FOUNDATION - PROGRAMS			
						CHECK	241864 TOTAL:		450.00
241865	10/31/2025	PRTD	181	PLANT MASTERS INC	00012225	10/31/2025		10312025	175.00
	Invoice: 00012225					PLANT MAINTENANCE 10/2025			
					175.00 24281000 7612	MAINTENANCE			
						CHECK	241865 TOTAL:		175.00
241866	10/31/2025	PRTD	5	POWERS AWARDS	162493	10/22/2025		10312025	56.41
	Invoice: 162493					NAME PLATES			
					56.41 10151000 8000	SUPPLIES			
				POWERS AWARDS	162440	10/22/2025		10312025	81.75
	Invoice: 162440					NAME PLATES			
					81.75 10151000 8000	SUPPLIES			
						CHECK	241866 TOTAL:		138.16
241867	10/31/2025	PRTD	49	THE PRINTING PLACE	251435	10/27/2025		10312025	523.67
	Invoice: 251435					ENVELOPES			
					523.67 10151000 8000	SUPPLIES			
						CHECK	241867 TOTAL:		523.67

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
				INVOICE DTL DESC					
241868	10/31/2025	PRTD	1926	PROPER SOLUTIONS	17627	10/17/2025		10312025	1,366.20
Invoice: 17627						M COVARRUBIAS PE 10/22/2025			
				1,366.20 10133000 7444		TEMPORARY AGENCY SERVICES			
						CHECK	241868 TOTAL:		1,366.20
241869	10/31/2025	PRTD	3226	RASPIN STUWART MUSIC PUBLISHING L	80866	10/29/2025		10312025	1,000.00
Invoice: 80866						HONORARIUM - THE ELDERMAN 11/5/2025			
				1,000.00					
				E LB_BARTUSH-UNDEFINED -UNDEFINED -UNDEFINED					
				24281000 7919		FOUNDATN-LITERARY LEGACY			
						CHECK	241869 TOTAL:		1,000.00
241870	10/31/2025	PRTD	2680	RENEGADE PEST CONTROL INC	48180	10/20/2025		10312025	150.00
Invoice: 48180						PEST CONTROL - FS #69			
				150.00 21500690 7612		MAINTENANCE			
						CHECK	241870 TOTAL:		150.00
241871	10/31/2025	PRTD	147	RIVERSIDE COUNTY SHERIFFS DEPT	SH0000049175	10/17/2025		10312025	919,844.26
Invoice: SH0000049175						LAW ENFORCEMENT BP #3 PE 9/17/2025			
				919,844.26 10141000 7404		SHERIFF SERVICES			
						CHECK	241871 TOTAL:		919,844.26
241872	10/31/2025	PRTD	2438	SHANNON BUSH	80868	10/29/2025		10312025	250.00
Invoice: 80868						HONORARIUM - PLANT BASED COOKING 11/20/2025			
				250.00					
				E LL_LECTURE-UNDEFINED -UNDEFINED -UNDEFINED					
				24281000 7919		FOUNDATN-LITERARY LEGACY			
						CHECK	241872 TOTAL:		250.00
241873	10/31/2025	PRTD	1588	SHASTA FIRE PROTECTION INC	9673	10/24/2025		10312025	500.00
Invoice: 9673						ANNUAL FIRE HYDRANT INSPECTION-CITY YARD 10/24/25			
				500.00 10133310 7612		MAINTENANCE			
						CHECK	241873 TOTAL:		500.00
241874	10/31/2025	PRTD	62	SOUTHERN CALIFORNIA GAS COMPANY	6818710162025	10/20/2025		10312025	894.57
Invoice: 6818710162025						SERVICE PE 10/16/2025			
				894.57 24281000 7600		NATURAL GAS			

A/P CASH DISBURSEMENTS JOURNAL

CASH ACCOUNT: 999 1005 CHECKING

CHECK NO	CHK DATE	TYPE	VENDOR	NAME	INVOICE	INV DATE	PO	CHECK RUN	NET
					INVOICE DTL DESC				
							CHECK	241874 TOTAL:	894.57
241875	10/31/2025	PRTD	3393	TIMOTHY CAMPONESCHI	80874	10/29/2025		10312025	2,000.00
	Invoice: 80874					HONORARIUM - SLIM MAN BAND			
					2,000.00	E LL_MUSIC -UNDEFINED -UNDEFINED -UNDEFINED			
						24281000 7919 FOUNDATN-LITERARY LEGACY			
							CHECK	241875 TOTAL:	2,000.00
241876	10/31/2025	PRTD	1509	TYLER TECHNOLOGIES INC	045-438758	10/01/2025		10312025	1,392.44
	Invoice: 045-438758					MY CIVIC APPLICATION BUNDLE PE 2024			
					1,392.44	10156000 7639 COMPUTER MAINTENANCE			
				TYLER TECHNOLOGIES INC	045-485427	10/01/2025		10312025	1,462.06
	Invoice: 045-485427					MY CIVIC APPLICATION BUNDLE PE 2025			
					1,462.06	10156000 7639 COMPUTER MAINTENANCE			
				TYLER TECHNOLOGIES INC	045-515900	05/01/2025		10312025	11,759.47
	Invoice: 045-515900					PACE 10 TRAINING PE 2026			
					11,759.47	10156000 7639 COMPUTER MAINTENANCE			
				TYLER TECHNOLOGIES INC	045-525857	07/01/2025		10312025	581.85
	Invoice: 045-525857					PAYMENTS PCI SERVICE FEE PE 7/31/2026			
					581.85	10156000 7639 COMPUTER MAINTENANCE			
							CHECK	241876 TOTAL:	15,195.82
241877	10/31/2025	PRTD	455	WALMART SUPERCENTER	80860	10/27/2025		10312025	840.00
	Invoice: 80860					"SHOP WITH A COP" PROGRAM FOR 2025 HOLIDAY SEASON			
					840.00	10141000 7400 PROFESSIONAL/TECHNICAL			
							CHECK	241877 TOTAL:	840.00

NUMBER OF CHECKS 83 *** CASH ACCOUNT TOTAL *** 2,101,731.07

	COUNT	AMOUNT
TOTAL PRINTED CHECKS	36	1,001,072.05
TOTAL EFT'S	47	1,100,659.02

*** GRAND TOTAL *** 2,101,731.07

City Council Staff Report

Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) – Applicant: Farhad Zomorodi. Consideration of a 9-Lot Residential Subdivision on 5.04 Gross Acres. The Project Requests Approval of a Variance to the Very Low Density Residential (R-L-2) Minimum Required Lot Size From 18,000 Sq. Ft. to 16,000 Sq. Ft. Located at 72094 Ginger Rogers Road (APN: 685-080-002)

DATE	ITEM #
November 6, 2025	PUBLIC HEARINGS - 6A.
Presented To	**Presented By**
Mayor and City Council	Joy Tsai, Senior Planner

RECOMMENDED ACTION

1. Approve the filing of a Mitigated Negative Declaration (SCH# 2025051428) based on Environmental Assessment Case No. EA23-0003;
2. Approve Variance Case No. VAR24-0002; and
3. Approve Tentative Tract Map Case No. TTM23-0001 (TTM 38636), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

DISCUSSION

Background and Request

The applicant, Farhad Zomorodi, is requesting approval of Tentative Tract Map No. 38636 to create a nine-lot single-family residential subdivision with associated street and common area improvements. The subject property is zoned Very Low Density Residential (R-L-2) and consists of a 5.04-acre parcel in Section 30 at the northeast corner of Landy Lane and Ginger Rogers Road. The proposed project requests approval of a variance to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes of the immediate area. The project also involves the demolition of a vacant, dilapidated single-family residence built in 1958. No single-family residence architectural plans are proposed as part of this project.

On November 6, 2014, the City Council adopted Ordinance No. 1086, which included a Zoning Text Amendment (ZTA) increasing the minimum lot size in the Very Low Density Residential (R-L-2) zoning district from 15,000 square feet to 18,000 square feet.

The project site is also subject to the Section 30 Design Guidelines, which establishes provisions for enhanced landscaped parkways, perimeter walls, vehicular access gates, and subdivision entry features. These guidelines were last amended by the City Council in 2009.

Project Summary

The proposed project involves the subdivision of land for single-family homes at a density of 1.78 dwelling units per acre, which is within the allowable density of 2 units per acre under both the General Plan and zoning designations. The project will subdivide an existing parcel totaling 219,542 square feet (5.04 gross acres) into nine single-family residential lots and lettered lots for common areas. These common areas will include a private cul-de-sac street and two landscaped retention basins fronting Ginger Rogers Road. The common areas will be owned in common and maintained by a future homeowners' association (HOA). The residential subdivision will be gated, similarly to other residential subdivisions in the vicinity. Access to the proposed parcels will be provided by the private cul-de-sac street off Ginger Rogers Road.

Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.

Planning Commission

On October 9, 2025, the Planning Commission conducted a duly noticed public hearing to consider the proposed project. Staff presented the highlights of the proposed project, and one public comment was received during the public hearing. As summarized in the meeting minutes attached to this report, the Commissioners asked questions which the staff addressed. After due consideration of the staff report and public testimony, the Planning Commission made the following motion:

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS:

1. **APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025051428) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA23-0003; AND,**

2. **APPROVE VARIANCE CASE NO. VAR24-0002; AND,**

3. **APPROVE TENTATIVE TRACT MAP CASE NO. TTM23-0001 (TTM 38636), SUBJECT TO THE CONDITIONS OF APPROVAL, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF REPORT.**

MOTION CARRIED 4/0.

Environmental Determination

An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND) in accordance with the provisions of the California Environmental Quality Act (CEQA) Guidelines Section 15070. Mitigation measures were recommended for Biological Resources, Geology and Soils, Cultural Resources, and Tribal Cultural Resources. A Notice of Intent to Adopt a Mitigated Negative Declaration was published in The Desert Sun newspaper on June 3, 2025, and distributed to interested parties. The thirty-day public review period for the Draft Mitigated Negative Declaration commenced on June 3, 2025, and ended on July 2, 2025. During the review period, the City received one formal letter from the California Department of Fish and Wildlife (CDFW) commenting on the Draft IS/MND requesting additional mitigation measures to be incorporated. While the City is not required to respond to comments on an IS/MND, Sections 21091(d)(1) and 21092.5 of the Public Resources Code (PRC) and Section 150874 (b) of the California Environmental Quality Act Guidelines require that prior to project approval a Lead Agency must consider all comments received before making a final determination on the Initial Study/Mitigated Negative Declaration. Responses to comments received were prepared and have been incorporated into the draft revised IS/MND and included as Attachment 4.

Assembly Bill 52 (AB 52) Tribal Consultation

State law requires public agencies in California to formally consult with Native American tribes that are traditionally and culturally affiliated with a project's geographic area, during the California Environmental Quality Act (CEQA) process. Eleven potentially interested tribes identified by the Native American Heritage Commission (NAHC) were contacted pursuant to AB 52 for information regarding their knowledge of cultural resources that were within or near the project area. Tribes had thirty days from the date of receipt of the notice to request consultation. Three tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, and Morongo Band of Mission Indians) provided a response to the AB 52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on July 31, 2024. The Agua Caliente Band of Cahuilla Indians was the only tribe to request a formal consultation in their letter dated August 22, 2024. They concluded their consultation on September 11, 2024, with the recommendation that a condition of approval be added to the project. No additional requests for formal consultation were received, and the AB 52 noticing period was concluded.

Noticing Requirement

RMMC Section 17.74.020, *Hearing and notice*, requires that all property owners, as shown on the county's latest equalized assessment roll, within a 500-foot radius of the boundaries of the subject parcel(s) be notified of matters requiring a public hearing. If the number of property owners to whom the notice would be mailed is less than 25, then the mailing radius is required to be increased to 1,000 feet as measured from the exterior boundaries of the subject parcel.

On October 22, 2025, public hearing notices were mailed to property owners within a **500-foot** radius of the parcel boundary and posted at the City's designated community posting sites pursuant to the requirements of RMMC Chapter 17.74. Notification of the public hearing was published in *The Desert Sun* newspaper on October 26, 2025.

All written public comments related to the City Council's review of the proposed project received prior to the publication of this agenda packet, including any comments received for consideration of the Planning Commission, have been attached as Attachment 8; any oral testimony or comments made, including those by Developer, it's representatives, or public, if any, can be found on the video recording of the meeting on the city's website and were reviewed by the City Council prior to City Council's consideration of the item. All items were made publicly available at the same time as they were made available to a majority of the council in accordance with the Brown Act.

Attachments

Attachment 1 - 10/09/2025 PC Staff Report & Conditions of Approval

Attachment 2 - Aerial Photo

Attachment 3 - Public Hearing Notice

Attachment 4 - Draft Mitigated Negative Declaration

Attachment 5 - Draft Notice of Determination

Attachment 6 - 10/09/2025 PC Draft Minutes

Attachment 7 - Exhibits

Attachment 8 - Public Comments

ATTACHMENT 1

Planning Commission Staff Report

Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) – Applicant: Farhad Zomorodi. Consideration of a 9-Lot Residential Subdivision on 5.04 Gross Acres. The Project Requests Approval of a Variance to the Very Low Density Residential (R-L-2) Minimum Required Lot Size From 18,000 Sq. Ft. to 16,000 Sq. Ft. Located at 72094 Ginger Rogers Road (APN: 685-080-002)

DATE	ITEM #
October 9, 2025	PUBLIC HEARINGS - 4A.
Presented To	**Presented By**
Planning Commission	Joy Tsai, Senior Planner

RECOMMENDED ACTION

Recommend to the City Council:

1. Approval of the filing of a Mitigated Negative Declaration (SCH# 2025051428) based on Environmental Assessment Case No. EA23-0003; and,
2. Approval of Variance Case No. VAR24-0002; and,
3. Approval of Tentative Tract Map Case No. TTM23-0001 (TTM 38636), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

DISCUSSION

Facts

1. Applicant:	Farhad Zomorodi
2. Request:	Consideration to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 sq. ft. to 16,841 sq. ft. A private street is proposed, in addition to two retention basins and perimeter landscaping within the project common areas. The project requests approval of a variance to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 sq. ft. to 16,000 sq. ft. in order to be compatible with the established lot sizes of the immediate area. The project involves the demolition of an existing single-family residence built in 1958. No single-family residence architectural plans are proposed as part of this project.
3. Location:	The project site is located in Section 30, at 72094 Ginger Rogers Road (APN: 685-080-002)

4. Project Size: 219,542 square feet (5.04 gross acres)

5. Existing Land Use and General Plan/Zoning: Single-family residence; Very Low Density Residential (R-L-2)

6. Date Application Deemed Complete: September 10, 2025

Background and Request

The applicant, Farhad Zomorodi, is requesting approval of Tentative Tract Map No. 38636 to create a nine-lot single-family residential subdivision with associated street and common area improvements. The subject property is zoned Very Low Density Residential (R-L-2) and consists of a 5.04-acre parcel in Section 30 at the northeast corner of Landy Lane and Ginger Rogers Road. The proposed project requests approval of a variance to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes of the immediate area. The project also involves the demolition of a vacant, dilapidated single-family residence built in 1958. No single-family residence architectural plans are proposed as part of this project.

The following entitlements are requested: Environmental Assessment (EA23-0003), Variance (VAR24-0002), and a Tentative Tract Map (TTM23-0001).

The subject property is located in Section 30 and is bound by Ginger Rogers Road to the south and Landy Lane to the west. The west half of Section 30 was annexed from the County of Riverside to the City in 1994. A Master Circulation Plan for Section 30 was approved in 1999 with the intent of addressing drainage constraints and traffic issues, and last amended on December 18, 2014, for the realignment of Via Florencia.

On November 6, 2014, the City Council adopted Ordinance No. 1086, which included a Zoning Text Amendment (ZTA) increasing the minimum lot size in the Very Low Density Residential (R-L-2) zoning district from 15,000 square feet to 18,000 square feet.

The project site is also subject to the Section 30 Design Guidelines, which establishes provisions for enhanced landscaped parkways, perimeter walls, vehicular access gates, and subdivision entry features. These guidelines were last amended by the City Council in 2009.

Site and Surrounding General Plan, Zoning and Land Uses

The 5.04-acre project site is a rectangular lot oriented north to south, measuring approximately 330.05 feet in width and 665.31 feet in length. It is bordered by Ginger Rogers Road to the south, Landy Lane to the west, and existing single-family residential subdivisions to the north and east. A vacant single-family residence is located at the southwest corner of the property and will be demolished as part of the proposed project. The rest of the site is characterized by scattered desert vegetation and weeds, primarily a sparse creosote bush scrub community dominated by Creosote Bush (*Larrea tridentata*). The site also shows signs of disturbance, including occasional foot traffic from hikers and illegal dumping.

The General Plan and zoning of the project site is R-L-2 (Very Low Density Residential with a maximum of two dwelling units per acre). The following table describes the surrounding land uses located adjacent to the subject property:

	General Plan and Zoning Designation	Land Use
Project Site	Very Low Density Residential (R-L-2)	Single-family residence to be demolished and vacant land
North	Very Low Density Residential (R-L-2)	Single-family residences
East	Very Low Density Residential (R-L-2)	Single-family residences
South	Very Low Density Residential (R-L-2)	Ginger Rogers Road (Local Road), Vacant land
West	Office (O)	Landy Lane (Local Road), Vacant land

Project Description

The proposed project involves the subdivision of land for single-family homes at a density of 1.78 dwelling units per acre, which is within the allowable density of 2 units per acre under both the General Plan and zoning designations. Specifically, the project will subdivide an existing parcel totaling 219,542 square feet (5.04 gross acres) into nine single-family residential lots and lettered lots for common areas. These common areas will include a private cul-de-sac street and two landscaped retention basins fronting Ginger Rogers Road. The common areas will be owned in common and maintained by a future homeowners' association (HOA). The residential subdivision will be gated, similarly to other residential subdivisions in the vicinity. Access to the proposed parcels will be provided by the private cul-de-sac street off Ginger Rogers Road.

The proposed land use and gross lot size of each parcel is provided in the table below:

	Lot Size	**Land Use**
Existing Lot	219,542 sq. ft. (5.04 ac)	Single-family residence to be demolished
Proposed Lot 1	16,617 sq. ft. (0.38 ac)	Single-family residence
Proposed Lot 2	16,191 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 3	16,184 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 4	16,299 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 5	16,841 sq. ft. (0.39 ac)	Single-family residence
Proposed Lot 6	16,122 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 7	16,186 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 8	16,191 sq. ft. (0.37 ac)	Single-family residence
Proposed Lot 9	16,786 sq. ft. (0.39 ac)	Single-family residence
Proposed Lot A	25,866 sq. ft. (0.59 ac)	Private street
Proposed Lot B	5,683 sq. ft. (0.13 ac)	Parkway and retention basin
Proposed Lot C	5,640 sq. ft. (0.13 ac)	Parkway and retention basin
Proposed Lot D	5,133 sq. ft. (0.12 ac)	Parkway
Proposed Lot E	730 sq. ft. (0.02 ac)	Parkway

Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.

Analysis

Review Authority

The proposed project requires separate, but interrelated approvals: a Variance to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes of the immediate area; and a Tentative Tract Map to allow a nine-lot single-family residential subdivision with lots ranging in size from 16,122 square feet to 16,841 square feet. The analysis that follows provides the basis for staff's recommendation to approve the Variance and Tentative Tract Map applications.

Variances allow for adjustments to the City's development standards for a particular property due to special circumstances. The Tentative Tract Map application is reviewed for the location, design, configuration, and potential impacts of the proposed use. Therefore, the findings to approve a Variance to allow the reduction of the minimum lot size requirement from 18,000 square feet to 16,000 square feet would be made prior to consideration of the proposed residential subdivision.

The following analysis provides the foundation for the findings in the staff report. Together, the analysis and findings support staff's recommendation that the Planning Commission recommend approval of the project and all its components, subject to the Conditions of Approval in Attachment 2.

Variances (Rancho Mirage Municipal Code Chapter 17.52)
Variances are exemptions and relief from the City's development standards triggered by unusual or special circumstances on the property such as location, shape, size, surroundings, topography, or other condition where the application of the City's development standards denies property owners privileges enjoyed by other property owners in the vicinity and under identical zoning districts or creates an unnecessary, non-self-created hardship or unreasonable regulation which makes it obviously impractical to require compliance with the development standards.

Variances may be granted when the strict application of the City's development standards denies the property owner privileges enjoyed by other property owners in the vicinity and under identical zoning districts or creates an unnecessary and non-self-created hardship or unreasonable regulation which makes it obviously impractical to require compliance with the development standards.

In compliance with State law, specific "findings" must be made before a decision-making body may approve a Variance. After evaluating the information submitted by the applicant and analyzing relevant facts, staff concludes that approval of the Variance is appropriate based on the following findings:

1. **Special Circumstances:** The project site is a corner lot, subject to additional right-of-way dedications and parkway requirements along both Landy Lane and Ginger Rogers Road. These constraints reduce the buildable area of the project site and limit the applicant's ability to design a subdivision that complies with the current minimum lot size standard and is compatible with adjacent residential development, such as the north subdivision approved in 2013, which has similar site conditions. As such, a variance is appropriate to account for these site constraints and to allow for a compatible subdivision design.

2. **Preservation of Property Rights:** Strict application of the current zoning ordinance does not deprive the property owner of reasonable use of the land or any legally established property rights. Granting the Variance allows the subject property to be developed similarly to other nearby properties in Section 30. Many of these residential lots were approved and developed prior to the City's 2014 amendment to the R-L-2 zoning standards, which increased the minimum lot size in the R-L-2 zoning district from 15,000 to 18,000 square feet. Additionally, the State of California enacted five major automatic extension statutes (SB 1185, AB 333, AB 208, AB 116, AB 1303), which extended the validity of tentative map approvals granted prior to the 2014 ZTA. As a result, a significant portion of nearby properties remain below the current minimum lot size standard. The Variance would ensure that the property owner enjoys the same rights as others in the vicinity.

3. **No Detrimental Effects:** The Variance will not harm public health, safety, or welfare. The subdivision has been designed to comply with applicable safety standards, including emergency access, fire protection, and drainage. The project does not increase density beyond what is permitted, nor does it introduce any use or physical condition that would negatively affect adjacent properties.

4. **Consistency with Surrounding Properties:** The Variance does not grant a special privilege. The proposed lot sizes align with the established neighborhood pattern, which includes lots of varying sizes due to the earlier subdivision of properties. The Variance maintains compatibility with surrounding homes and does not introduce any uses outside of those permitted in the R-L-2 zoning district.

5. **General Plan and Neighborhood Compatibility:** The proposed subdivision aligns with the City's General Plan, supporting low-density residential use in the area. The design mirrors the layout of the north subdivision (Siena Vista, approved prior to the 2014 ZTA), which also features nine lots with two street frontages. The project incorporates similar architectural features and landscaping and adheres to the Section 30 Design Guidelines.

While the proposed lot sizes range from approximately 16,122 to 16,841 square feet, slightly below the 18,000-square-foot minimum typically required in the R-L-2 district, the reduction is modest and does not result in a development intensity that exceeds what is envisioned in the General Plan. Without the right-of-way and parkway dedications, the lots would fully comply with the current minimum lot size standard. The request for a variance is reasonable given the project's conformance with density standards and the overall compatibility of the subdivision design with the surrounding built environment.

As designed and conditioned, the proposed project preserves the intent of low-density development, enhances the existing neighborhood fabric, and contributes to the City's goals for quality residential growth.

Tentative Map (Rancho Mirage Municipal Code Section 16.12.065)
A tentative map is a map approving the division of land for the purpose of sale, lease, or financing, and is governed by the Subdivision Map Act. A tentative map prescribes how the land is to be subdivided. The City's Subdivision Ordinance (Rancho Mirage Municipal Code Title 16 *Subdivisions*) establishes the minimum standards for the design of the lots, and the public improvements which serve them.

Once a tentative map is approved, the refined final map is approved by the City Council if deemed by the City Engineer to be in substantial conformance with the tentative map. The final map is then recorded with the Riverside County Recorder's Office, after which the newly created parcels may be individually sold and developed pursuant to the underlying General Plan and zoning regulations.

Subdivision Design

The proposed subdivision complies with the City's Development Code standards, except for the minimum lot size standard for the Very Low Density Residential (R-L-2) zoning district, for which the applicant is requesting a Variance. Residential lot sizes range from 16,122 square feet to 16,841 square feet, resulting in an overall project density of 1.78 dwelling units per acre. The following table compares the proposed subdivision with the City's Development Code standards for the R-L-2 zoning district:

Development Feature	Development Standards	Existing	Proposed	Meets Requirements
Parcel Width	Minimum 90 ft.	330.05 ft.	Parcel widths range from 126.50 ft. to 155.20 ft.	Yes
Parcel Depth	Minimum 100 ft.	665.31 ft.	Parcel depths range from 119.02 ft. to 126.12 ft.	Yes
Lot Size	Minimum 18,000 sq. ft.	219,542 sq. ft.	Minimum parcel size of 16,122 sq. ft.	Yes, with approval of Variance
Maximum Density	2 dwelling units per acre maximum	0.19 units per acre	1.79 units per acre	Yes

As set forth in the above analysis, and with Variance approval, the subdivision is in conformance with the Rancho Mirage General Plan, the Section 30 Master Circulation Plan and Design Guidelines, and all applicable requirements of the Subdivision Map Act.

Access and Circulation

The proposed subdivision will be gated, consistent with other residential developments in the area. Access to the proposed parcels will be provided by the 37-foot-wide, 520-foot-long private cul-de-sac street (Lot A) connecting to Ginger Rogers Road, an existing public street. In Section 30, public streets are generally classified as local streets under the City's General Plan, featuring two lanes and a typical right-of-way width of 60 feet. The proposed private roadway width and cul-de-sac radius meet both City and Fire Department standards, as conditioned. Overall, the subdivision's design complies with the Section 30 Master Circulation Plan.

The applicant has not submitted proposed street names for the private street at this time. Condition of Approval No. 15 states that private street names for the subdivision shall be submitted to the Development Services Director or their designee and shall be subject to the approval of the City of Rancho Mirage pursuant to Chapters 12.06 and 17.58 of the Rancho Mirage Municipal Code.

Grading and Drainage

The 5.04-acre project site is a relatively flat, rectangular lot oriented north to south. A vacant single-family residence is located at the southwest corner of the property and will be demolished as part of the proposed project. The rest of the site is characterized by scattered desert vegetation and weeds. The site also shows signs of disturbance, including occasional foot traffic from hikers and illegal dumping.

The amount of cut and fill materials are anticipated to balance during grading operations with no import or export of soils required. The proposed residential lot elevations will range from 325.5 to 328.0 feet above sea level, with an average pad elevation of 326.50 feet. These elevations were determined based on the site's topography and have been reviewed by the City Engineer. The existing terrain drains from the northeast to the southwest, and the overall drainage pattern will generally remain consistent post-development, flowing from north to south.

To manage stormwater on-site, two retention basins are proposed at the southern end of the project: Lot B, located east of the proposed private street (Lot A), will be 5,361 square feet in size, while Lot C, located to the west of the street, will measure 5,586 square feet. The project's grading and drainage design ensures that all stormwater and nuisance water will be contained on-site. The basins will be sized to accommodate runoff from a worst-case 100-year storm event affecting the project's half-street frontage.

The Preliminary Hydrology Study for the proposed subdivision is on file with the Planning Division. As conditioned, the applicant is responsible for submitting the final hydrology report and grading plans to the Engineering Division for review and approval.

Entry, Landscaping, and Walls

A conceptual landscape plan for the common areas was submitted with the application. The proposed project's entry off Ginger Rogers Road features earth-toned, multi-blend stone pavers, black metal vehicular and pedestrian gates. The residential subdivision will be enclosed with six-foot-tall perimeter walls matching those of the adjacent Siena Vista development to the north, along with six-foot-tall black wrought iron fencing, in compliance with Section 30 Design Guidelines. Two retention basins (Proposed Lots B and C) abut Ginger Rogers Road, which further enhances the sense of openness and meets the Section 30 Design Guidelines goal to create "view windows" into subdivisions and thoughtful aesthetic placement of perimeter landscaping. The landscaped parkways along Landy Lane and Ginger Rogers Road are 19 feet and 68 feet wide, respectively, in compliance with the minimum width requirement set forth in the City's Development Code.

The parkway features a desert-appropriate, non-invasive species and a meandering six-foot wide sidewalk in "Yosemite Brown" colored concrete, consistent with the Section 30 Design Guidelines. Common area landscaping includes trees such as Chaste, Sweet Acacia, Fruitless Olive, and Date Palms with a minimum brown trunk height of ten feet, along with various accent shrubs and ground cover for color and texture. The plant palette primarily consists of low water-use species, except for the Date Palms, which are classified as moderate water use in the low desert region. The project has been designed to comply with the City's landscape standards and the Section 30 Design Guidelines for landscaping and parkway improvements.

Additional Correspondence

As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. All utility providers, including gas, water, sewer, and cable/telecommunication services, are expected to serve the proposed parcels. The Imperial Irrigation District (IID) service territory in recent years has experienced capacity issues, with new projects/customers and being required to implement new capacity in the form of a substation to obtain electrical service. Individual projects are being conditioned to implement these substations. The applicant will coordinate with IID to work on solutions regarding these capacity issues. Any comments received have been incorporated into this report and the Conditions of Approval.

Environmental Determination

An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND) in accordance with the provisions of the California Environmental Quality Act (CEQA) Guidelines Section 15070. Mitigation measures were recommended for Biological Resources, Geology and Soils, Cultural Resources, and Tribal Cultural Resources. A Notice of Intent to Adopt a Mitigated Negative Declaration was published in The Desert Sun newspaper on June 3, 2025, and distributed to interested parties. The thirty-day public review period for the Draft Mitigated Negative Declaration commenced on June 3, 2025, and ended on July 2, 2025. During the review period, the City received one formal letter from the California Department of Fish and Wildlife (CDFW) commenting on the Draft IS/MND requesting additional mitigation measures to be incorporated. While the City is not required to respond to comments on an IS/MND, Sections 21091(d)(1) and 21092.5 of the Public Resources Code (PRC) and Section 150874 (b) of the California Environmental Quality Act Guidelines require that prior to project approval a Lead Agency must consider all comments received before making a final determination on the Initial Study/Mitigated Negative Declaration. Responses to comments received were prepared and have been incorporated into the draft revised IS/MND and included as Attachment 4. Those who provided comments were individually notified with the public hearing notice on September 24, 2025.

Assembly Bill 52 (AB 52) Tribal Consultation

State law requires public agencies in California to formally consult with Native American tribes that are traditionally and culturally affiliated with a project's geographic area, during the California Environmental Quality Act (CEQA) process. Eleven potentially interested tribes identified by the Native American Heritage Commission (NAHC) were contacted pursuant to AB 52 for information regarding their knowledge of cultural resources that were within or near the project area. Tribes had thirty days from the date of receipt of the notice to request consultation. Three tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, and Morongo Band of Mission Indians) provided a response to the AB 52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on July 31, 2024. The Agua Caliente Band of Cahuilla Indians was the only tribe to request a formal consultation in their letter dated August 22, 2024. They concluded their consultation on September 11, 2024, with the recommendation that a condition of approval be added to the project. No additional requests for formal consultation were received, and the AB 52 noticing period was concluded.

Noticing Requirement

RMMC Section 17.74.020, *Hearing and notice*, requires that all property owners, as shown on the county's latest equalized assessment roll, within a 500-foot radius of the boundaries of the subject parcel(s) be notified of matters requiring a public hearing. If the number of property owners to whom the notice would be mailed is less than 25, then the mailing radius is required to be increased to 1,000 feet as measured from the exterior boundaries of the subject parcel.

On September 24, 2025, public hearing notices were mailed to property owners within a **500-foot** radius of the parcel boundary and posted at the City's designated community posting sites pursuant to the requirements of RMMC Chapter 17.74. Notification of the public hearing was published in *The Desert Sun* newspaper on September 28, 2025. Any information addressed to the Planning Commission, but received after completion of this final report, will be distributed at the public hearing. No comments have been received as of the publication date of this report.

FINDINGS

Pursuant to RMMC Section 17.52.060 *Findings and decision,* the review authority may approve a variance in whole or in part, with conditions, only if all of the following findings are made:

1. There are special circumstances applicable to the property, including location, shape, size, surroundings, or topography so that the strict application of this title denies the property of privileges enjoyed by other property in the vicinity and under identical zoning district classification. **Special circumstances apply to the subject property due to its location as a corner lot, which results in constraints not shared by interior lots within the R-L-2 zoning district in this neighborhood. Specifically, the project is subject to additional right-of-way dedications and parkway requirements along both Landy Lane and Ginger Rogers Road. These dual requirements reduce the buildable area of the project site and limit the applicant's ability to design a subdivision that complies with the current minimum lot size standard and is compatible with adjacent residential development. In addition, many residential lots in the vicinity were subdivided prior to the 2014 zoning text amendment, increasing the minimum lot size to 18,000 square feet. Without a variance, strict application of the current minimum lot size standard would prevent the property from being subdivided in a manner that is consistent with the established neighborhood pattern and typical lot sizes. Therefore, the Variance is warranted to account for these site constraints and to allow a compatible subdivision design in accordance with General Plan Program LU 3.1B.**

2. Granting the variance:

    A. Is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity and zoning district and unavailable to the property for which the variance is sought. **The proposed Variance to reduce the minimum lot size from 18,000 square feet to 16,000 square feet does not constitute a special privilege, as it reflects the established development pattern in the surrounding neighborhood in Section 30. The proposed lot sizes, ranging from 16,122 to 16,841 square feet, are consistent with those of nearby residential properties, many of which were approved and developed prior to the City's 2014 Zoning Text Amendment (ZTA) to the R-L-2 development standards. The 2014 ZTA increased the minimum lot size from 15,000 to 18,000 square feet. Additionally, a series of five automatic extension statutes enacted by the State (SB 1185, AB 333, AB 208, AB 116, and AB 1303) preserved approvals for tentative maps granted prior to the 2014 ZTA. As a result, a substantial portion of surrounding lots remain below the current minimum lot size requirement. While the variance is not necessary to preserve the applicant's property rights, it allows for a subdivision design that is consistent with the built character of the area and ensures compatibility with adjacent developments in accordance with General Plan Program LU 3.1B.**

B. Would not be detrimental to the public health, safety, or welfare, or injurious to the property or improvements in the vicinity and zoning district in which the property is located. **The proposed Variance would not be detrimental to the public health, safety, or welfare, or injurious to the property or improvements. The subdivision has been designed to comply with applicable safety standards, including emergency access, fire protection, and drainage. The project does not increase density beyond what is permitted, nor does it introduce any use or physical condition that would negatively affect adjacent properties. In addition, the project will be subject to review and approval by the Building and Safety Division, Engineering Division, and Riverside County Fire Department to ensure compliance with all health and safety codes. These safeguards, combined with the project's compatibility with the surrounding neighborhood, ensure that the Variance will not result in adverse impacts on the community.**

C. Does not constitute a special privilege inconsistent with the limitations upon other property in the vicinity and zoning district in which the property is located. **The proposed Variance to reduce the minimum lot size from 18,000 square feet to 16,000 square feet does not constitute a special privilege, as it aligns with the existing development pattern in the surrounding neighborhood. The proposed subdivision includes lots ranging in size from 16,122 to 16,841 square feet, which are consistent with lot sizes of surrounding residential properties. Many of these residential lots in Section 30 were approved and developed prior to the City's 2014 amendment to the R-L-2 zoning standards, which increased the minimum lot size in the R-L-2 zoning district from 15,000 to 18,000 square feet. Additionally, the State of California enacted five major automatic extension statutes (SB 1185, AB 333, AB 208, AB 116, AB 1303), which extended the validity of tentative map approvals granted prior to the 2014 ZTA. As a result, a significant portion of nearby properties remain below the current minimum lot size standard. The proposed lot sizes are consistent with the established lot sizes in the area and do not grant any advantage beyond what has historically been permitted for similarly situated properties. The Variance serves to maintain neighborhood compatibility, rather than granting a special privilege.**

D. Does not allow a use or activity which is not otherwise expressly authorized by the regulations governing the subject parcel. **The proposed Variance does not authorize any use or activity that is not otherwise permitted by the zoning regulations for the project site. The current General Plan and zoning designation for the project site is Very Low Density Residential (R-L-2), which allows for single-family residential uses. The proposed project involves the subdivision of land for single-family homes at a density of 1.78 dwelling units per acre, which is within the allowable density of 2 units per acre under both the General Plan and zoning designations.**

E. Would not be inconsistent with the general plan and specific plan, if applicable. **The proposed project is consistent with the City's General Plan in that the current General Plan and zoning designation for the project site allows for the subdivision of property. The current General Plan and zoning designation for the project site is Very Low Density Residential (R-L-2). The R-L-2 zoning district identifies areas appropriate for single-family uses. The General Plan density limit allows up to two dwelling units per acre, and the proposed project density is 1.78 dwelling units per acre. The project is consistent with the General Plan land use designation in terms of land use, and the design and appearance of the project is compatible with the surrounding community as follows:**

- **Land Use and Neighborhood Compatibility: The subdivision will create nine single-family residential lots, contributing to the City's housing stock. The proposed lot sizes remain generous and consistent with the scale of neighboring developments. The layout mirrors adjacent subdivisions to the north and east, both of which also contain nine residential lots accessed via private cul-de-sac streets. While the proposed subdivision utilizes a slightly reduced lot size minimum, it retains appropriate setbacks and open space, minimizes grading impacts, and preserves natural drainage patterns. The proposed design aligns with the established development pattern, supporting neighborhood continuity and cohesion in accordance with General Plan Program LU 3.1B.**

- **Community Design and Landscaping: The subdivision has been designed to blend with the surrounding neighborhood by matching existing perimeter walls with appropriate offsets and incorporating desert-appropriate, low-water-use plantings in accordance with the Section 30 Design Guidelines. These design elements ensure visual and functional compatibility with the established community character, in accordance with General Plan Programs CD 4.1A, CD 5.1A, CD 5.1C, and CD 5.1D.**

While the proposed lot sizes range from approximately 16,122 to 16,841 square feet, slightly below the 18,000-square-foot minimum required in the R-L-2 district, the reduction is modest and does not result in a development intensity that exceeds what is envisioned in the General Plan. The request for a variance is reasonable given the project's conformance with density standards and the overall compatibility of the subdivision design with the surrounding built environment.

As designed and conditioned, the proposed project preserves the intent of low-density development, enhances the existing neighborhood fabric, and contributes to the City's goals for quality residential growth.

3. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). **An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. A Mitigated Negative Declaration (SCH Number 2025051428) was prepared based on Environmental Case No. EA23-0003 and pursuant to the California Environmental Quality Act. The document contains mitigation measures pertaining to Biological Resources, Cultural Resources, Geology and Soils, and Tribal Cultural Resources. Environmental impacts will be less than significant with implementation of the project's mitigation measures.**

Pursuant to RMMC Section 16.12.065 *Action on tentative tract maps*, the review authority may approve a tentative tract map may be approved only if the following findings are made:

1. The proposed Tentative Tract Map is consistent with the City's General Plan as specified in Section 65451 of the California Government Subdivision Map Act. **The current General Plan and zoning designation for the project site is Very Low Density Residential (R-L-2). The R-L-2 zoning district identifies areas appropriate for large lot single-family uses. The allowable maximum density is two dwelling units per gross acre. The overall project density is 1.78 dwelling units per acre, which complies with the maximum density under the R-L-2 zoning district. As conditioned, the proposed tentative map is consistent with the City's General Plan, Section 30 Guidelines, and Subdivision Map Act.**

2. The design or improvement of the proposed subdivision is consistent with the City's General Plan, Zoning Ordinance requirements, as conditioned. **As set forth in the above analysis, the proposed subdivision is in conformance with the City's General Plan, zoning, Section 30 Design Guidelines, and all applicable requirements of the Subdivision Map Act, as conditioned. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.**

3. The site is physically suitable for the type of development, as conditioned. **The proposed parcels comply with the majority of the City's Development Code standards for the underlying zoning designation, Very Low Density Residential (R-L-2). The project site is physically suitable for the type of low density residential development with proposed lots that are 16,000 square feet or larger and no irregular shaped parcels. The overall project density is 1.78 dwelling units per acre, which complies with the maximum density under the R-L-2 zoning district.**

4. The site is physically suitable for the proposed density of development, as conditioned. **The proposed subdivision has an overall density of 1.78 dwelling units per acre, which does not exceed the maximum permitted density of two dwelling units per acre under the R-L-2 zoning district. In addition, the applicant shall comply with the recommendations of the Mitigated Negative Declaration. No residential development is being proposed in conjunction with the proposed subdivision. Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.**

5. The design of the subdivision and proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat. **The project has been reviewed for compliance with the California Environmental Quality Act (CEQA). Based on the implementation of the project's Biological Resource Mitigation Measures, there would be no potential significant negative impacts upon environmental quality and natural resources. The project site is surrounded by existing developments to the north and east. The project site has been partially disturbed, and any site development will have to comply with the mitigation measures and requirements of the**

Mitigated Negative Declaration. The proposed project has less than a significant impact with the incorporation of mitigation measures provided in the adopted Mitigated Negative Declaration.

6. The design of the subdivision or the type of improvements is not likely to cause serious public health problems, as conditioned. **As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. As conditioned, agencies are expected to provide service to the proposed parcels, including providers of gas, water, sewer, and cable telecommunication services. The Imperial Irrigation District (IID) service territory in recent years has experienced capacity issues, with new projects/customers and being required to implement new capacity in the form of a substation to obtain electrical service. Individual projects are being conditioned to implement these substations. The developer will coordinate with IID to work on solutions regarding these capacity issues. Noise and fugitive dust associated with grading and construction of this project shall be mitigated through compliance with the proposed project's Mitigated Negative Declaration and the City's Municipal Code provisions regarding dust control and construction hours. Lastly, permits are required to be obtained to construct the new site improvements. No public health impacts are expected, as conditioned.**

7. The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision, as conditioned. **As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. Any comments received have been incorporated into the staff report and the Conditions of Approval. The Tentative Map has been conditioned to record any necessary easements and abandon existing easements that are deemed unnecessary by the City Engineer. The incremental impact of the project on service system capacities is mitigated by the dedications and public improvements required within the Conditions of Approval requiring all necessary dedications and public improvements to be in accordance with the City's adopted General Plan.**

8. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). **An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. A Mitigated Negative Declaration (SCH Number 2025051428) was prepared based on Environmental Case No. EA23-0003 and pursuant to the and pursuant to CEQA Guidelines Section 15070. The document contains mitigation measures pertaining to Biological Resources, Cultural Resources, Geology and Soils, and Tribal Cultural Resources. Environmental impacts will be less than significant with implementation of the project's mitigation measures.**

Attachments

Attachment 1 – Aerial Photo

Attachment 2 – Conditions of Approval

Attachment 3 – Public Hearing Notice

Attachment 4 – Draft Mitigated Negative Declaration

Attachment 5 – Draft Notice of Determination

Attachment 6 – Exhibits

CONDITIONS OF APPROVAL

Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (Tentative Tract Map No. 38636) ("Project")

Special conditions (or portions thereof) are designated in **bold.**

I. GENERAL

1. All improvements shall conform to the provisions of the Rancho Mirage Municipal Code (RMMC), Title 16, (Subdivisions), unless specifically modified by any of the following conditions.

2. Development of the Subject Property shall require the appropriate entitlement process as determined by the Planning Division.

3. The Project approval shall be effective for two (2) years from the date of City Council approval. A Final Map must be approved by the City within this specified time period, or the Project approval shall become null and void unless the expiration date for the tentative map is extended as provided by RMMC Section 16.12.090.

4. The applicant shall execute a written acknowledgment to the Planning Division stating acceptance of and compliance with all of the Conditions of Approval for this Tentative Tract Map and all associated cases, and that the plans submitted are in compliance with the Conditions of Approval. No modifications shall be made to said plans without written approval from the appropriate decision-making body.

5. The Conditions of Approval set forth herein may include certain fees, dedication requirements, reservation requirements, and other exactions. Pursuant to Government Code Section 66020(d)(1), these Conditions constitute written notice of a statement of the amount of such fees, and a description of the dedications, reservations, and other exactions. You are hereby further notified that the 90-day approval period in which you may protest these fees, dedications, reservations, and other exactions, pursuant to Government Code Section 66020(a), has begun.

6. The development of the subject property shall conform substantially with the approved exhibits contained in **Case Nos. EA23-0003, VAR24-0002, and TTM23-0001** and all associated cases on file in the Planning Division. This includes all dimensional and size specifications, landscaping, hardscape, design treatments (including color and materials), and the locations of perimeter walls and plant materials as shown in the landscape exhibits.

7. Prior to issuance of any permits, the applicant shall acknowledge that the approved project and any or all proposed modifications to the approved project shall be completed in accordance with applicable City Ordinances, Guidelines, and other requirements in effect at the time of building permit issuance.

8. All green waste shall be disposed of at a permitted composting facility. The applicant shall undertake or cause to be undertaken such action or actions as are necessary to permit and/or otherwise accommodate the implementation of recycling services. Such action or actions may include, but are not limited to: designating and providing adequate area at

convenient locations with appropriate access for the placement of dumpsters and/or bin sets; constructing permanent enclosures that meet all requirements of the Code of the City of Rancho Mirage and each dumpster and/or bin set; providing for the security of each dumpster to discourage scavenging, and; providing adequate indoor area at convenient locations for the collection and short-term storage of recyclables. The applicant shall submit a "Recycling Program" that has been reviewed by an agent of the City, which, at a minimum, explains, states or otherwise defines: (1) recyclables generated by type; (2) estimate by pounds for each recyclable generated; (3) number of dumpsters and/or plastic bin sets (one set equals three "baskets") needed to accommodate estimated recyclables; (4) location of each dumpster (may be identified on a map attached as an exhibit); (5) method of collection such as curbside at each residential unit or at rear of property by dumpster, etc.; and (6) pick-up schedule for recyclables. The applicant shall provide other such information as may be necessitated by the development proposal.

9. The applicant shall comply with RMMC Chapter 9.60 which requires disclosure in the sale of residential property. The purpose of this chapter is to protect purchasers of new homes or lots for custom homes against unacceptable development on adjacent property by requiring the sellers of such homes and lots to disclose land use regulations applicable to contiguous properties and to disclose the nature of any development project approvals for such property that may exist.

10. **Grading permits shall not be issued prior to vertical development entitlements unless approved by the Public Works or Development Services Directors.**

11. **The location of this project is considered an "infill site" with very close proximity to existing residences. Should the City receive complaints about construction noise from residents in close proximity to the project, the City may limit construction activities to the hours between 7am and 5pm.**

12. **The mitigation measures contained in the Mitigated Negative Declaration (State Clearinghouse Number 2025051428) based on Environmental Case No. EA23-0003 are hereby incorporated as Conditions of Approval. The property owner shall be responsible for implementing the mitigation measures contained within the adopted Mitigated Negative Declaration, as necessary.**

13. **Within 5 days of project approval the applicant shall submit to the City of Rancho Mirage a check in the total amount of $3,018.75 made payable to the City of Rancho Mirage for the CEQA filing fees for the IS/MND (State Clearinghouse Number 2025051428).**

14. **The applicant shall demonstrate that the project site has electrical availability prior to the issuance of Building Permits or by Building Occupancy as determined by the Development Services Director.**

II. PLANNING

Prior to City Council approval of the Final Map, the following Conditions shall be satisfied:

15. Street names and addresses for the subdivision shall be submitted to the Development Services Director or their designee and shall be subject to the approval of the City of Rancho Mirage pursuant to Chapters 12.06 and 17.58 of the Rancho Mirage Municipal Code. The approved street name(s) shall be shown on the Final Map.

16. A detail of the entry area, including landscape, architectural, and dimensional information, shall be submitted for review and approval by the Development Services Director or their designee. **The Planning Division reserves the right to request additional landscaping upon final inspection if it is determined that areas are devoid of plant or ground cover material, or the execution of the landscaping plan does not comply with the purpose and intent of the Section 30 Design Guidelines.**

    A. The approved landscape plan may be modified only with City approval in a manner pursuant to Section 17.42.120 (Modification of a Development Plan Permit). Minor modifications to the approved plan may be considered by the Development Services Director.

    B. The project shall be completed in accordance with the Ordinances, requirements, guidelines, and other criteria in effect at the time of construction.

    C. Landscaping, Wall, and Grading Plans shall demonstrate that all electrical transformers, utility pads, cable TV and phone boxes, and similar utility fixtures will be screened, pursuant to RMMC Chapter 17.20 and/or installed underground if required.

    D. Landscaping. The plans shall be submitted as a Landscape Documentation Package in accordance with Ordinance No. 990, and as amended by Ordinance 1101. Such Plan(s) shall be consistent with the Preliminary Landscape Plan, and the applicant shall provide evidence that the landscape plan has been reviewed and approved by the Riverside County Office of the Agricultural Commissioner and the Coachella Valley Water District (CVWD) prior to requesting a final inspection. The final landscaping and irrigation plans shall incorporate the use of Evapotranspiration (ET) irrigation "smart" controllers which shall include automatic water scheduling, rain, and temperature sensors. Prior to a final inspection, the landscape contractor shall verify in writing with Planning staff that controllers have been installed, are correctly programmed, and operate with these features. More information on smart controllers can be found at www.irrigation.com. **Landscaping shall be designed to endure blowsand conditions. The project landscape architect shall submit written verification that the landscaping and irrigation has been installed in accordance with the approved plans. Parkway and retention basin landscaping shall be installed prior to Final Map bonds being released.**

        i. Vegetation with spikes that may be harmful to pedestrians shall be a

minimum of three (3) feet away from walkways.

E. Walls. Where perimeter walls are shown on the development plan they shall be designed with aesthetic relief and be of high-quality architectural design to complement adjacent developments. In accordance with the Community Design Elements, the landscaped parkway and perimeter wall along all property lines shall be aesthetically enriched and subject to approval of Planning staff, with architectural review as deemed necessary. All top of wall elevations and adjacent finish grade elevations for the project perimeter and entry walls shall be subject to review and approval by the Planning Division and City Engineer. The applicant shall contact the adjacent property owners if grading outside the subdivision boundaries is required for construction of the perimeter walls. This shall be accomplished prior to issuance of any permit.

17. Future neighborhood signage shall be subject to approval and issuance of a separate sign permit or sign program.

III. PUBLIC WORKS

Prior to City Council Approval of the Final Map, the following Conditions shall be satisfied:

18. FORMATION AND/OR ANNEXATION TO CFD
Pursuant to Ordinance No. 485 the applicant shall provide evidence that formation of, or annexation to a Communities Facilities District (CFD) No. 1 – Police and Fire services – to pay the City annually for public service costs associated with this project has been initiated. This requires the submittal of an application fee, the preparation of a boundary map, and 6-8 weeks' processing time. The applicant is advised to begin the application process as soon as possible, because the CFD annexation must occur prior to issuance of Grading Permits, or prior to Final Map approval if there is one.

19. STUDIES AND CALCULATIONS REQUIRED
The applicant shall submit a soils report, geological and hydrology studies, and hydraulic calculations, as required by the City Engineer, prior to approval of the Grading Plan.

20. SECTION 30 COLORED SIDEWALK
Plans for the required Section 30 colored sidewalk, in accordance with City standards, shall be submitted to the Planning Division and City Engineer and shall be shown on the plan. The sidewalk shall have a medium broom finish on 4" thick P.C.C (Portland Cement Concrete). The color shall be Davis Co. "Yosemite Brown" or approved equal. Where the sidewalk or street improvement and landscape is located on private property, a public access easement shall be provided and recorded, subject to the approval of the City Engineer. The approved sidewalk shall be constructed along the project frontage and shall be maintained in perpetuity in a safe condition by the applicant.

21. GRADING & DRAINAGE PLAN
The applicant shall be required to submit a grading and drainage plan prepared by a licensed civil engineer to the City Engineer for plan check and approval. The grading and drainage plan shall be consistent with any and all conditions of approval associated with

any applicable subdivision map and any Development Permit entitlements issued for the subject project by the City or any other responsible public agency. The grading and drainage plan shall conform to all city policies, standards, and regulations applicable to the project. In addition, if the project involves grading and drainage issues related to Coachella Valley Water District (CVWD) facilities, written evidence of the District's approval shall be included with the submittal required by the City of Rancho Mirage.

22. STORMWATER RETENTION

The grading of the project shall be designed such that all storm water to the level of a 100-year frequency storm; worst case of the 1, 3, 6, or 24-hour duration, shall be retained on site. Per Municipal Code Section 15.64.140.B, if the project is less than 1 acre or if it is south of the Whitewater Flood Channel, the grading of the project may be designed for the drainage to be conveyed to an "acceptable disposal site as determined by the City Engineer". Surface streets are not considered "an acceptable disposal site" for common "nuisance water" from sprinklers and cleaning. Therefore, at a minimum, all projects shall make provisions to absorb such "nuisance water" to the satisfaction of the City Engineer. A Hydrology/Hydraulic Report, in accordance with the Riverside County Hydrology Manual, shall be submitted from a Registered Civil Engineer, showing how this stormwater is handled. **In accordance with the Section 30 master plan for drainage, there shall be catch basin/drywells per Public Works Standard Detail 311 or catch basins with pipes to retention basins, installed at the low corners of the Ginger Rogers Road and Landy Lane frontage. These facilities will be sized to handle the worst case 100-year storm for the project half-street frontage. Stormwater flows from upstream sources or flows greater than these amounts can be allowed to safely continue down the street.**

23. STANDARD AGREEMENT FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS

The applicant shall execute and submit the City of Rancho Mirage's Standard Agreement for Construction of Public Improvements for review and approval by the City Engineer and City Attorney.

24. STREET IMPROVEMENTS

Street improvements shall be required as specified below. Paved access in accordance with the City Master Plan of Streets and City Standards shall be provided to the subdivision. Plans for the construction of the required street improvements shall be designed by a California Registered Engineer and approved by the City Engineer prior to Final Map approval. All street construction shall be in conformance with these plans and the City's General Plan and Standard Details. Plans shall be approved prior to or concurrent with Final Development Plan approval and construction shall occur prior to occupancy. The developer shall furnish proof that any Sewer and Water Improvement Plans have been reviewed and approved by CVWD. The developer shall furnish proof that the Fire Marshal has approved the Water Plans and Street layout for the project.

A. **Public Streets – Landy Lane and Ginger Rogers Road**

i. Right-of-way along **Landy Lane and Ginger Rogers Road** at a width of **30** feet from centerline shall be dedicated to the City of Rancho Mirage. An easement for the **Section 30 Colored Meandering Sidewalk** shall also be dedicated **from 30 to 37 feet from centerline (7' wide)**.

ii. Curb and gutter shall be installed along the project frontage with the curb face at **18 feet from centerline**. Red curb will be applied to the project (north) side of the street to indicate "no parking, fire lane" in accordance with Riverside County Fire Department Access Requirements for Commercial and Residential Development Guideline OFM-01A, Sec. 2.A.6 and Sec. 6.A, unless a release of this requirement is obtained from the Fire Department. Asphalt paving shall be installed along the project in accordance with City Standards.

iii. Plans for the required **6-foot-wide "Yosemite Brown" colored meandering bike path** per Standard drawing 500, shall be submitted to the City Engineer, and shall be shown on the landscape, street, and grading plans and shall be constructed along the frontage. A sidewalk or alternative handicap accessible route shall be constructed from the bike path or sidewalk into the project. Where any meandering bike path is located on private property, a public access easement shall be provided and recorded subject to approval of the City Engineer.

iv. The design of the entry way shall be subject to the approval of the City Engineer.

v. Until such time as an alternative public storm drain system or street surface drainage system can be completed, this project must accept the responsibility for absorbing the water from the 100-year storm street drainage along the project frontage and the tributary area upstream.

vi. Landscape and irrigation plans for all public street parkways and median islands shall conform to City standards and be submitted for review and approval by the City Engineer and Planning Division. Boulders shall not exceed 15 inches in height within 3 feet of a public street curb. Canopy trees shall be placed a minimum of 10 feet from public street curb and a minimum of 3 from sidewalks. Palm trees shall be placed a minimum of 3 feet from public street curb with a minimum trunk height of 10 feet. Right of way lines shall be shown on the final landscape plan.

B. **Private Streets/Parking Lots**

i. Private street and/or parking lot paving shall consist of a minimum of 3" A.C. paving over 4" of compacted Class II aggregate base material. On private streets and parking lots, and as may be required by a condition of approval, decorative concrete or other surfacing materials shall be reviewed by Public Works for conformance to Public Works standards.

ii. On private streets and parking lots, non-standard curb and gutter may be acceptable if the City's standard drainage criteria are satisfied, and the specific non-standard curb and gutter is approved by the Department of Public Works.

iii. Private streets within the project shall be constructed with a minimum two-way travel way of 36 feet. Red curb will be applied to one side of the street and inside the 45 foot radius cul-de-sac to indicate "no parking, fire lane" in accordance with Riverside County Fire Department Access Requirements for Commercial and Residential Development Guideline OFM-01A, Sec. 2.A.6 and Sec. 6.A, unless a release of this requirement is obtained from the Fire Department. Any median islands shall have a minimum of 24 feet travel way clearance on either side of them, or as otherwise approved by the Fire Department. Private street paving shall consist of a minimum of 3" A.C. paving

over 4" of compacted Class II aggregate base material unless otherwise approved by the City Engineer.

25. DEDICATION OF PUBLIC UTILITY EASEMENTS
A ten (10) foot public utility easement adjacent to the curb and gutter and edge of pavement shall be provided by the property owner for all public and private streets, and for public streets where the public right-of-way is less than the required 10 feet. All necessary utilities: sewer, water, electric, phone, fiber optic communications, natural gas, and television cable shall be provided to the lots and along the property frontage, unless otherwise approved.

26. DEDICATION OF DRAINAGE EASEMENTS
All easements for drainage facilities necessary to accommodate the final approved Grading and Drainage Plan shall be offered for dedication to the appropriate serving agency. Such offer shall be incorporated on the Final Map or as required by the City Engineer.

27. UNDERGROUND UTILITIES REQUIRED
All existing or proposed Imperial Irrigation District, General Telephone, CATV, or other overhead service facilities, shall be installed underground in accordance with the provisions of Section 12.16 of the Rancho Mirage Municipal Code. The underground installation of all existing or proposed overhead distribution utility lines shall be completed and/or appropriate guarantee arrangements shall be entered into for any structure constructed pursuant to this approval as required by the City Engineer. Such guarantee arrangement shall be approved by the City administrative staff and the City Attorney and shall include the posting of improvement security adequate to secure the periphery of the subject property; and as identified above and as required in Section 12.16 of the Rancho Mirage Municipal Code.

28. SANITARY SEWER SYSTEM
A sanitary sewer system shall be required and shall be installed in accordance with the provisions established and set forth by the regulations of the Coachella Valley Water District, the Riverside County Department of Public Health, and/or the regional Water Quality Control Board. All necessary easements shall be provided. **In accordance with the Section 30 Lift Station Agreement approved in 2003, the subdivider shall pay the $6,688 Lift Station Reimbursement Fee. The Section 30 Lift Station Reimbursement Fee shall be paid prior to issuance of any permits.**

29. DOMESTIC WATER SYSTEM
A domestic water system shall be required and shall be installed in accordance with the provisions established and set forth by the regulations of the Coachella Valley Water District, the Riverside County Department of Public Health, and/or the regional Water Quality Control Board. All necessary easements shall be provided.

30. LOCAL AIR QUALITY MANAGEMENT PLAN (LAQMP)
The applicant shall prepare a Local Air Quality Management Plan (LAQMP) pursuant to Ordinance No. 855, Municipal Code Chapter 7.01. Said LAQMP shall detail the project's potential impact upon the air quality of the area and any necessary mitigation measures

and shall be submitted to the Public Works Department for review and approval prior to the issuance of the Grading Permit. For ease of preparing a LAQMP, the applicant may contact the Public Works Department regarding use of the LAQMP worksheet. Projects over 10 acres shall also submit the 8.5"x11" format Dust Control Plan required by the South Coast Air Quality Management District for review by the City. At the time of payment of the permit fees the developer shall submit a "dust control deposit" to be determined from the acreage and the current fee schedule.

31. SWPPP/NOI
Prior to issuance of Grading Permits, the Property Owner shall submit the completed Notice of Intent (NOI) form and site plan with the appropriate fee, to the State Water Quality Control Board for the General Construction Activity Storm Water Permit. The WDID number issued shall be placed on the cover sheet of the Grading Plans as Proof of Submittal. The SWPPP promised by the NOI is required to be kept on the project site and may be requested for viewing by City or Water Quality Control Board personnel.

32. BLOWSAND MITIGATION PLAN
Since this project is located in an area that is subject to occasional high winds and migrating sand, the subdivider shall be required to submit a blowsand mitigation plan prepared by a licensed civil engineer to the City Engineer for plan check and approval. The blowsand mitigation plan shall identify the specific measures and describe the specific procedures that will be implemented to adequately mitigate blowsand impacts on all of the project's on-site and off-site improvements. All improvements for blowsand protection shall be depicted on the project's grading and drainage plan. In addition, all marketing materials and CC&Rs shall identify that the project is located within a blowsand area.

33. CONSTRUCTION IMPROVEMENT AGREEMENT
The construction of all required public and private improvements, including but not limited to landscaping, sewer, water, curb and gutters, paving, drainage facilities, and other required improvements shall be completed prior to occupancy of any structure and/or the subdivider shall enter into an agreement, acceptable to the City, ensuring the construction of such improvements within eighteen (18) months of City Council approval of the Final Map.

34. WRITTEN VERIFICATION
Prior to release of bonds or financial guarantees, the applicant or his successor shall provide written verification that the improvements have been installed in accordance with the approved plans.

35. AS-BUILT PLANS
A complete set of "As-Built" Grading, Sewer, Water, Landscaping, Street, Storm Drain, and all other required improvement plans shall be submitted by the engineer of record for review and approval, prior to any occupancy or release of Subdivision Bonds.

36. SUBDIVISION MAP
A subdivision map shall be processed and recorded prior to any release of permits.

37. SECURITY
In accordance with the request of the Rancho Mirage Police Chief, the site shall be fenced and gated for security purposes. Screening material shall be placed on the fence to help block blowsand and to block views through the fence. If necessary, the applicant shall provide a state licensed private security officer during the time construction workers are not onsite.

38. PAD CERTIFICATION
Prior to release of Building Permits, a Pad Certification submitted from a Licensed Land Surveyor or Civil Engineer, attesting to the elevation matching the rough grade pad elevation shall be submitted to validate the rough grading completion.

39. COMPACTION REPORT
Prior to the release of Building Permits, the lot(s) for the building(s) shall have a compaction report submitted by a Geotechnical Engineer attesting to the buildable pad being compacted at least 90% of maximum relative density. If any over-excavation, or slopes steeper than 2:1, are needed for the building pad, a Geotechnical Engineer shall submit a document attesting to the acceptability of this non-standard earthwork in accordance with the recommendations of the preliminary soil report.

40. ASSESSMENT DISTRICT REAPPORTIONMENT
If the property to be subdivided is located within the boundaries of an Assessment District, assessments shall be reapportioned over the property to account for the newly created lots.

41. PARK FEES
Applicant shall pay all applicable parkland fees for the acquisition and/or development of community parks and recreational facilities in those amounts in effect at the time the grading permit is issued.

42. IMPROVEMENTS COMPLETED PRIOR TO OCCUPANCY
Prior to occupancy, the construction of all required public improvements, including but not limited to sewer, water, curb and gutters, paving to join, stormwater drainage facilities, and other required utility improvements shall be completed.

43. CVWD LETTER
Prior to occupancy, if applicable, a letter from Coachella Valley Water District (CVWD) shall be submitted stating that all the district fees have been paid and all requirements have been met for development.

IV. CITY ATTORNEY

Prior to City Council approval of the Final Map, the following Conditions shall be satisfied:

44. INDEMNITY AGREEMENT
The permittee shall defend, indemnify, and hold harmless the City, its agents, officers, and employees from any claim, action, or proceeding against the City or its agents, officers, or employees to attack, set aside, void or annul this permit approval. The City shall notify the permittee of any claim, action, or proceeding and the City shall cooperate

in the defense. If the City fails to notify the permittee of any claim, action or proceeding of which the City has written notice, the permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the City.

45. REIMBURSEMENTS
The permittee shall reimburse the City for any court and attorney's fees which the City may be required to pay as a result of any claim or action brought against the City because of this grant. Although the permittee is the real party in interest in an action, the City may, at its sole discretion, participate in the defense of the action, but such participation shall not relieve the permittee of any obligation under this Condition.

46. IMPROVEMENT SURETY
Pursuant to Chapter 15.64.280 of the Rancho Mirage Municipal Code, all public improvements proposed with the Development Plan submittal, or required by the adopted approval Conditions, shall be guaranteed by cash bonds, letters of credit, or other legal instruments acceptable to the City Attorney and City Council.

47. RELEASE OF PLANS
Written authorization must be obtained from any certified, licensed, or registered professional who signed the original building plans authorizing the plans to be made available by the City to all subsequent owners upon request (if on file with the City at the time of the request) for use by any subsequent owners solely for the construction, maintenance, operation, and use of the subject building(s) at the Project Site.

48. NOTICE TO CITY UPON DEFAULT, FORECLOSURE OR BANKRUPTCY
In the event that the applicant receives a notice of default from any lender in connection with funds loaned to the applicant for the proposed development, or that any security instrument given by the applicant to any lender is foreclosed upon whether through a trustee's sale or otherwise, or that the applicant files a petition for bankruptcy, the applicant shall immediately notify the City of such notice of default, foreclosure sale, and/or filing of the bankruptcy petition, as the case may be.

49. DECLARATION OF COVENANTS, CONDITIONS, AND RESTRICTIONS (CC&RS)
50. The subdivider shall submit a draft Declaration of Covenants, Conditions and Restrictions (CC&Rs) to the Engineering Division as part of the Final Map submittal. The CC&Rs shall demonstrate, to the satisfaction of the City Attorney, that the entire project will be developed and maintained in accordance with the intent and purpose of the Project approval. The approved CC&Rs shall be recorded concurrently with the Final Map.

51. The applicant shall submit documents for recordation which clearly prohibit installation of improvements in the common area by individual homeowners or documents which allow and govern installation of such improvements within the identified common areas. The documents shall be subject to approval of the City Engineer and City Attorney.

52. The CC&Rs shall be submitted to the City for review and shall contain provisions for a Homeowners' Association, with the unqualified right to assess owners of individual units for reasonable maintenance costs to common areas and improvements. The Homeowners' Association shall have the right to lien units of the owners who default in

the payment of any assessment so provided. Any deed of trust recorded prior to said CC&Rs shall be subordinated to the CC&Rs. Any lien imposed shall not be superior to any lien for property taxes or government assessments. The CC&Rs will be clearly marked to identify those sections addressing the Conditions of Approval.

53. **The CC&Rs and tract marketing materials shall identify that the project site is located in an area of high winds and blowing dust.**

54. **The CC&Rs shall require the Homeowners' Association and property owners to comply with the Section 30 Design Guidelines.**

55. MAINTENANCE OBLIGATIONS
The current and future property owner(s) shall be responsible for maintaining in compliance with all City standards for the same, the on-site and off-site landscaping and integrated architectural features required by this entitlement; all perimeter landscaping shall be maintained in a first-class condition. Landscape maintenance shall consist of regular watering mowing, pruning, fertilizing, clearing of debris and weeds, and the removal and replacement of irrigation systems, in compliance with all relevant and applicable provisions of the Rancho Mirage Municipal Code. Integrated architectural features must be kept in a manner which maintains the desirability of the immediate area and neighboring areas and respects the harmonious relationship with existing and adjoining developments. Due regard for preservation of each feature and its intended irrigation with surrounding landscaping, buildings, structures, screening, and signs is required. All features must be maintained in a manner commonly accepted by professionals who are experts in the care and preservation of each particular type of feature. A covenant to assure continued maintenance of on-site and off-site required landscaping and integrated architectural features by the current and future property owners or other liable entity, consistent with the terms and provisions of this condition of approval, shall be prepared in a format approved by the City Attorney and recorded in the Office of the Riverside County Recorder against all parcels created with this subdivision and any subsequent amendments thereto.

V. FIRE MARSHAL

56. The proposed project may have a cumulative adverse impact on the Fire Department's ability to provide an acceptable level of service. These impacts include an increased number of emergency and public service calls due to the increased presence of structures, traffic, and population. The project proponents/developers will be expected to provide for a proportional mitigation to these impacts via capital improvements and/or impact fees.

57. Fire Department emergency vehicle apparatus access road locations and design shall be in accordance with the California Fire Code, City of Rancho Mirage Municipal Code, and Riverside County Fire Department Standards. Plans must be submitted to the Fire Department for review and approval prior to building permit issuance.

58. Fire Department water system(s) for fire protection shall be in accordance with the California Fire Code, City of Rancho Mirage Municipal and Riverside County Fire

Department Standards. Plans must be submitted to the Fire Department for review and approval prior to building permit issuance.

59. Prior to Building Permit issuance, the required water system, including all fire hydrant(s), shall be installed, and accepted by the appropriate water agency and the County Fire Department prior to any combustible building material placed on an individual lot. Contact the Fire Department to inspect the required fire flow, street signs, all weather surfaces, and all access and/or secondary access. Approved water plans must be at the job site.

ATTACHMENT 2

Environmental Assessment Case No. EA23-0003
Variance Case No. VAR24-0002
Tentative Tract Map Case No. TTM23-0001

Tentative Tract Map No. 38636
72094 Ginger Rogers Road (APN: 685-080-002)



ATTACHMENT 3

CITY OF RANCHO MIRAGE

Planning Division
69-825 Highway 111
Rancho Mirage, CA 92270
Planning@RanchoMirageCA.gov
(760) 328-2266

PUBLIC HEARING NOTICE

CITY COUNCIL MEETING
Thursday, November 6, 2025 – 1:00 p.m.

Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) ("Project")

Applicant: Farhad Zomorodi

Request: Consideration to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 sq. ft. to 16,841 sq. ft. A private street is proposed, in addition to two retention basins and perimeter landscaping within the project common areas. The project requests approval of a variance to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 sq. ft. to 16,000 sq. ft. in order to be compatible with the established lot sizes of the immediate area. The project involves the demolition of an existing single-family residence built in 1958. No single-family residence architectural plans are proposed as part of this project. The Planning Commission recommended approval on October 9, 2025.

Location: 72094 Ginger Rogers Road (APN: 685-080-002)

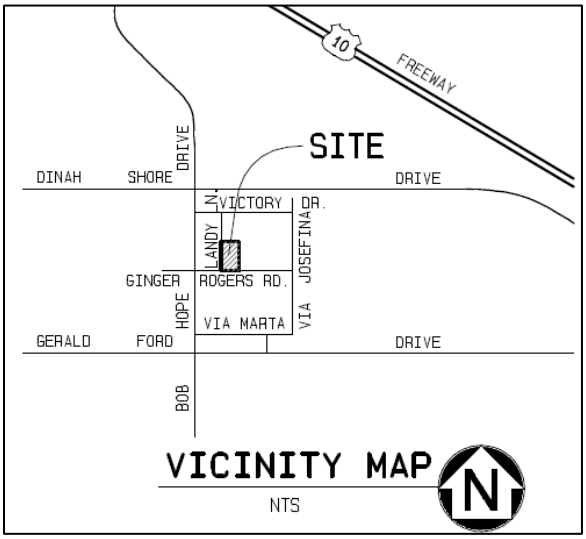
NOTICE IS HEREBY GIVEN that a Public Hearing will be held before the City of Rancho Mirage City Council regarding consideration of the above referenced applications pursuant to Rancho Mirage Municipal Code Titles 16 and 17. An Environmental Assessment form was submitted for the Project, and the determination was made that the Project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND). A Notice of Intent to Adopt a Mitigated Negative Declaration was published in *The Desert Sun* newspaper on June 3, 2025, and distributed to interested parties. The 30-day public review period for the Draft Mitigated Negative Declaration was from June 3, 2025, to July 2, 2025.

The Public Hearing will be held on Thursday, November 6, 2025, at 1:00 p.m., in the Council Chamber, 69-825 Highway 111, Rancho Mirage, California, at which time and place pertinent testimony will be heard. The file, including all environmental information, is available for public inspection at City Hall, Monday through Friday, between 8 a.m. and 5:00 p.m., and will be posted on the City's website with the publication of the City Council Agenda, to be posted at least 72 hours prior to the meeting.

Written testimony may be submitted to the City Clerk via email to CityClerk@RanchoMirageCA.gov, or mailed to City of Rancho Mirage, ATTN: City Clerk, 69-825 Highway 111, Rancho Mirage, CA 92270. Written testimony must be received no later than 10:00 a.m. on the day of the meeting to be considered by the City Council.

GOVERNMENT CODE § 65009 NOTICE: If you challenge this proposed activity in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the City Council sufficiently prior to the Public Hearing to enable its consideration by them.

Vicinity Map – Not to Scale



9-Lot Subdivision
72094 Ginger Rogers Road
Tentative Tract Map No. 38636
Initial Study/Mitigated Negative Declaration

Lead Agency:

City of Rancho Mirage

69-825 Highway 111

Rancho Mirage, California 92270

Prepared by:

PGN

PO Box 2473, Menifee, CA 92586-1473

May 2025

ENVIRONMENTAL INITIAL STUDY
9 Lot Subdivision

Project Title:	9-Lot Subdivision – Tentative Tract Map No. 38636
City Project No:	Environmental Assessment Case No. EA23-0003, Major Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001
Lead Agency Name and Address:	City of Rancho Mirage 69-825 Highway 111 Rancho Mirage, California 92270
Contact Person and Phone Number:	Joy Tsai - Senior Planner (760) 328-2266 Ext. 256
Project Sponsor/ Applicant Name and Address:	72094 Ginger Rogers Road, LLC Attention: Farhad Zomorodi PO Box 10544 Beverly Hills, CA 90213
Project Location:	5.04 gross acres at the northeast corner of Ginger Rogers Road and Landy Lane in the City of Rancho Mirage, County of Riverside, California. Portion of Township 4 South, Range 6 East, Section 30, San Bernardino Principal Meridian USGS Cathedral City, California Quadrangle. Latitude 33° 47’ 43.40” N and Longitude 116° 24’ 14.09” W.
Accessor Parcel Number:	685-080-002
General Plan Designation:	Very Low Density 2 du/ac maximum (R-L-2)
Zoning Designation:	R-L-2 (Residential Very Low Density) Zone

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CHAPTER 1: PROJECT DESCRIPTION

The City of Rancho Mirage is reviewing applications for a subdivision and a major variance. The proposed Project would involve the subdivision of 5.04-gross acres into nine residential lots, one private roadway lot, two retention basin lots and two landscaped lots under Tentative Tract Map Case No. TTM23-0001 (Tentative Tract Map No. 38636). The individual residential lot sizes would range from 16,122 to 16,841 square feet. The lots would be arranged around the proposed private cul-de-sac roadway. Two retention basins consisting of 5,683 and 5,640 square feet, respectively, would be located along the site's southern boundary corner. The Major Variance application (VAR24-0002) is a request to modify the minimum lot size specified under Rancho Mirage Municipal Code Section 17.08.020 Residential Districts General Development Standards, Table 2-3 Residential Zones General Development Standards Requirements by Individual Zoning District for R-L-2 (Residential Very Low Density) from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The Project will include the demolition of an existing single-family residence located at 72049 Ginger Rogers Road. The residence was built in 1958 and is approximately 1,095 square feet consisting of two bedrooms and one bath.

The General Plan Land Use Designation of the Project site is R-L-2 Very Low Density Residential (0-2 du/ac). This density designation provides for single-family residential development typically on individual lots of about 0.5-acre. Planned residential developments are also an appropriate form under this designation. Lands with this designation may serve to buffer more dense residential development from estate residential uses. The Zoning designation for the parcel is *Very Low Density Residential* (R-L-2). The parcel is subject to the Section 30 Design Guidelines and Master Circulation Plan.

Project Location

The proposed Project site is located in the northeastern portion of the City of Rancho Mirage. The City is located in the eastern portion of Riverside County within the Coachella Valley area. Rancho Mirage is generally bounded on the north by Thousand Palms and Cathedral City; on the east by Palm Desert; on the south by Palm Desert and unincorporated Riverside County; and on the west by Cathedral City. Regional access to the City of Rancho Mirage is provided by the Interstate 10 (I-10) Freeway which extends across the northernmost portion of the City. The I-10 Freeway is located approximately 1.18 miles northeast of the Project site. The location of Rancho Mirage, in a regional context, is shown in Exhibit 1. A regional topographic map is provided in Exhibit 2.

The proposed Project site is located at the northeast corner of Ginger Rogers Road and Landy Lane in the City of Rancho Mirage, County of Riverside, California. The Project site is comprised of one parcel identified as Assessor Parcel Number 685-080-002. It is identified as being a portion of Township 4 South, Range 6 East, Section 30, San Bernardino Principal Meridian on the USGS Cathedral City, California Quadrangle. The proposed Project's latitude and longitude is 33° 47' 43.40" N and 116° 24' 14.09" W. A Project vicinity map is provided in Exhibit 3. The Tentative Tract Map is shown on Exhibit 4.

Access and Parking

Access to the Project site would be provided from Ginger Rogers Road through a gated entry point, which would allow cars onto a proposed private street with a cul-de-sac located in the middle of the Project site. The proposed private street would provide access to each residential lot on the site. The internal roadway would have a curb-to-curb width of approximately 37 feet. The internal roadway is referred to as "Lot A" on the site plan. With the development of future housing, each unit would be provided with an enclosed garage that would accommodate two vehicles.

Utilities

The Project site is within the Imperial Irrigation District's (IID) power service area. Natural gas service is provided by the Southern California Gas Company. Currently, the existing site is occupied by one single-family residence that is served with electricity. The proposed development will connect a new 8-inch water line and a new 8-inch sewer line from the internal private road and Ginger Rogers Road. There are no existing water or wastewater treatment plants, electric power plants, telecommunications facilities, natural gas facilities, or stormwater drainage infrastructure located on-site. Groundwater is the primary source of domestic water supply in the Coachella Valley. The Coachella Valley Water District (CVWD) is the largest provider of potable water in the valley and currently provides potable water in the project vicinity. CVWD operates 6 water reclamation plants and maintains more than 1,000 miles of sewer pipelines and more than 30 lift stations that transport wastewater to the nearest treatment facility and nearly 6.3 billion gallons of wastewater are treated yearly. In addition, wastewater generated by the Project will be conveyed to CVWD Wastewater Reclamation Plant Number 10 in Palm Desert (WRP-10). Per the 2015 CVWD Urban Water Management Plan, WRP-10 has a capacity to treat 18 million gallons per day (MGD). Solid waste disposal and recycling services for the City of Rancho Mirage is provided by Burrtec. Solid waste and recycling collected from the proposed project will be hauled to the Edom Hill Transfer Station. Waste from this transfer station is then sent to a permitted landfill or recycling facility outside of the Coachella Valley. These include Badlands Disposal Site, El Sobrante Sanitary Landfill and Lamb Canyon Disposal Site.

Tentative Tract Map Characteristics

The proposed Project would involve the subdivision of 5.04-gross acres into 9 residential lots, one private roadway lot, two retention basin lots and two landscaped lots under Tentative Tract Map Case No. TTM23-0001 (Tentative Tract Map No. 38636). The individual residential lot sizes would range from 16,122 to 16,841 square feet. The lots would be arranged around the proposed private cul-de-sac roadway. Two retention basins consisting of 5,683 and 5,640 square feet, respectively, would be located along the site's southern boundary corner. The Project is summarized below in Table 1.

Table 1 Project Summary

Lot	Description	Lot Area
Lot 1	Single-Family Residential	16,617 sq. ft.
Lot 2	Single-Family Residential	16,191 sq. ft.
Lot 3	Single-Family Residential	16,184 sq. ft.
Lot 4	Single-Family Residential	16,299 sq. ft.
Lot 5	Single-Family Residential	16,841 sq. ft.
Lot 6	Single-Family Residential	16,122 sq. ft.
Lot 7	Single-Family Residential	16,186 sq. ft.
Lot 8	Single-Family Residential	16,191 sq. ft.
Lot 9	Single-Family Residential	16,786 sq. ft.
Lot A	Private Road	25,866 sq. ft.
Lot B	Retention Basin	5,683 sq. ft.
Lot C	Retention Basin	5,640 sq. ft.
Lot D	Landscape Lot	5,133 sq. ft.
Lot E	Landscape Lot	730 sq. ft.

Source: S.D. Engineering and Associates. Tentative Tract Map No. 38636, March 2025.

Construction Characteristics

The Project is anticipated to be built in one phase. The duration of construction is unknown at this time. For technical study modeling purposes, a start date of January 2025 was utilized with a completion date of early February 2026 and the Project being operational in 2026. The construction schedule utilized represents a “worst-case” analysis scenario even if construction was to occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent. The actual construction dates will also be dependent on processing improvement plans through the Imperial Irrigation District and their acceptance and approval of said improvement plans.

The key construction tasks that could occur are outlined in the paragraphs below.

- Task 1 Demolition and Grading. The existing onsite improvements would be removed, and the site would be graded and ready for construction. The typical heavy equipment used

during this site preparation phase would include graders, bulldozers, off-road trucks, back-hoes, and trenching equipment. This task would require 28 days to complete.

● Task 2 Building Construction. The new housing units would be constructed during this component. This task includes the site improvements including the installation of utilities and backbone infrastructure. The typical heavy equipment used during this construction phase would include off-road trucks, cranes, and fork-lifts. This task will take approximately eight months to complete.

● Task 3 Paving and Finishing. This concluding task would involve the paving and finishing. The typical heavy equipment used during this phase would include trucks, backhoes, rollers, pavers, and trenching equipment. The completion of this phase will take approximately eighteen days to complete.

Environmental Setting and Surrounding Land Uses

The relatively level 5.04-acre site ranges from 325 feet above mean sea level (AMSL) to 330 feet AMSL. The southwestern portion of the Project site is occupied by an older single-family residence. The only mature trees located within the property are located in the yard areas associated with this residence. The dominant plant community is a very sparse creosote bush scrub, dominated by creosote bush (*Larrea tridentata*). Other shrub species include Emory's indigo bush (*Psorothamnus emoryi*) and desert globemallow (*Sphaeralcea ambigua*). Annual flowering species observed include fanleaf crinklemat (*Tiquiila plicata*), Booth's desert primrose (*Eremothera boothii*), desert lantern (*Oenothera deltoides*) and desert needlegrass (*Pallafoxia arida var. arida*). Non-native species included a mix of weedy plant species such as Sahara mustard (*Brassica tournefortii*) and Mediterranean grass (*Schismus barbatus*) found scattered throughout the site. Landscape species such as oleander (*Nerium oleander*) and European olive (*Oleo europea*) grow along the margins of the property and are self-seeded individuals from adjacent development. No amphibians or reptiles were observed during the survey. Bird species were observed during the field surveys included horned lark (*Eremophila alpestris*) and common raven (*Corvus corax*).

Land uses and development located in the vicinity of the proposed Project site are outlined below:

West: Landy Lane abuts the west side of the Project site. Undeveloped land, senior living community and office buildings are located to the west of Landy Lane. These parcels are designated as Office (O) with the following uses: Rancho Mirage Terrace Senior Living Community, Desert Periodontics, Weil Institute of Critical Care Medicine and the Tolerance Education Center.

North: Single-family residential properties. These parcels are designated as Very Low Density Residential (R-L-2).

South: Ginger Rogers Road abuts the south side of the Project site. Vacant, undeveloped land is located south of Ginger Rogers Road. These parcels are designated as Very Low Density Residential (R-L-2).

East: Single-family residential properties. These parcels are designated as Very Low Density Residential (R-L-2).

An aerial photograph of the Project site and the surrounding area is provided as Exhibit 3.

Other Public Agencies Whose Approval is Required

A Discretionary Action is an action taken by a government agency (for this Project, the government agency is the City of Rancho Mirage) that calls for an exercise of judgment in deciding whether to approve a Project. The following discretionary approvals are required:

- Approval of Major Variance Case No. VAR24-0002;
- Approval of Tentative Tract Map Case No. TTM23-0001 (TTM 38636);
- Approval of the Mitigated Negative Declaration (MND); and
- The adoption of the Mitigation Monitoring and Reporting Program (MMRP).

Although land use authority is provided by the City of Rancho Mirage, the Project may be subject to additional permits and/or fees by other public agencies. A summary of these additional requirements is as follows:

Standard permits through the Colorado River Basin Regional Water Quality Control Board for compliance with NPDES standards. These include the following: Construction Stormwater General Permit; Notice of Intent to Comply with Section 402 of the Clean Water Act, Construction Stormwater Pollution Prevention Plan (SWPPP); and Approval of O&M SWPPP.

The Project will be subject to the regional Transportation Uniform Mitigation Fee (TUMF) as administered by the Riverside County Transportation Commission.

Clearance will also be required from the Coachella Valley Water District for domestic water and sewer connections.

Tribal Consultation

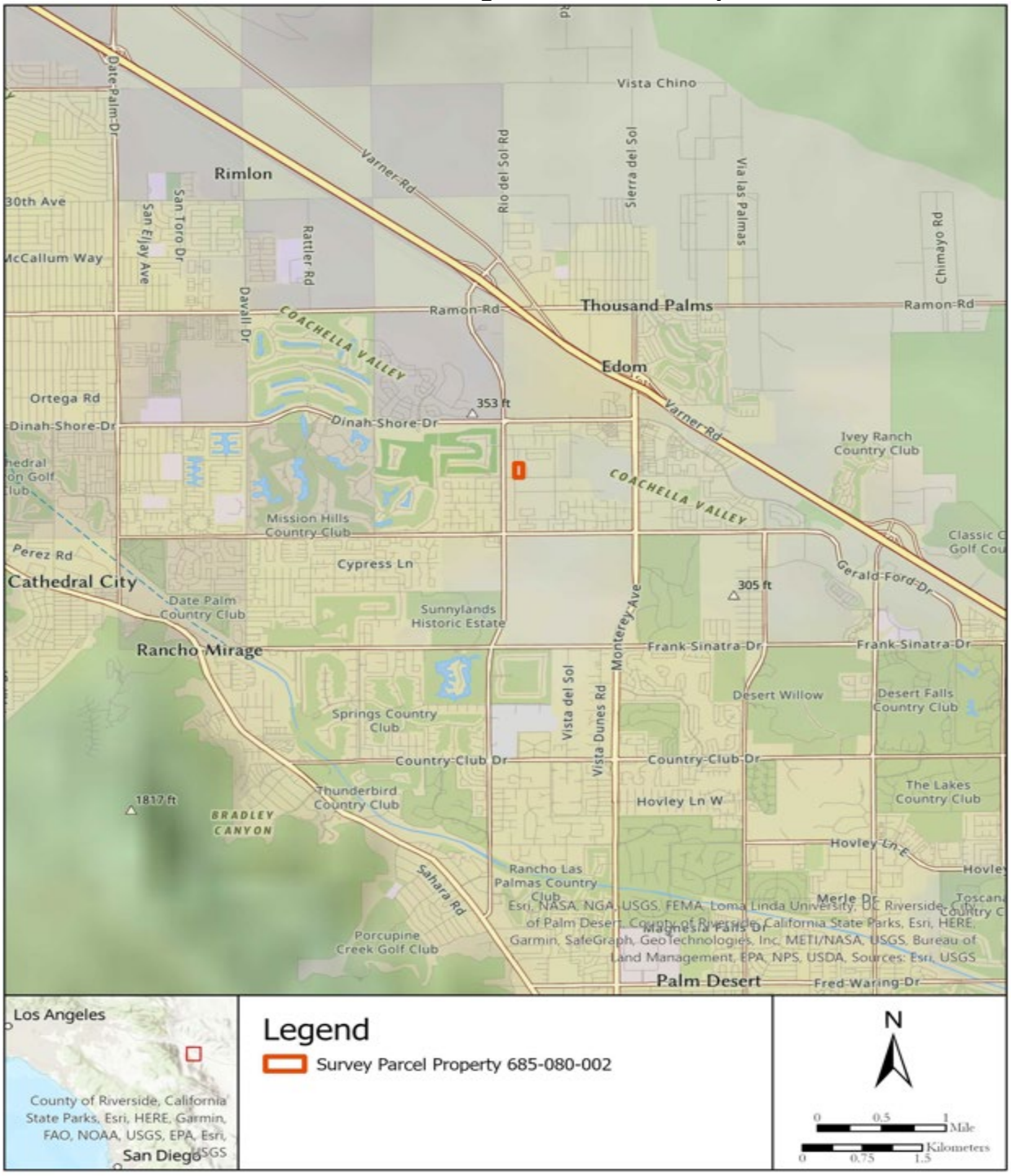
All potentially interested tribes identified by the Native American Heritage Commission (NAHC) were contacted pursuant to Assembly Bill 52 (AB 52) for information regarding their knowledge of cultural resources that were within or near the Project area. These groups include the following:

- Agua Caliente Band of Cahuilla Indians

- Augustine Band of Cahuilla Indians
- Cabazon Band of Cahuilla Indians
- Cahuilla Band of Indians
- Los Coyotes Band of Cahuilla and Cupeño Indians
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- Ramona Band of Cahuilla
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Torres-Martinez Desert Cahuilla Indians

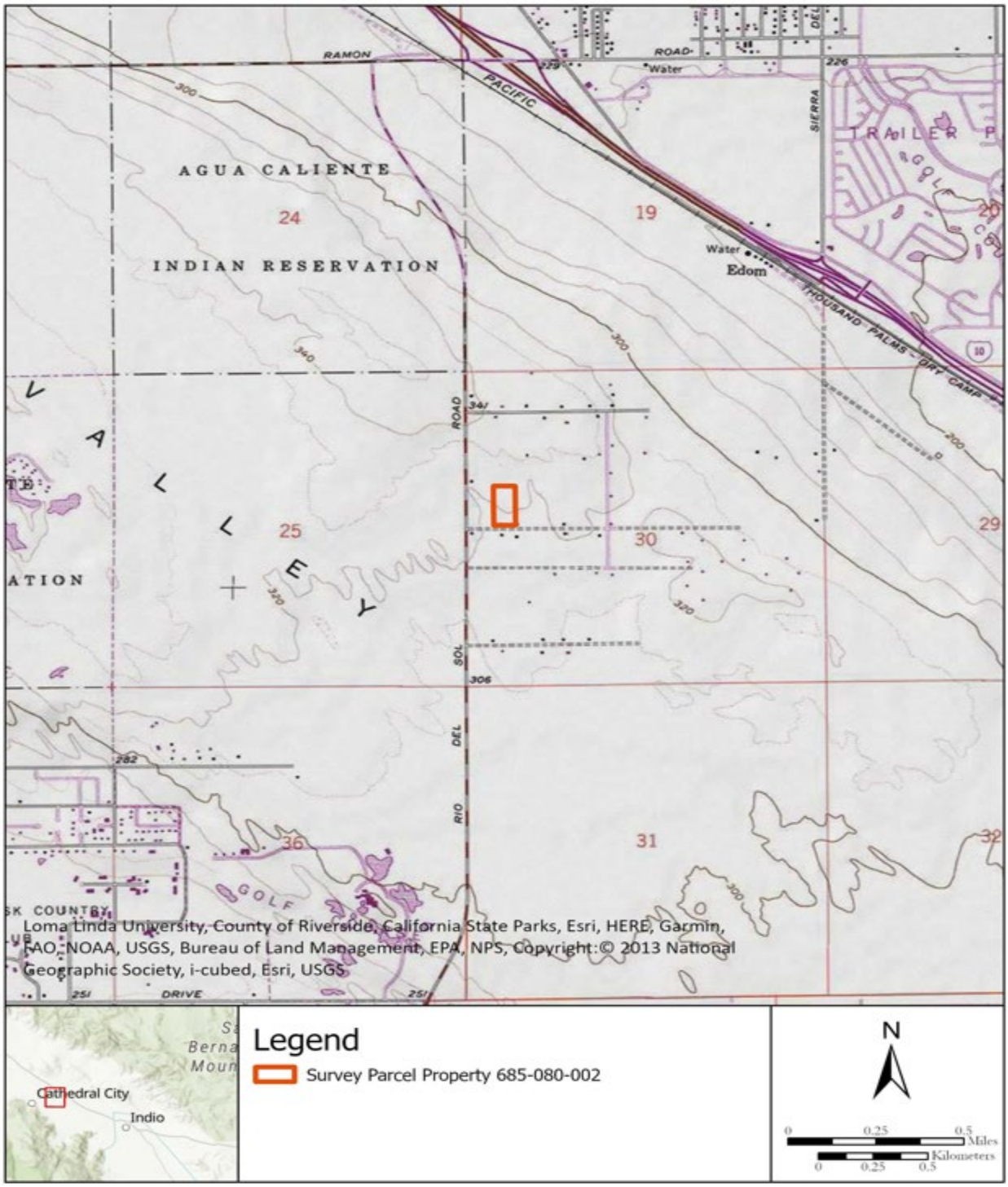
Three tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, and Morongo Band of Mission Indians) provided a response to the AB-52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on July 31, 2024. The Agua Caliente Band of Cahuilla Indians was the only tribe to request a formal consultation in their letter dated August 22, 2024. They concluded their consultation on September 11, 2024, with the recommendation that a condition of approval be added to the Project.

Exhibit 1 Regional Location Map



Source: Natural Resources Assessment

Exhibit 2 Regional Topographic Map



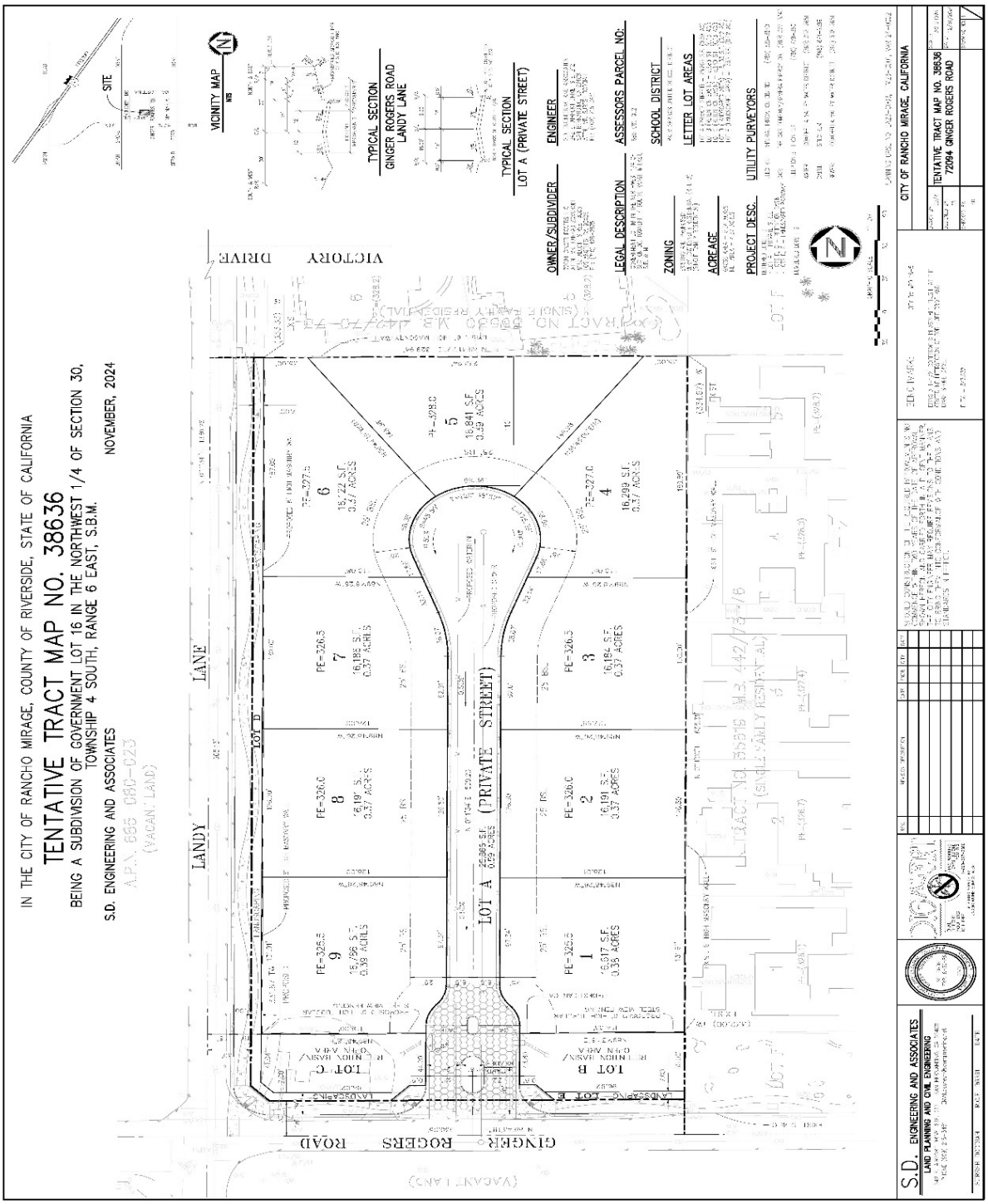
Source: Natural Resources Assessment

Exhibit 3 Project Vicinity Map



Source: NearMap, 2024

Exhibit 4 Tentative Tract Map No. 38636



Source: S.D. Engineering and Associates

CHAPTER 2: ENVIRONMENTAL ANALYSIS AND DETERMINATION

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Energy
☒ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Evaluation of Environmental Impacts:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.

b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify a) the significance criteria or threshold, if any, used to evaluate each question; and b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Determination: (To be completed by the Lead Agency) On the basis of this initial evaluation:

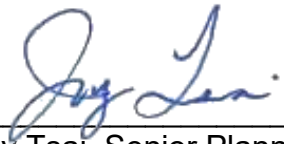
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



5/27/2025

Joy Tsai, Senior Planner
City of Rancho Mirage

Date:

Environmental Checklist and Discussion:

The following checklist evaluates the proposed Project's potential adverse impacts. For those environmental topics for which a potential adverse impact may exist, a discussion of the existing site environment related to the topic is presented followed by an analysis of the Project's potential adverse impacts. When the Project does not have any potential for adverse impacts for an environmental topic, the reasons why there are no potential adverse impacts are described.

1 - Aesthetics

AESTHETICS -- Would the project**:**	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Sources: City of Rancho Mirage 2017 General Plan Update adopted November 16, 2017; Rancho Mirage Municipal Code, Google Earth, Earth viewer, S.D. Engineering and Associates, Tentative Tract Map No. 38636, November 25, 2024 and State of California, Department of Transportation, California Scenic Highway Mapping System.

1.1 Setting:

The Coachella Valley and the Project site are distinguished by the low-lying desert valley floor surrounded by the high terrain of the San Jacinto, San Bernardino, Little San Bernardino, and

Santa Rosa Mountains. These contrasting viewsheds result in open space and mountain scenery that is a major component of the aesthetic quality of the area. The San Jacinto, San Bernardino and Santa Rosa Mountains Ranges rise over the valley floor at elevations consisting of 11,489 feet (3,502 meters) 8,716 feet (2,657 meters), 10,834 feet (3,302 meters), respectively. Views from the subject site include the San Jacinto Mountains (to the west and southwest), Santa Rosa Mountains (to the southwest), San Bernardino Mountains (to the north and northwest), and the Little San Bernardino Mountains (to the northeast). Views of the San Jacinto (west and southwest) and Santa Rosa Mountains (southwest) are clearly visible from the Project site. Views of the San Bernardino (north and northwest) and Little San Bernardino Mountains (northeast) are slightly visible but primarily obstructed by existing development and topography.

The evaluation of aesthetics and aesthetic impacts is generally subjective, and it typically requires the identification of key visual features in the area and their importance. The characterization of aesthetic impacts involves establishing the existing visual characteristics including visual resources and scenic vistas that are unique to the area. Visual resources are determined by identifying existing landforms (e.g., topography and grading), views (e.g., scenic resources such as natural features or urban characteristics), and existing light and glare characteristics (e.g., nighttime illumination). Changes to the existing aesthetic environment associated with the proposed Project's implementation are identified and qualitatively evaluated based on the proposed modifications to the existing setting and the viewers' sensitivity. The Project-related impacts are then compared to the context of the existing setting, using the threshold criteria discussed above.

The natural setting of the Rancho Mirage area is critical to its overall visual character and provides scenic vistas for the community. The Santa Rosa Mountains and the foothills (including the Indio Hills), provide a natural, scenic backdrop to the Rancho Mirage community. The Santa Rosa Mountains are part of the Santa Rosa and San Jacinto Mountains National Monument.

1.2 Discussion of Impacts:

a) IMPACT: Less than Significant Impact.

The Project site is located in a semi-developed urban area of the City and surrounded by vacant, undeveloped land, residential homes, and commercial development. Development allowable under the proposed Project would be similar in nature to the existing residential development to the north and east, and would therefore not impede views of, or otherwise substantively affect scenic vistas or access to scenic vistas. Prior to development of the Project site, the City will review and approve the future architectural plans to ensure the proposed development meets the City's development standards for the Very Low Density Residential land use designation. Based on the preceding, the Project would not have a substantial adverse effect on scenic vistas and impacts would be less than significant.

b) IMPACT: Less than Significant Impact.

According to the City's General Plan, the majority of the City's roadways provide views to the San Jacinto and San Bernardino Mountains; however, no surrounding roadways are designated by the state as scenic highways. State Route 111 (SR 111) is considered to be an Eligible State Scenic Highway, though this roadway is not officially designated as such. This

segment of SR 111 runs from Interstate 10 near Whitewater to Route 74 near Palm Desert. Due to existing developments and the distance of approximately 4 miles to the southwest between SR-111 (at the corner of Frank Sinatra Drive and Highway 111) and the Project site, the Project site is not visible to vehicles driving along SR-111. According to the Rancho Mirage General Plan, Bob Hope Drive (located approximately 460 feet to the west of the site), is a City-designated Scenic Road. In addition to the foregoing, the project property is currently absent of any historic buildings, structures or other former permanent improvements that would have any aesthetic value. In addition, there are no historic buildings nor any unique geologic or topographic features such as rock outcrops, bodies of water, ridges or canyons found on or within the Project site. Therefore, due to topography and intervening development, the proposed Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Impacts would be less than significant.

c) IMPACT: Less than Significant Impact.

As mentioned previously, the Project site is located in a semi-urbanized area. Implementation of the Project would result in the visual conversion of the site from vacant, undeveloped land to nine single-family residential lots. The Project would be compatible with the size, scale, and aesthetic features of other existing single-family homes located to the north and east of the Project site. Furthermore, the Project would be required to comply with the applicable development standards and design guidelines in the City of Rancho Mirage Municipal Code, which regulates the visual quality of new development and ensures that new development does not detract from any scenic attributes/qualities in the surrounding area. Because the Project is located in a semi-urbanized area and because the Project would not conflict with applicable development standards, impacts would be less than significant.

d) IMPACT: Less than Significant Impact.

Under existing conditions, the Project site contains one single-family residence. The Project would introduce new sources of lighting, including streetlights and security lighting. The nearest light sensitive receptors are the existing residential units located to the north and east of the project site. In addition, the properties located to the north and east are zoned for single-family residential development. Subject to City review and approval, all Project lighting would be required to conform to regulations, guidelines, and standards established under the City's Municipal Code Section 17.18.050, Exterior glare, heat, and light, which ensures adequate lighting for public safety while also minimizing light pollution and glare and public nuisances. Riverside County Ordinance Number 655 regulates light pollution in the County. Ordinance No. 655 restricts the use of certain light fixtures emitting into the night sky undesirable light rays which have a detrimental effect on astronomical observation and research. The Project would be required to comply with the County's standards. Since the proposed Project would be required to adhere to both the City's and County's light and glare requirements, the impacts would be less than significant.

1.3 Mitigation Measures: None required.

2 - Agriculture and Forestry Resources

AGRICULTURE AND FORESTRY **RESOURCES** – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Sources: Rancho Mirage General Plan 2017; California Department of Conservation, Farmland Mapping & Monitoring Program; and Riverside County Map My County

2.1 Setting

The City of Rancho Mirage contains no agricultural or forest lands, and no lands are designated for agricultural or forestry purposes in the General Plan. Agricultural production occurs in the eastern Coachella Valley, more than 10 miles east of the City. According to

California Department of Conservation (CDC), the Project site is considered as "Other Land".

The California Land Conservation Act of 1965, or the Williamson Act, allows a city or county government to preserve agricultural land or open space through contracts with landowners. Contracts last 10 years and are automatically renewed unless a notice of nonrenewal is issued.

The proposed Project would involve the subdivision of the 5.04-acre Project site into nine-lot residential lots. The common landscaped areas would total 5,863 square feet. Two retention basins would be located on the site's southern boundary and would consist of 11,323 square feet combined. The Project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The relatively level 5.04-acre site ranges from 325 feet above mean sea level (AMSL) to 330 feet AMSL. The southernmost portion of the Project site is occupied by an older single-family residence. The only mature trees located within the property are located in the yard areas of this residence. The remainder of the Project site consists of both native and non-native shrubs and grasses. According to the California Department of Conservation, the Project site and the adjacent properties do not contain any areas of Farmland of Statewide Importance, and no agricultural uses are located onsite or adjacent to the property.

2.2 Discussion of Impacts:

a) IMPACT: No Impact.

According to the California Department of Conservation, the Project site and the adjacent properties do not contain any areas of Farmland of Statewide Importance, and no agricultural uses are located onsite or adjacent to the property. According to the California Farmland Mapping and Monitoring Program the proposed Project is located in a portion of Rancho Mirage designated as "Other Land". This category is land that is not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as "Other Land." The Project site and the properties to the north and east are designated as "Other Land." Properties to the south and west are classified as Urban and Built-Up Land. The Project site is not located in an area where the existing zoning promotes agricultural uses or is otherwise classified as farmland. Therefore, the implementation of the proposed Project would not involve the conversion of any prime farmland, unique farmland, or farmland of statewide importance to urban uses. As a result, no impacts would occur.

b) IMPACT: No Impact.

The Project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The southwestern portion of the Project site is occupied by an older single-family residence and there are no agricultural uses located within the site that would be affected by the Project's implementation. According to the California Department of Conservation Division of Land Resource Protection, the Project site is not subject to a Williamson Act Contract. As a result, no impacts on existing Williamson Act Contracts would result from the proposed Project's implementation.

c) IMPACT: No Impact.

There are no forest lands or timber lands located within or adjacent to the site. Furthermore, the site's existing zoning designation does not contemplate forest land or timber land uses. As a result, no impacts will occur.

d) IMPACT: No Impact.

No forest lands are located within the Project site. The proposed use would be restricted to the site and would not affect any land under the jurisdiction of the Bureau of Land Management. As a result, no loss or conversion of forest lands to urban uses would result from the proposed Project's implementation.

e) IMPACT: No Impact.

The Project would not involve the disruption or damage of the existing environment that would result in a loss of farmland to nonagricultural use or conversion of forest land to non-forest use because the Project site does not contain any significant vegetation. As a result, no farmland conversion impacts would occur.

2.3 Mitigation Measures: None required.

3 - Air Quality

AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Sources: Ganddini Group, Inc., *TTM 38636 Air Quality, Global Climate Change, and Energy Impact Analysis, City of Rancho Mirage* dated October 24, 2023, U.S. EPA, California Air Resources Board https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations, 2022, and South Coast AQMD https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf, 2023.

3.1 Setting

The proposed Project would involve the subdivision of the 5.04-acre Project site into nine-lot residential lots. The individual lots would be arranged around the proposed private cul-de-sac roadway. The Project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The following criteria pollutants are evaluated in this ISMND:

● Ozone (O3) is a nearly colorless gas that irritates the lungs, and damages materials and vegetation. Ozone is formed by photochemical reaction (when nitrogen dioxide is broken down by sunlight).

● Carbon Monoxide (CO) is a colorless, odorless toxic gas that interferes with the transfer of oxygen to the brain and is produced by the incomplete combustion of carbon-containing fuels emitted as vehicle exhaust.

● Nitrogen Oxide (NO_x) is a yellowish-brown gas, which at high levels can cause breathing difficulties. NOx is formed when nitric oxide (a pollutant from burning processes) combines with oxygen.

● Sulfur Dioxide (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms.

● PM_{10} and $PM_{2.5}$ refers to particulate matter less than ten microns and two and one-half microns in diameter, respectively. Particulates of this size cause greater health risks than larger-sized particles since fine particles can more easily cause irritation.

● Reactive Organic Gases (ROG) refers to organic chemicals that, with the interaction of sunlight photochemical reactions may lead to the creation of "smog."

Projects in the Salton Sea Air Basin (SSAB) generating construction-related emissions that exceed any of the following emissions thresholds are considered to be significant under CEQA:

● 75 pounds per day of reactive organic compounds;
● 100 pounds per day of nitrogen dioxide;
● 550 pounds per day of carbon monoxide;
● 150 pounds per day of PM_{10};
● 55 pounds per day of $PM_{2.5}$; or,
● 150 pounds per day of sulfur oxides.

A project would have a significant effect on air quality if any of the following operational emissions thresholds for criteria pollutants are exceeded:

● 55 pounds per day reactive organic compounds;
● 55 pounds per day of nitrogen dioxide;
● 550 pounds per day of carbon monoxide;
● 150 pounds per day of PM_{10};
● 55 pounds per day of $PM_{2.5}$; or,
● 150 pounds per day of sulfur oxides.

As shown in Table 2, Salton Sea Air Basin Attainment Status, below, the SSAB has been designated by the EPA as a federal non-attainment area for ozone and fine particulate matter (PM_{10}). Currently, the Basin is in attainment with the national ambient air quality standards for carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), and fine particulate matter ($PM_{2.5}$). The Basin has been designated by the California Air Resources Board (CARB) as a non-attainment area for Ozone and PM_{10}.

Table 2 Salton Sea Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Unclassified/Attainment

Nitrogen dioxide	Attainment	Unclassified/Attainment
Sulfur dioxide	Attainment	Unclassified/Attainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Attainment	Unclassified/Attainment

Sources: U.S. EPA, California Air Resources Board https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations (2022).

Many air quality impacts that derive from dispersed mobile sources, which are the dominant pollution generators in the basin, often occur hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the SSAB with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. A regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 3, SCAQMD Air Quality Significance Thresholds, below.

Table 3 SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction (lbs/day)**	**Operation (lbs/day)**
NO_x	100	55
VOC	75	55
PM_{10}	150	150
$PM_{2.5}$	55	55
SO_x	150	150
CO	550	550
Lead	3	3

Source: South Coast AQMD https://www.aqmd.gov/docs/default-source/ceqa/handbook/south-coast-aqmd-air-quality-significance-thresholds.pdf (2023)

3.2 Discussion of Impacts:

a) IMPACT: Less than Significant Impact.

The SCAQMD has established the Air Quality Management Plan (AQMP) to achieve State and Federal air quality standards. On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the National Ambient Air Quality Standards (NAAQS) are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated

with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NO_x) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017, the CARB approved the 2016 AQMP. The primary goal of this AQMP is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

On June 21, 2002, the SCAQMD adopted the 2002 Coachella Valley PM_{10} State Implementation Plan (CVSIP). The 2002 CVSIP, which included a request for extension of the PM_{10} deadline and met all applicable federal Clean Air Act requirements, including a Most Stringent Measures analysis, control measures, and attainment demonstration. The U.S. EPA approved the 2002 CVSIP on April 18, 2003. At the time of adoption, the AQMD committed to revising with the 2002 CVSIP with the latest approved mobile source emissions estimates, planning assumptions and fugitive dust source emission estimates, when they became available.

The 2003 CVSIP updates those elements of the 2002 CVSIP; the control strategies and control measure commitments have not been revised and remain the same as in the 2002 CVSIP. The 2003 CVSIP contains updated emissions inventories, emission budgets, and attainment modeling. It requests that the U.S. EPA replace the approved transportation conformity budgets in the 2002 CVSIP with those in the 2003 CVSIP. U.S. EPA approved these budgets on March 25, 2004, with an effective date of April 9, 2004.

In May 2022, the SCAQMD completed the 2022 Draft AQMP. The 2022 Draft AQMP is focused on attaining the 2015 8-hour ozone standard (70 ppb) for the South Coast Air Basin and Coachella Valley by 2037. The Draft 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emission technologies, when cost-effective and feasible, and low NO_x technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other Clean Air Act measures to achieve the 2015 8-hour ozone standard. The 2022 AQMP was adopted December 2, 2022, by SCAQMD Governing Board. The 2022 AQMP was approved and adopted by CARB on January 26, 2023.

A project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed Project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed Project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed Project with the AQMP.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed Project would interfere with the region's ability to comply with Federal and State air quality standards. If the

decision-makers determine that the proposed Project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A proposed Project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.

2) Whether the project will exceed the assumptions in the AQMP in 2022 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in the Ganddini Group study, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. The Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance. Therefore, the proposed Project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed Project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed Project are based on the same forecasts as the AQMP. The 2020-2045 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2020) includes chapters on: the challenges in a changing region, creating a plan for our future and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this Project, the City of Rancho Mirage Land Use Plan defines the assumptions that are represented in the AQMP.

The Project site is currently designated as Very Low Density Residential (R-L-2) on the City of Rancho Mirage General Plan Land Use Map. The proposed Project includes development of the approximately 5.04-acre Project site with nine single-family dwelling units. Therefore, the proposed Project would not result in an inconsistency with the current land use designation in

the City's General Plan. Therefore, the proposed Project is not anticipated to exceed the AQMP assumptions for the Project site and is found to be consistent with the AQMP for the second criterion. Based on the above, the proposed Project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

b) IMPACT: Less than Significant Impact.

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed Project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed Project were obtained from the Project applicant. Construction activities for the proposed Project are anticipated to include: the demolition of an approximately 1,095 square-foot existing single-family dwelling unit; grading of approximately 4.37 net acres; construction of nine single-family residential dwelling units and 0.4 acres of retention basins and landscaping; paving of 0.59 acres of on-site roadways; and application of architectural coatings. The amount of cut and fill materials are anticipated to balance during grading operations with no import or export of soils required. The proposed Project was modeled to start construction no earlier than January 2025. However, the duration of construction is unknown at this time. Therefore, CalEEMod default construction timing was utilized in this analysis. Based on CalEEMod defaults, with a start date of January 2025, the Project was anticipated to be completed by early February 2026 with the Project being operational in 2026.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed Project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and greenhouse gases (GHGs).

Emissions are estimated using the CalEEMod (Version 2022.1.1.20) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use Projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the

EMFAC2021 computer program to calculate the emission rates specific for the eastern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators.

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rules 403 and 403.1 establish these procedures. Compliance with these rules is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent and stabilizing ground cover on finished sites.

In addition, any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City. It is anticipated that this Project will obtain and prepare the required Fugitive Dust Control Plan.

SCAQMD's Rule 403 and 403.1 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rules 403 and 403.1 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the proposed Project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014, will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) grading, (3) building construction, (4) paving, and (5) application of architectural coatings. Building construction, paving and painting phases may overlap during construction.

Construction-Related Regional Impacts

The maximum daily criteria pollutant emissions from the proposed Project's construction-related criteria pollutant emissions are shown below in Table 4. The results of Table 4 show that none

of the Project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed Project.

Table 4 Construction-Related Regional Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	7.73	22.30	23.20	0.04	3.68	2.05
SCAQMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Source: Ganddini Group, Inc., *TTM 38636 Air Quality, Global Climate Change, and Energy Impact Analysis, City of Rancho Mirage* dated October 24, 2023

LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2026, which is the anticipated opening year for the proposed project. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. Per the project applicant, the project is to screen out of the requirement of a traffic study. Therefore, the vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual (2021) into the CalEEMod Model. Per the ITE rate for single-family housing (ITE 210) the proposed project will have trip generation rates of 9.43 trips per dwelling unit per weekday, 9.48 trips per dwelling unit per Saturday, and 8.48 trips per dwelling unit per Sunday. The program then applies the emission factors for each trip which is

provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A, Calculation Details for CalEEMod, area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts

The maximum daily pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 5. Table 5 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Table 5 Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Maximum Daily	0.82	0.66	4.80	0.01	0.87	0.24
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.1.20; the higher of either summer or winter emissions.

CUMULATIVE AIR QUALITY IMPACTS

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality; and (2) that a

project's consistency with the current AQMP be used to determine its potential cumulative impacts.

Project Specific Impacts

The project area is out of attainment for ozone and PM_{10}. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the Salton Sea portion of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. This applies to TACs as well, as the SCAQMD does not have any cumulative TAC thresholds; therefore, projects that do not exceed the SCAQMD TAC threshold criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant.

Project operations would generate emissions of NO_x, ROG, CO, PM_{10}, and $PM_{2.5}$, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. The project will not be a source of significant TACs and will not cause significant cancer or non-cancer-related health risks. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create. Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors, or TACs. As a result, the project would result in a less than significant cumulative impact for operational emissions.

c) IMPACT: Less than Significant Impact.

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the boundaries of the focus area of the project site are the existing single-family residential uses located adjacent to the north and east of the project site and approximately 566 feet (~172 meters) to the southwest, 590 feet (~180 meters) to the west, 1,340 feet (~408 meters) to the south, and 1,296 feet (~395 meters) to the southeast of the project site. Other air quality sensitive land uses are located further from the project site and

would experience lower impacts.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the Project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea portion of the South Coast Air Basin. The proposed Project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain the following parameters:

(1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
(2) The maximum number of acres disturbed on the peak day.
(3) Any emission control devices added onto off-road equipment.
(4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed Project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the Coachella Valley source receptor area (SRA) 30 and a disturbance value of two acres per day, to be conservative. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptors are the existing single-family residential uses with property lines located adjacent to the north and east of the Project site; therefore, the SCAQMD Look-up Tables for 25 meters were used. As shown in Table 6, none of the analyzed criteria pollutants would exceed the calculated local emissions thresholds at the nearest sensitive receptors. Therefore, impacts would be less than significant.

Table 6 Local Operational Pollutant Emissions

Activity	On-Site Pollutant Emissions (pounds/day)			
	NO_x	CO	PM_{10}	$PM_{2.5}$

Demolition	22.20	19.90	0.96	0.85
Grading	16.30	17.90	3.48	2.00
Building Construction	10.40	13.00	0.43	0.40
Paving	6.52	8.84	0.29	0.26
Architectural Coating	0.86	1.13	0.02	0.02
SCAQMD Thresholds	191	1,299	7	5
Exceeds Threshold?	No	No	No	No

Source: CalEEMod Version 2022.1.1.20; the higher of either summer or winter emissions.

d) IMPACT: Less than Significant Impact.

Construction-Related Odor Impacts

Potential sources that may emit odors during Project construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the Project construction process are short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Diesel exhaust and VOCs would be emitted during construction of the Project, which are objectionable to some; however, emissions would disperse rapidly from the Project site and therefore should not reach an objectionable level at the nearest sensitive receptors. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed Project.

Operational-Related Odor Impacts

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the Project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code and thus would constitute a public nuisance related to air quality.

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from vehicle emissions and trash storage areas. The project consists of residential uses and will not attract a significant amount of heavy-duty truck traffic. Due to the distance of the nearest receptors from the Project site and through compliance with SCAQMD's Rule 402, no significant impact related to odors would occur during the on-going operations of the proposed Project. Impacts would be less than significant.

3.3 Mitigation Measures: None required.

4 - Biological Resources

BIOLOGICAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan,	☐	☒	☐	☐

or other approved local, regional, or state habitat conservation plan?				

Sources: Natural Resources Assessment, Inc., 2024. *General Biological Assessment Single-family Residential Subdivision Tentative Tract Map – TTM 23-0001 (TTM38636) Environmental Assessment – EA 23-0003 APN 685-080-002 Rancho Mirage, California* dated January 18, 2024; United States Fish & Wildlife Service, Environmental Conservation Online System; United States Fish & Wildlife Service, Environmental Conservation Online System (ECOS). Critical Habitat Mapper; United State Fish & Wildlife Services, Habitat Conservation Plans: Summary Report; and United States Fish and Wildlife Service, National Wetlands Inventory, Wetlands Mapper.

4.1 Setting

The relatively level 5.04-acre site ranges from 325 feet above mean sea level (AMSL) to 330 feet AMSL. The southwestern portion of the Project site is occupied by an older single-family residence. The only mature trees located within the property are located in the yard areas of this residence. The dominant plant community is a very sparse creosote bush scrub, dominated by creosote bush (*Larrea tridentata*). Other shrub species include Emory's indigo bush (*Psorothamnus emoryi*) and desert globemallow (*Sphaeralcea ambigua*). Annual flowering species observed include fanleaf crinklemat (*Tiquiila plicata*), Booth's desert primrose (*Eremothera boothii*), desert lantern (*Oenothera deltoides*) and desert needlegrass (*Pallafoxia arida var. arida*). Non-native species included a mix of weedy plant species such as Sahara mustard (*Brassica tournefortii*) and Mediterranean grass (*Schismus barbatus*) found scattered throughout the site. Landscape species such as oleander (*Nerium oleander*) and European olive (*Oleo europea*) grow along the margins of the property and are self-seeded individuals from adjacent development. No amphibians or reptiles were observed during the survey. Bird species were observed during the field surveys included horned lark (*Eremophila alpestris*) and common raven (*Corvus corax*).

A literature review, records search, and field survey were conducted by Natural Resources Assessment, Inc. (NRAI) for information on plant and wildlife species known occurrences within the vicinity of the project. No special-status plants or wildlife was found on the Project site during the field survey. No fish, amphibians, or hydrogeomorphic features that would provide suitable habitat for fish or amphibian species were observed on or within the vicinity of the Project site.

4.2 Discussion of Impacts:

a) IMPACT: Less Than Significant with Mitigation Incorporated.

The Project site occurs in an area of the City of Rancho Mirage that has undergone a conversion from natural habitats to residential, recreational, and commercial developments. According to the City's General Plan, the Project site is located within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), which aims to conserve over 240,000 acres of open space and protect 27 plant and animal species.

A literature review, records search, and field survey were conducted by Natural Resources Assessment, Inc. (NRAI). During the field survey, no special-status plant community was found on the site. The Project site only supports ornamental, non-native vegetation, including

creosote bush scrub. Based on the results of the field survey, no special-status plant communities were observed on-site; therefore, no special-status plant communities would be impacted by Project implementation.

The Project site is not located within a federally designated Critical Habitat. Therefore, the loss or adverse modification of Critical Habitat would not occur as a result of the proposed Project.

No special-status wildlife species were found on the site.

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) has identified the areas of concern in the Coachella Valley and has established the locations and boundaries of these areas. The nearest Conservation Areas to the project are the Thousand Palms Conservation Area to the north and the Santa Rosa and San Jacinto Mountain Conservation Area to the south. The project is outside the boundaries of the two conservation areas and does not have any CVMSHCP linkages. NRAI's assessment included an evaluation of the habitats on site and in surrounding areas to determine whether there are other sensitive resources of concern in this area of Rancho Mirage that may be present on site.

During the field survey, the project site was surveyed for its ability to provide suitable habitat for burrowing owls. No burrowing owls or recent signs (i.e., pellets, feathers, castings, or whitewash) of such was observed during the field investigation. Portions of the project site are unvegetated and/or vegetated with a variety of low-growing plant species that allow for line-of-sight observation favored by burrowing owls. However, the project site lacks suitable burrows capable of providing roosting and nesting opportunities. Therefore, it was determined that the project site has a low potential to provide suitable habitat for burrowing owls and focused surveys are not recommended. To ensure impacts to burrowing owls do not occur from implementation of the proposed Project, a pre-construction burrowing owl clearance survey would be conducted prior to ground disturbance as described in Mitigation Measure (MM) BIO-1. If any special-status species are documented onsite, in addition to conducting preconstruction surveys, the qualified biologist must complete the California Natural Diversity Database (CNDDB) field survey form.

At the time of the survey, the parcel had nesting habitat for ground-nesting bird species, and suitable scrub habitat in the surrounding neighborhood. Mitigation Measure (MM) BIO-2 as described below in Section 4.3 Mitigation Measures shall require a breeding bird survey following the recommended guidelines of the MBTA will be required to determine if nesting is occurring in this area.

b) IMPACT: No Impact.

The Project site is located in an area of the City of Rancho Mirage that has undergone gradual urbanization. No jurisdictional drainage and/or wetland features were observed on the Project site during the field survey. Furthermore, no blue-line streams have been recorded on the Project site and there is no evidence that the Project contained any streams, riparian habitat, marshes, protected wetlands, vernal pools or sensitive natural communities that would be protected by the California Department of Fish and Wildlife (CDFW) or by the U.S. Army Corps of Engineers (USACE). Therefore, no impact would

occur.

c) IMPACT: No Impact.

No wetland areas or riparian habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations. As a result, no impacts are anticipated.

d) IMPACT: Less Than Significant with Mitigation Incorporated.

The Project site has not been identified as occurring in a wildlife corridor or linkage. The site has limited adjacent open space, and available open space is entirely surrounded by existing development, limiting its connectivity to surrounding habitats. In addition, there are no riparian corridors, creeks, or useful patches of steppingstone habitat (natural areas) within or connecting the site to a recognized wildlife corridor or linkage. As such, implementation of the proposed Project is not expected to impact wildlife movement opportunities. Therefore, impacts to wildlife corridors or linkages are not expected to occur.

However, nesting birds have the potential to occur given the sparse vegetation found on site. The Project's future construction could adversely affect nesting birds if construction was to occur while they are present or adjacent to the Project site, through direct mortality or abandonment of nest. If this was to occur it would be a violation of the MBTA and CFGC 3503, and a potentially significant impact. However, implementation of Mitigation Measures (MM) BIO-2 would require a pre-construction nesting bird survey to mitigate any potential impacts to protect migratory nesting birds. The pre-construction survey shall be conducted by a biologist prior to any ground disturbing activities and/or removal of any vegetation. In the event that a raptor nest is observed personnel would be notified and no ground disturbing activities will occur until the avian biologist has confirmed the breeding/nesting is completed and the young have fledged the nest. Therefore, through implementation of MM BIO-2, impacts would be reduced to less than significant.

e) IMPACT: No Impact.

The City has not adopted any ordinances regarding tree preservation. As observed during the field survey, the Project site mainly consists of small and medium size shrubs. No trees are located on the Project site under existing conditions. Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance and no impact would occur.

f) IMPACT: Less than Significant with Mitigation Incorporated.

The Project site is located within the boundaries of CVMSHCP but is not located within any conservation areas. The Project would be subject to payment of the Development Mitigation fee per Section 3.29.147 CVMSHCP/Natural Community Conservation Plan (NCCP) Local Development Mitigation Fee of the City's Municipal Code, as described as MM BIO-3. The fee would mitigate potential impacts to covered species within the CVMSHCP. Although the site is located within the CVMSHCP boundary, as mentioned in Section 4 (a), the Project site is not located within a biological sensitive or any conservation areas. The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts would be less than significant.

4.3 Mitigation Measures:

BIO-1 Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.

BIO-2 Nesting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist shall have the authority to stop work if nesting pairs exhibit signs of disturbance.

BIO-3 Prior to construction and issuance of any grading permit, the City of Rancho Mirage and project applicant shall ensure compliance with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and its associated Implementing Agreement, and the City shall ensure the collection of payment of the CVMSHCP Local Development Mitigation Fee.

5 - Cultural Resources

CULTURAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Sources: ArchaeoPaleo Resource Management, Inc., 2024. *Phase I Archaeological and Paleontological Resources Assessment for the Rancho Mirage 9 Lot Subdivision Project, City of Rancho Mirage, Riverside County, California d*ated January 2024 and the City of Rancho Mirage, 2003 Historic Resources Survey.

5.1 Setting

Historic structures and sites are defined by local, State, and Federal criteria. A site or structure may be historically significant if it is locally protected through a General Plan or historic preservation ordinance. In addition, a site or structure may be historically significant according to State or Federal criteria even if the locality does not recognize such significance. To be considered eligible for the National Register, a property's significance may be determined if the property is associated with events, activities, or developments that were important in the past, with the lives of people who were important in the past, or represents significant architectural, landscape, or engineering elements. Specific criteria include the following:

- Districts, sites, buildings, structures, and objects that are associated with the lives of significant persons in or past;
- Districts, sites, buildings, structures, and objects that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- Districts, sites, buildings, structures, and objects that have yielded or may be likely to yield, information important in history or prehistory.

Ordinarily, properties that have achieved significance within the past 50 years are not considered eligible for the National Register. However, such properties would qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance;
- Districts, sites, buildings, structures, and objects that are associated with events that have made a significant contribution to the broad patterns of our history;
- A building or structure removed from its original location that is significant for architectural value, or which is the surviving structure is associated with a historic person or event;
- A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life;
- A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events;
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or,
- A property achieving significance within the past 50 years if it is of exceptional importance.

According to the *Phase I Archaeological and Paleontological Resources Assessment* conducted by ArchaeoPaleo Resource Management, Inc., the field reconnaissance has determined the area to be relatively flat terrain with sparse vegetation and trees. The Project area was accessible and observable, except the area surrounding the existing single-family home. Project site ground surface was primarily loose fine sand, which has been blown by prevailing winds over the older alluvial gravel and sand, although in areas around the single-family home a concrete pad and mulch were observed, and hay was observed in the south-east corner. Evidence that the Project area has also previously been used as an illegal dumping site was observed during the field reconnaissance. It is possible that some of the material possesses historic informational value.

5.2 Discussion of Impacts:

a-b) IMPACT: Less Than Significant with Mitigation Incorporated.

Tribal Cultural Resources are discussed within Section 18 including the City of Rancho Mirage's role as lead agency for compliance with Assembly Bill 52 (AB52) for Tribal consultations. When conducting cultural resource assessments, the consultant will also make contact with Native American Tribes based on listed obtained from the Native American Heritage Commission (NAHC) for pertinent information from the Tribes.

On September 14, 2023, ArchaeoPaleo Resource Management, Inc. (APRMI) requested a cultural resource records search from the Eastern Information Center (EIC) in Riverside, California to identify any known cultural resources on or near the Project site. APRMI also

requested a sacred lands file and Native American contact list request with NAHC in West Sacramento, California on September 14, 2023. Archival research was conducted through different inventory databases, including the National Geologic Map Database, and/or historic societies to acquire more information or knowledge of the history of the Coachella Valley. In addition to resources publicly available online, and in the libraries of the University of Maryland and the University of California, Los Angeles, APRMI personnel viewed material located within the Special Collections of the Young Research Library at the University of California, Los Angeles.

On September 28, 2023, APRMI conducted a field reconnaissance of the Project area to evaluate the presence of any archaeological resources to determine if the development of the Project might have significant direct or indirect adverse impacts on such resources. The survey began near the southeasternmost boundary of the Project area on Ginger Rogers Road and towards the northeastern boundary of the project area for further evaluation. Pedestrian survey methods were conducted on undeveloped areas with clear brush access and high ground visibility. The Project area was surveyed in transects approximately 10 feet (3 m) apart towards an east direction. Vegetation, topography, and fauna observations were photographed and noted.

Six historic sites and four historic isolates have been recorded with primary record forms within a 1-mile radius of the Project site. These primarily consist of historic refuse dating to the late 1800s to early 1900s. A prior survey in 2007 found burnt slag and charcoal metal pieces and the remains of a shed on the subject site. An additional survey in 2017 reconfirmed the remains of the shed and found historic refuse. The current APRMI field survey discovered the presence of historic refuse on the Project property. None of the historic sites require further consideration. As a result, the impacts would be less than significant.

According to the literature review and records search, twenty-seven previous cultural reports have been conducted within a 1-mile radius. One survey recorded prehistoric isolates not reported elsewhere. No prior cultural reports were recorded on the subject property.

One 1,095 square foot residential structure constructed in 1958 is located along the southwestern Project boundary and is not identified as a potential historic resource in the City's 2003 Historic Resources Survey. This structure is proposed for demolition. The existing single-family residence is not identified as a potential historic resource in the City's 2003 Historic Resources Survey. Through implementation of Mitigation Measures CR-1 through CR-8, the potential for cultural resources is being addressed including educational programs, monitoring, discovery of buried cultural materials, inadvertent finds and curation. Therefore, with the incorporation of Mitigation Measures CR-1 through CR-8, impacts relating to significant historical and archaeological resources would be reduced to less than significant levels.

c) IMPACT: Less Than Significant with Mitigation Incorporated

The Project site is occupied by one single-family residential dwelling under existing conditions. Modern trash was noted throughout the Project site with larger concentrations along the western and southern margins of the boundary near proximity to the roads. There are no

dedicated cemeteries located within or in the vicinity of the Project site. The proposed Project would be restricted to the Project site and therefore would not affect any dedicated cemeteries in the vicinity. There is no evidence that the Project site is located within an area that would be likely to contain human remains. However, there is always the possibility that human remains could be uncovered during ground disturbing activities. In the unexpected event that human remains are found during construction activities, those remains would require proper treatment in accordance with all applicable laws. Through implementation of Mitigation Measure CR-6, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The State of California Health and Safety Code Section 7050.5 and the California Public Resource Code (PRC) Section 5097.98, states that the County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the County Coroner to the Native American descent, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the Project site and make a recommendation regarding disposition of the remains. Therefore, with the incorporation of Mitigation Measure CR-6, impacts relating to the potential disturbance of human remains would be reduced to less than significant levels.

5.3 Mitigation Measures:

Due to the high sensitivity of the Project area for cultural and tribal resources, and at the request of the Agua Caliente Band of Cahuilla Indians, APRMI recommends that both a tribal monitor and a qualified archaeologist be present on site to monitor any ground-disturbing activities.

CR-1 Prior to the start of Project excavation, a qualified archaeologist shall be retained and create a Worker's Environmental Awareness Program (WEAP) pamphlet that will be prepared by the Project Archaeologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of cultural resources. This training class shall include examples of cultural resources to look for during project excavation and the protocols to follow if discoveries are made.

CR-2: Archaeological resources monitoring shall be conducted by a professional archaeological resources monitor during Project related earth-disturbing activities, per OHP standards, under the supervision of a qualified Project Archaeologist. Monitoring will entail visual inspection of Project related earth-disturbing activities in native soil.

CR-3: As requested by the Agua Caliente Band of Cahuilla Indians, an approved Native American monitor, with documented ancestral ties to the area consistent with the standards of the Native American Heritage Commission (NAHC), shall be present for all ground disturbing activities that involve excavation of previously undisturbed soil, until the archaeologist and Native American monitor deems that they are no longer in soil that may contain prehistoric and/or historic artifacts, sites, or features.

Monitoring will entail visual inspection of all Project-related earth-disturbing activities.

CR-4: If an archaeological resource is encountered during excavation when a monitor is not on site, all excavation shall cease within at least 50 feet of the discovery and the Principal Investigator and Lead Archaeologist must be notified. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Archaeologist and indicates that excavation can resume.

CR-5: If an archaeological discovery cannot be preserved in situ and requires an excavation team or requires additional time to collect cultural resources, a Discovery and Treatment Plan (DTP) will be developed by the Lead Archaeologist, and the area will be cordoned off and secured so that an archaeological resources excavation team, led by the Principal Investigator and Lead Archaeologist, may recover the cultural resources out of that area. Once the Principal Investigator has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area.

CR-6: If human remains are encountered, work on the project will be suspended and the City of Rancho Mirage will be contacted immediately. The City of Rancho Mirage will contact the Riverside County coroner. If the remains are deemed Native American in origin, the coroner will contact the NAHC, which will identify a most likely descendant in compliance with Public Resources Code Section 5097.98 and California Code of Regulations Section 15064.5. The most likely descendant will have up to 48 hours to visit the site and make recommendations as to the treatment and final deposition of the remains. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded to the satisfaction of the lead agency.

CR-7: All significant cultural resources collected by the archaeologist will be prepared in a properly equipped laboratory to a point ready for curation. All significant artifacts collected will be prepared in a properly equipped archaeological laboratory to a point ready for curation. Artifacts will be identified, photographed, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage or to the appropriate Tribe. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent.

CR-8: At the conclusion of laboratory work but prior to museum curation, a final (negative or positive) findings report will be prepared describing the results of the cultural mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the cultural background within the project vicinity, a list of cultural resources recovered (if any), an analysis of cultural resources recovered (if any) and their scientific significance, and recommendations. A copy of the report will be prepared for the City of Rancho Mirage, the EIC, and be submitted to the designated museum repository (if applicable).

6 - Energy

ENERGY – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Sources: Ganddini Group, Inc., *TTM 38636 Air Quality, Global Climate Change, and Energy Impact Analysis, City of Rancho Mirage* dated October 24, 2023.

6.1 Setting

Primary sources of energy include fossil fuels (i.e., natural gas, oil, coal), nuclear energy, and renewable sources of energy such as wind, solar, geothermal, and hydro. These primary sources can be converted to electricity, a secondary source of energy. According to the California Energy Commission 2021 Total System Electric Generation, natural gas provided approximately 37.9% of the state's total electric power mix in 2021. The City of Rancho Mirage adopted an Energy Action Plan in 2013, which provides an inventory for the City's 2010 energy usage, and establishes energy action steps that aimed to achieve 10% reductions in municipal and community-wide energy usage by 2015. The Renewables Portfolio Standard, established by the California Energy Commission in 2002, applies increasingly stringent renewable energy procurement requirements for energy providers. In accordance with Senate Bill 100, by 2030, 60% of the state's electricity must be generated by renewable resources.

Electricity

Imperial Irrigation District (IID) service territory covers Sections 19 and 30 in Rancho Mirage. All other areas of the City are serviced by Southern California Edison (SCE). The project site is located within Section 30, which consists of roughly one square mile and is bounded by Dinah Shore Drive to the north, Gerald Ford Drive to the south, Monterey Avenue to the east, and Bob Hope Drive to the west. IID provides electric power to more than 158,000-plus customers in the Imperial Valley and parts of Riverside and San Diego counties. The 2021 IID Power Mix has renewable energy at 40 percent of the overall energy resources, of which biomass and waste is at 8.8 percent, geothermal is at 12.1 percent, eligible hydroelectric is at 6.9 percent, and solar energy is at 12.3 percent; other energy sources include large hydroelectric at 4.8 percent, natural gas at 35.6 percent, nuclear at 3.5 percent, and unspecified sources at 16.1 percent.

IID facilities include 12 kV transmission lines for local distribution. High voltage lines for more distant transmission range up to 115 kV and 230 kV. Substations step down voltage for local distribution and use. The IID operates 133 substations within its service area and two substations are located near the City of Rancho Mirage: one on Interstate 10 and Monterey Avenue (Edom Substation) and one on East Ramon Road (Ramon Substation).

IID service territory in recent years has experienced significant capacity issues, with new projects/customers and being required to implement new capacity in the form of a substation to obtain electrical service. Individual projects are being conditioned to implement these substations. The developer will coordinate with IID to work on solutions regarding these capacity issues.

Natural Gas

The California Public Utilities Commission (CPUC) provides the following summary of natural gas resources and service providers, delivery systems, and associated regulation:

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage. The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%. The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."

Natural gas would be provided to the Project by Southern California Gas (SoCalGas). There is one existing residence on site that is planned for demolition.

Energy and natural gas consumption were estimated using default energy intensities by building type in CalEEMod. In addition, it was assumed the new buildings would be constructed pursuant to the 2022 CALGreen standards, which was considered in the CalEEMod inputs.

6.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

The proposed Project would involve the subdivision of the 5.04-acre Project site into nine-lot residential lots. The Project site's General Plan and Zoning designation is Very Low Density

Residential (R-L-2). During construction, the proposed Project would consume energy related to the use of fuels used to power construction vehicles and other equipment that would be used during site clearing, grading, and construction. Fuel use associated with construction vehicle trips generated by the proposed Project was also estimated; trips include construction worker trips, haul truck trips for material transport, and vendor trips for construction material deliveries. Energy consumed during construction would be temporary in nature and would not present a significant demand on energy resources. The proposed Project would be constructed pursuant to the 2022 energy standards of Title 24. Construction equipment greater than 150 horsepower (hp), is also required to comply with the Environmental Protection Agency (EPA)/California Air Resources Board (CARB) Tier 3 emissions standards and shall ensure that all construction equipment is tuned into and maintained in accordance with the manufacturer's specifications. For engines from 175 to less than 750 hp, the Tier 4 Final regulations took effect on January 1, 2014. For engines from 49 to less than 75 hp, it took effect on January 1, 2013. Finally, for engines from 75 to less than 175 hp, the Tier 4 regulations took effect on January 1, 2015.

In addition, the Project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. The use of fuels during construction of the Project would be temporary and minimal, and would not be wasteful or inefficient. Therefore, no significant impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction are anticipated and no mitigation measures are required.

Construction Energy Demands

The construction of the Project was modeled to occur between January 2025 and February 2026 and is to be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately thirteen-month schedule is relatively short, and the Project site is approximately 5.04 gross acres/4.37 net acres.

Construction Equipment Electricity Usage Estimates

Electrical service will be provided by Imperial Irrigation District. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed Project. Based on the 2021 National Construction Estimator, Richard Pray (2021), the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.37. The Project plans to develop the site with nine single-family residential lots, which per CalEEMod defaults would total approximately 17,550 square feet. The total power cost of the on-site electricity usage during the construction of the proposed Project is estimated to be approximately $540.72. Furthermore, IID's General Service rate is approximately $0.12 per kWh of electricity. The total electricity usage from Project construction related activities is estimated to be approximately 4,625 kWh.

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of Project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 13 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses, the Project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Project construction activities would consume an estimated 30,759 gallons of diesel fuel. Project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 25 percent/50 percent/25 percent, respectively, along area roadways. With respect to estimated VMT, the construction worker trips would generate an estimated 28,433 VMT. Data regarding Project related construction worker trips were based on CalEEMod 2022.1.1.20 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses using information generated using CARB's 2021 EMFAC model. An aggregate fuel efficiency of 26 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. There is an estimated 1,069 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

With respect to estimated VMT, the vendor and hauling trips would generate an estimated 2,512

VMT. Data regarding Project related construction worker trips were based on CalEEMod 2022.1.1.20 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or hauling debris from the site during building construction would use medium to heavy duty vehicles with an average fuel consumption of 7.87 mpg for medium heavy-duty trucks and 6.15 mpg for heavy heavy-duty trucks. There is an estimated 364 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately thirteen-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual Project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in the construction of the Project would therefore not result in inefficient wasteful or unnecessary consumption of fuel.

The Project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints.

Therefore, as the Project's construction is required to comply with CARB regulations and does not include the need of construction processes that would require the use of equipment that is more energy efficient, the proposed Project annual construction related fuel consumption would not be considered significant.

Operational Energy Demands

Energy consumption in support of or related to Project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the Project site) and facilities energy demands (energy consumed by building operations and site

maintenance activities).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses, it is assumed that an average trip for autos was assumed to be 8.46 miles and light, medium and 3- 4-axle trucks were assumed to travel an average of 28.25 miles. As the Project includes the development of the site with residential uses, which are frequently utilized on weekends, and in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year.

The proposed Project would generate approximately 85 trips per weekday. The vehicle fleet mix was used from the CalEEMod output. There is an estimated 21,638 gallons of fuel that would be consumed per year for the operation of the proposed Project.

As shown in the trip generation provided by ITE, the trip generation generated by the proposed Project is consistent with other similar residential uses of similar scale and configuration as reflected respectively in either the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) and/or surveys, etc. That is, the proposed Project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015. Therefore, the increase in fuel consumption from the proposed Project is insignificant in comparison to the State's demand. Therefore, Project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Imperial Irrigation District) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses.

The estimated electricity demand for the proposed Project is approximately 84,053 kWh per year. In 2022, the residential sector of the County of Riverside consumed approximately 9,061 million kWh of electricity. In addition, the estimated natural gas consumption for the proposed Project is approximately 320,079 kBTU per year. In 2022, the residential sector of the County of Riverside consumed approximately 284 million therms of gas. Therefore, the increase in both electricity and natural gas demand from the proposed Project is insignificant compared to the County's 2022 residential sector demand.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use

(refrigeration, cooking, appliances, etc.). The proposed Project would be required to comply with Title 24 standards.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.). The proposed Project would be required to comply with Title 24 standards.

The proposed Project's energy consumption would be related to energy that would be used for lighting and other household activities. Lighting would be required to follow the City's Outdoor Lighting Policy, which includes the use of energy efficient lighting. For these reasons, the Project would not result in wasteful, inefficient, or unnecessary use of energy. The Project applicant would be required to work with the local electrical utility company to identify existing and future strategies that would be effective in reducing energy consumption. As a result, the impact would be less than significant.

b) IMPACT: Less Than Significant Impact.

Future development of the Project's proposed nine single-family lots would be required to comply with the California Green Building Standards Code requirements for energy efficient buildings and appliances and other standards, including utility energy efficiency programs implemented by the IID, Rancho Mirage Energy Action Plan, and SoCalGas. In addition, compliance with these requirements will ensure that that proposed Project does not interfere with the energy conservation goals established in the City's Sustainability Plan.

Regarding federal transportation regulations, the Project site is located in an already developed area. Access to and from the Project site is from existing roads; therefore, the Project would not interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the Intermodal Surface Transportation Efficiency Act (ISTEA) because SCAG is not planning for intermodal facilities in the Project area. Therefore, the Project would have a less than significant impact on plans for energy efficiency.

6.3 Mitigation Measures: None required.

7 - Geology and Soils

GEOLOGY AND SOILS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Sources: Rancho Mirage General Plan 2017, Exhibits 21-25; Rancho Mirage Municipal Code, Title 15; Riverside County Map My County; ArchaeoPaleo Resource Management, Inc., *Phase I Archaeological and Paleontological Resources Assessment for the Rancho Mirage 9 Lot Subdivision Project, City of Rancho Mirage, Riverside County, California d*ated January 2024; Sampson and Associates, *Preliminary Soils Evaluation (9) New Single-Family Residences on TTM No. 38636 in the City of Rancho Mirage, California* dated March 03, 2023; Sampson and Associates, *Infiltration Evaluation, New Single-Family Residences on TTM No. 38636 in the City of Rancho Mirage, California* dated March 04, 2023; University of California Davis Soil Resource Laboratory, SoilWeb; State of California, Department of Conservation, California Geological Survey (CGS), Data Viewer; and State of California, Department of Conservation, California Geological Survey, Earthquake Zones of Required Investigation.

7.1 Setting

The City of Rancho Mirage lies within the western portion of the Coachella Valley, which is the northwestern extension of the Salton Trough, a tectonic depression formed by regional faulting. The Salton Trough is roughly 130 miles long and 70 miles wide and extends from the San Gorgonio Pass to the Gulf of Mexico. Regional soils range from rocky outcrops within the mountains bordering the valley to coarse gravels of mountain canyons and recently laid fine- and medium-grained alluvial (stream-deposited) and aeolian (wind-deposited) sediments on the central valley floor. Sediments from the surrounding mountains are carried into and across the Coachella Valley through numerous seasonal streams. The Whitewater River and its extension, the Coachella Valley Stormwater Channel, are the master drainage for the valley, which generally flows northwest to southeast. Episodic flooding of major regional drainages results in the deposition of sand and gravel on the valley floor.

The City of Rancho Mirage is located in a seismically active region. Earthquakes from several active and potentially active faults in the Southern California region could affect the proposed project site. In 1972, the Alquist-Priolo Earthquake Zoning Act was passed in response to the damage sustained in the 1971 San Fernando Earthquake. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. Surface ruptures are visible instances of horizontal or vertical displacement, or a combination of the two. The amount of ground shaking depends on the intensity of the earthquake, the duration of shaking, soil conditions, type of building, and distance from epicenter or fault. The potential impacts from fault rupture and ground shaking are considered no greater for the project site than for the surrounding areas given the distance between the site and the fault trace. However, the deep groundwater in Rancho Mirage does not allow the saturation of the sediments; therefore, the potential for liquefaction to occur at the project site is less than significant. Windblown sand and other recently deposited sediments are typically loose and, therefore, potentially subject to seismically induced settlement.

The Project site, excepting a few small areas around the existing family home, is covered by Holocene eolian sand eroded from the neighboring Peninsular Range and blown by prevailing winds into the valley. It is primarily clean to slightly silty, fine to medium sand.

It overlays the quaternary alluvium, composed of Holocene and possibly Pleistocene sand and gravel.

7.2 Discussion of Impacts:

a.i.) IMPACT: Less Than Significant Impact.
There are no known active faults crossing or projecting through the Project site. The Project site is not located within an Alquist-Priolo Earthquake Fault Zone, or within a fault zone identified by the County of Riverside GIS data. Therefore, ground rupture due to faulting is considered unlikely at this site. To ensure the safety of the project against seismically induced hazards, the project site shall adhere to the standard design requirements stated in the most recent California Building Code (CBC), and the City's building standards. A less than significant impact would occur.

a.ii.) IMPACT: Less Than Significant Impact.
The Project site is located in a seismically active area of southern California and is expected to experience moderate to severe ground shaking during the lifetime of the Project. This risk is not considered substantially different than that of other similar properties in the southern California area. As a mandatory condition of Project approval, the Project would be required to construct the proposed buildings in accordance with the California Building Standards Code (CBSC), also known as California Code of Regulations (CCR), Title 24 (Part 2), and the Rancho Mirage Municipal Code, which is based on the CBSC with local amendments. The CBSC and Rancho Mirage Municipal Code (Chapter 15.04) provide standards that must be met to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures, and have been specifically tailored for California earthquake conditions. In addition, a geotechnical report is required as part of the application for a grading permit and the Project would be required to comply with the site-specific ground preparation and construction recommendations contained in the geotechnical report. With mandatory compliance with these standards and site-specific design and construction measures set forth in the Project's geotechnical report, potential impacts related to seismic ground shaking would be less than significant. As such, implementation of the Project would not expose people or structures to substantial adverse effects, including loss, injury, or death, involving seismic ground shaking. Impacts would be less than significant.

a.iii.) IMPACT: Less Than Significant Impact.
According to Map My County (Riverside County's public GIS web viewer) and Exhibit 22 of the City's General Plan, the Project site is located in a moderate susceptibility zone for liquefaction. However, a geotechnical report is required as part of the application for a grading permit and the Project would be required to comply with the site-specific ground preparation and construction recommendations contained in the geotechnical report to further reduce the risk of seismic-related ground failure due to liquefaction. Therefore, implementation of the Project would not directly or indirectly expose people or structures to substantial hazards associated with seismic-related ground failure and/or liquefaction hazards. Impacts would be less than significant.

a.iv.) IMPACT: No Impact.
The Project is located in an area of the City that has been developed and is relatively flat and not located immediately adjacent to any sloped hillsides. In addition, according to Exhibit 24, Seismically Induced Rock Falls and Landslide Susceptibility, of the City's General Plan, the Project site is located within an area with a low susceptibility of being impacted by rock falls and seismically induced landsliding. Therefore, the development of the Project would result in no impacts relating to landslide hazards.

b) IMPACT: Less Than Significant Impact.
During construction of the proposed Project, soils would be disrupted during grading activities due to exposure of uncovered soils, thereby increasing the potential for wind or water-related erosion and sedimentation until construction is completed. Pursuant to State Water Resources Control Board requirements, the Applicant is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for construction activities, which involves preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for construction-related activities. The SWPPP will specify the Best Management Practices (BMPs) that would be required to be implemented during construction activities to ensure that waterborne pollution (erosion and sedimentation) is prevented, minimized, and/or otherwise appropriately treated prior to surface runoff being discharged from the subject property. The Project also would be required to comply with SCAQMD Rule 403 to minimize water and windborne erosion. Lastly, the Project would be required to prepare and implement a Water Quality Management Plan (WQMP), which is a site-specific post-construction water quality management program designed to minimize the release of waterborne pollutants, including pollutants of concern for downstream receiving waters, under long-term conditions via BMPs. The WQMP also is required to establish a post-construction implementation and maintenance plan to ensure on-going, long-term erosion protection. Therefore, with adherence to SCAQMD Rule 403, and preparation of a SWPPP and WQMP, the proposed Project would result in less than significant impacts related to soil erosion.

c) IMPACT: Less Than Significant Impact.
The Project site does not contain substantial natural or man-made slopes under existing conditions. Additionally, there are no hillsides in the vicinity of the Project site with a potential to expose the site to landslide hazards. Therefore, no impact would occur related to landslides.

Lateral spreading is primarily associated with liquefaction hazards. As previously mentioned in Section 7(a)(ii), above, the Project would be required to comply with the grading and construction recommendations contained within the geotechnical report for the Project to further reduce the risk of seismic-related ground failure due to liquefaction as well as soil shrinkage/subsidence and collapse. Therefore, impacts associated with liquefaction, lateral spreading, soil shrinkage/subsidence, and collapse would be less than significant.

d) IMPACT: Less Than Significant Impact.
According to the University of California Davis' SoilWeb, the Project site consists of Myoma sands. Due to the low clay content in underlying soils, these near surface soils are non-

expansive. The Project site is not located in an area known for expansive soil (as defined in Table 18-1-B of the Uniform Building Code (1994)), and the potential for the Project to create substantial risks to life or property, relating to expansive soils, is very low. Therefore, Project impacts would be less than significant.

e) IMPACT: No Impact.

The Project would not involve the use of septic tanks or any other alternative wastewater disposal systems. The Project would be served through the Coachella Valley Water District (CVWD). Therefore, there would be no impacts associated with septic tanks or alternative wastewater systems.

f) IMPACT: Less Than Significant with Mitigation Incorporated.

APRMI requested a paleontological records check on September 14, 2023, from the Western Science Center located in the City of Hemet, California. This records check is intended to identify any subsurface paleontological deposits that have been previously recorded directly on the Project site or surrounding area. APRMI received the records check results on December 28, 2023, and the Collections Manager for the Western Science Center has determined the sedimentary units as loose fine sands from the Holocene Epoch. Deeper excavation in the early Holocene and Pleistocene Epochs could contain fossil remains, but shallow excavation in the site would unlikely contain fossil materials. No known fossil localities were identified within the immediate Project area or a 1-mile radius from the site.

A field reconnaissance survey was conducted on September 28, 2023, to identify the presence of any paleontological resources on the site of the Project and assist in determining if the Project will have any significant adverse effects on such resource. The Project site consists of sparse vegetation and loose fine sand over quaternary alluvium. A pre-existing single-family home was present on the site. Once on site, APRMI surveyors noted evidence that the undeveloped land appeared to have previously been utilized as an illegal refuse dump. No paleontological resources were observed during the survey.

According to Map My County, the Project site is located in a low potential zone regarding paleontological sensitivity. Areas recognized for having a “low” potential have a reduced likelihood of containing significant non-renewable paleontological resources, including vertebrate or significant invertebrate fossils.

Since deeper excavation in the early Holocene and Pleistocene Epochs could contain fossil remains, Mitigation Measures GEO-1 through GEO-6 are being proposed in the event the Project’s construction activities would have the potential to unearth significant paleontological resources. With the implementation of these measures, the impacts would be less than significant.

7.3 Mitigation Measures:

GEO-1: Prior to the commencement of grading or excavation activities, the Lead Paleontologist retained for the construction of Rancho Mirage 9 Lot Subdivision Project, shall create a Worker’s Environmental Awareness Program (WEAP)

pamphlet that will be prepared and provided by the Project Paleontologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of paleontological resources. This training class shall include examples of paleontological resources to look for during project excavation and the protocols to follow if discoveries are made.

GEO-2: In the event that a paleontological resource is encountered when a monitor is not on site, all construction shall cease within at least 50 feet of the discovery and the Principal Investigator and/or Lead Paleontologist must be notified immediately. If the monitor is present at the time of discovery, then the monitor will have the authority to temporarily divert the construction equipment around the find and notify the Principal Investigator and/or Lead Paleontologist until it is assessed for scientific significance. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Paleontologist, and he/she indicates that construction can resume.

GEO-3: In the event that a paleontological resource is encountered, the Lead Paleontologist will implement the Paleontological Management Treatment Plan (PMTP) prepared for Rancho Mirage 9 Lot Subdivision Project. The purpose of the PMTP is to achieve compliance with the California Environmental Quality Act (CEQA), and local governmental agencies concerning the treatment of unexpected paleontological finds which are significant at the federal, state, and/or local level. Based on the sensitivity of the area, APRMI recommends the following monitoring mitigation measures that would comply with the Paleontological Management Treatment Plan and reduce the potential effects to any paleontological resource to a less than significant impact.

GEO-4: If a paleontological discovery requires an excavation team or requires additional time to collect specimens, or the size of the discovery is more than a monitor can collect during standard daily monitoring services, a Discovery and Treatment Plan (DTP) will be developed and the area will be cordoned off and secured so that a paleontological resources excavation team, led by the Principal Investigator and/or Lead Paleontologist, may recover the fossilized specimens out of that area once the DTP has been approved. Once the Principal Investigator and/or Lead Paleontologist has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area.

GEO-5: Once construction activities are complete, all significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Laboratory preparation will include, but not be limited to, the careful removal of excess matrix from fossil remains, stabilizing and repairing specimens, identified to the lowest taxonomic level, analyzed, photographed, and catalogued before they are sent to the local repository for curation and permanent storage. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent.

GEO-6: At the conclusion of laboratory work and museum curation, a final report of findings will be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the geology and paleontology in the project vicinity, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to a designated museum repository.

8 - Greenhouse Gas Emissions

GREENHOUSE EMISSIONS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Sources: Ganddini Group, Inc., *TTM 38636 Air Quality, Global Climate Change, and Energy Impact Analysis, City of Rancho Mirage* dated October 24, 2023, City of Rancho Mirage 2017 General Plan Update, adopted November 16, 2017 and City of Rancho Mirage Sustainability Action Plan: Leadership in Energy Efficiency, March 2013.

8.1 Setting

The City's Energy Action Plan and Sustainability Plan, adopted in March 2013, is considered the city's Climate Action Plan. Since 2009, the city has partnered with CVAG (Coachella Valley Association of Governments) and other CV cities as a part of CVAG's Desert Cities Energy Partnership. CVAG developed a "green government initiative" to promote energy efficiency, green building, and sustainability, with funding received from SCE and CPUC. This initiative is called the "Green for Life" program. These plans were developed as a part of this program.

The City's Sustainability Plan was created as a framework for the development and implementation of policies and programs to reduce the City's GHG emissions. The Plan includes 82 measures to be implemented over the course of an eight-year period, lasting until 2020, in order to achieve their emission reduction goals. The Plan defines the City's goal of complying with statewide mandates to reduce GHG emissions. Through the City's considered actions, the City anticipates the following outcomes:

- Increase energy efficiency in local government operation and in community activities;
- Create new jobs in the community associated with smart energy management;
- Save money now being spent for energy and explore the establishment of a revolving fund whereby energy savings will be available for municipal and community programs to enhance energy efficiency and continue to reduce GHG emissions;
- Maintain or enhance the comfortable desert lifestyle of residents and visitors alike; and
- Bring the CVAG jurisdictions together for effective regional sustainability and climate action planning

Further, the Energy Action Plan focuses on ways the City can reduce costs at the same time as

enhancing energy efficiency. The Energy Action plan included a City goal of a 10 percent reduction in energy use from 2005 baseline use levels by 2015.

8.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

The Project allows for the subdivision into nine single-family residential lots. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate project-related GHG emissions and the project impacts. CalEEMod Version 2022.1.1.20 was used to calculate the GHG emissions from the proposed project. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the ITE Trip Generation Manual 11th Edition (2021) into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. No changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to CalEEMod default values for waste generated.

Construction

The construction-related GHG emissions were also included in the analysis and were based on

a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod.

Project Greenhouse Gas Emissions

The GHG emissions have been calculated based on the parameters described above. A summary of the results is shown below in Table 11 and the CalEEMod Model run for the proposed project is provided in Appendix A. Table 11 shows that the total for the proposed project's emissions (without credit for any reductions from sustainable design, and/or regulatory requirements) would be 216.3 MTCO2e per year. According to the thresholds of significance, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would exceed the SCAQMD draft threshold of 3,000 MTCO2e per year for all land uses. Therefore, as emissions do not exceed 3,000 MTCO2e per year, operation of the proposed project would not create a significant cumulative impact to global climate change.

Table 7 Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO_2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Maximum Annual Operations	0.85	200.00	201.00	0.09	0.01	206.00
Construction[1]	0.00	10.27	10.27	0.00	0.00	10.30
Total Emissions	0.85	210.27	211.27	0.09	0.01	216.30
SCAQMD Draft Screening Threshold						3,000
Exceeds Threshold?						No

Source: CalEEMod Version 2022.1.1.20 for Opening Year 2026.
(1) Construction GHG emissions CO_2e based on a 30-year amortization rate.

b) IMPACT: Less Than Significant Impact.

The proposed Project could have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the City of Rancho Mirage does not currently have a Climate Action Plan; however, the City's Sustainability Plan and Energy Action Plan were both adopted in March of 2013.

Senate Bill 32 (SB 32)

As stated previously, SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which was phased in starting in 2012.

Therefore, as the Project's emissions meet the threshold for compliance with Executive Order S-3-05, the Project's emissions also comply with the goals of AB 32 and the City of Rancho Mirage's Sustainability Plan and Energy Action Plan. Additionally, as the Project meets the current interim emissions targets/thresholds established by SCAQMD, the Project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, the majority of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the Project will be required to comply with these regulations as they come into effect.

At a level of 216.3 MTCO2e per year, the Project's GHG emissions do not exceed the SCAQMD draft threshold of 3,000 MTCO2e per year and is in compliance with the goals of the City of Rancho Mirage's Sustainability Plan and Energy Action Plan, AB-32 and SB-32.

Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of greenhouse gases in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The CARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below

1990 levels by 2050. CARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by CARB would serve to reduce the Project's post-2020 emissions level to the extent required by applicable by law.

In November 2017, CARB release the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. In addition, Chapter 4 of the Scoping Plan provides a broader description of the many actions and proposals being explored across the sectors, including the natural resources sector, to achieve the State's mid and long-term climate goals.

Guided by legislative direction, the actions identified in the 2017 Scoping Plan reduce overall GHG emissions in California and deliver policy signals that will continue to drive investment and certainty in a low carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and-Trade Program, which constrains and reduces emissions at covered sources.

Independent studies confirm CARB's determination that the state's existing and proposed regulatory framework will put the state on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted. Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies would allow the state to meet the 2050 target.

In November of 2022, the CARB released the 2022 Scoping Plan. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

As the latest, 2022 Scoping Plan builds upon previous versions, Project consistency with applicable strategies of the 2008, 2017, and 2022 Plan are assessed in Table 8. As shown in Table 8, the Project is consistent with the applicable strategies within the Scoping Plan.

Furthermore, at a level of 216.3 MTCO2e per year, the Project's GHG emissions would be in compliance with the City of Rancho Mirage's Sustainability Plan and Energy Action Plan, AB-32, SB-32, and the CARB Scoping Plan. Furthermore, the Project will comply with applicable Green Building Standards and City of Rancho Mirage's policies regarding sustainability (as dictated by the City's General Plan). Impacts are considered to be less than significant.

Table 8 Project Consistency with CARB Scoping Plan Policies and Measures

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero- emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	No Conflict. The Project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	No Conflict. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	No Conflict. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the Project (that are required to comply with the measures) will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero- waste.	No Conflict. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The Project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply with the 75 percent reduction required per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	No Conflict. The Project will comply with all applicable City ordinances and CALGreen requirements.

2017 Scoping Plan Recommended Actions to Reduce Greenhouse Gas Emissions	Project Compliance with Recommended Action
Implement Mobile Source Strategy: Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Car regulations.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Implement Mobile Source Strategy: At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025 and at least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Implement Mobile Source Strategy: Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOX standard.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Implement Mobile Source Strategy: Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.	No Conflict. These are CARB enforced standards; vehicles that access the Project (that are required to comply with the standards) will comply with the strategy.
Implement SB 350 by 2030: Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	No Conflict. The Project will be compliant with the current Title 24 standards.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	No Conflict. The Project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 75 percent reduction required by AB 341.
2022 Scoping Plan Priority Key Actions and Recommendations	**Project Compliance with Recommended Actions**
100 percent of light-duty vehicle sales are ZEVs by 2035.	Not Applicable. This action is in regard to vehicle sales, with an aim to have 100 percent of light-duty vehicle sales be ZEVs by 2035. The proposed Project is a residential use and would not interfere with such policymaking.
VMT per capita reduced 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.	No Conflict. The Project screens out of needing a traffic study and, therefore, would not result in an unmitigated impact to VMT. The Project is a residential use in close proximity to existing public transit and existing residential and commercial uses.
All electric appliances in new construction beginning 2026 (residential) and 2029 (commercial).	No Conflict. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

For existing residential buildings, 80 percent of appliance sales are electric by 2030, and 100 percent of appliance sales are electric by 2035 (appliances replaced at end of life). For existing commercial buildings, 80 percent of appliance sales are electric by 2030 and 100 percent of appliance sales are electric by 2045 (appliances replaced at end of life)	Not Applicable. This action is in regard to appliance sales and the proposed Project is a residential use and would not interfere with such policymaking. Furthermore, although this action is not necessarily applicable on a project-specific basis, the proposed Project is subject to the California Green Building Standards Code (proposed Part 11, Title 24) which was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the Project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the Project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non- cumulative GHG emission impacts from a climate change perspective." The resultant consequences of that climate change can cause adverse environmental effects. A Project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Currently, the County of Riverside CAP Update's initial screening procedure is to determine if a project will emit 3,000 MTCO2E per year or more. Projects that do not exceed this threshold require no further climate change analysis. Therefore, consistent with CEQA Guidelines Section 15064h(3), the County, as lead agency, has determined that the Project's contribution to cumulative GHG emissions and global climate change would be less than significant if the Project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

The Project would be consistent with the goals and objectives of the City of Rancho Mirage's Sustainability Plan and Energy Action Plan and the CARB Scoping Plan. Thus, given the Project's consistency with the City of Rancho Mirage's Sustainability Plan and Energy Action Plan and the CARB Scoping Plan, the Project's incremental contribution to GHG emissions and their effects on climate change would not be cumulatively considerable.

Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The project would also comply with applicable Green Building Standards and City of Rancho Mirage's policies regarding sustainability (as dictated by the City's General Plan, Sustainability Plan, and

Energy Action Plan). The previous section evaluated the proposed project's GHG emissions. The analysis determined that the GHG emissions would be below the regionally accepted thresholds. The calculated emissions would not exceed the GHG and criteria air pollutant thresholds and therefore would not interfere with the City's efforts to monitor and do its part to address climate change. The proposed project would not involve or require any variance from an adopted plan, policy, or regulation governing GHG emissions. As a result, no potential conflict with an applicable greenhouse gas policy plan, policy, or regulation would occur and the potential impacts are considered to be less than significant.

8.3 Mitigation Measures: None required.

9 - Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized	☐	☐	☐	☒

areas or where residences are intermixed with wildlands?				

Sources: Rancho Mirage General Plan 2017; State of California, Department of Forestry and Fire Protection, Fire Hazard Severity Zone Viewer; State of California, Department of Toxic Substances Control, EnviroStor; State of California, Department of Toxic Substances Control, Hazardous Facilities Subject to Corrective Action; State of California, Department of Transportation, Division of Aeronautics, California Public Use Airports and Federal Airfields; State of California, State Water Resources Control Board, GeoTracker; State of California, State Water Resources Control Board, Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit; and United States Environmental Protection Agency, Household Hazardous Waste.

9.1 Setting

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under Title 22 of the California Code of Regulations (CCR), the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) ignitability; (2) corrosivity; (3) reactivity; and (4) toxicity.

A hazardous material is defined as a substance or combination of substances which may either (1) cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

The Project site is located on one developed parcel in a semi-urban area of Rancho Mirage. The site was occupied by one single-family residence and sparse vegetation. Surrounding uses include vacant and developed land to west and south, and residential to the north, east and south of the Project site. The proposed Project would involve the subdivision of 5.04-gross acres into nine residential lots. The Project site is not known to contain hazardous materials.

9.2 Discussion of Impacts*:*

a) IMPACT: Less than Significant Impact.

The Project's development would require the use of diesel fuel to power the construction equipment. The diesel fuel would be properly sealed in tanks and would be transported to the site by truck. Transportation, storage, use and disposal of hazardous materials during construction activities would be required to comply with all applicable federal, state, and local statues and regulations. This includes the preparation of a SWPPP that would outline specific BMPs that would be administered during the construction of the Project in order to prevent the discharge of construction-related pollutants that could contaminate nearby water sources. The Resource Conservation and Recovery Act (RCRA; 42 USC 6901 et seq.) would require businesses with substantial quantities of hazardous materials to adhere to strict requirements in regard to handlings, transportation, and storing of supplies. Furthermore, the Hazardous Materials Transportation Act, 49 U.S.C. § 5101 et seq. protects against the risk to life, property, and the environment that are associated in the transportation of hazardous materials in intrastate, interstate, and foreign commerce. Upon completion of the proposed construction, all hazardous materials would be removed from the Project site. Therefore, with all applicable

regulations in place, impacts associated with routine transport of hazardous substances during construction activities would be less than significant.

b) IMPACT: Less than Significant Impact.

The Project's construction would require the use of diesel fuel to power the construction equipment. The diesel fuel would be properly sealed in tanks and would be transported to the site by truck. Other hazardous materials that would be used on-site during the Project's construction phase include, but are not limited to, gasoline, solvents, architectural coatings, and equipment lubricants. These products are strictly controlled and regulated and in the event of any spill, cleanup activities would be required to adhere to all pertinent protocols. As indicated in Subsection d), the Project site is not listed in either the CalEPA's Cortese List or the Environstor database. As a result, the likelihood of encountering contamination or other environmental concerns during the Project's construction phase is remote. As a result, the impacts would be less than significant.

c) IMPACT: No Impact.

There are no schools located within one-quarter of a mile from the Project site. Rancho Mirage High School is located approximately 3.3 miles northwest of the Project site. Rancho Mirage Elementary School is located approximately 4.7 miles to the southwest of the Project site. The nearest middle school is Nellie Coffman Middle School located approximately 3.8 miles west of the Project site. The proposed residential Project would not create a hazard for any local school. As a result, no impacts are anticipated.

d) IMPACT: No Impact.

According to the California Department of Toxic Substances Control "EnviroStor" Database, the Project site does not contain any parcel included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, the proposed Project would not create a significant hazard to the public or the environment. Nevertheless, future development could require Phase I Environmental Site Assessments and subsequent procedures, if necessary, to eliminate or minimize the potential hazards. No impact would occur.

e) IMPACT: No Impact.

The Project site is not located within an airport land use plan and the site is not located within two miles of a public airport or public use airport. The closest airport to the project site is the Palm Springs International Airport, with associated airport runways located as close as approximately 5.55 miles northwest of the project site. The next nearest airport to the Project site is the Bermuda Dunes Airport is located approximately 11.2 miles southeast of the Project. The Project would not introduce a structure that would interfere with the approach and take off of aircraft utilizing any regional airports. As a result, no impacts related to this issue would occur.

f) IMPACT: Less Than Significant Impact.

The City of Rancho Mirage has a Multi-Hazard Functional Plan that addresses the City's planned response and short-term recovery to extraordinary emergency situation that are associated with natural disasters, technological incidents, and national security emergencies. The Project would adhere to any applicable mitigation strategies listed within

the Emergency Operations Plan (EOP) to ensure that the Project would not physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

g) **IMPACT: No Impact.**

According to the City's General Plan Exhibit 27, Fire Threat Map, the Project site is not located within a wildfire hazard zone. No wildlands are located in the vicinity of the Project site. Under existing conditions, the Project site is sparsely vegetated with sandy soils and provides a limited fire fuel source. Based on the urban location of the Project site and lack of wildland in the Project vicinity, the development of the Project would not expose people or structures to wildland fires. No impact would occur.

9.3 Mitigation Measures: None required.

10 - Hydrology and Water Quality

HYDROLOGY AND WATER QUALITY – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☒	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Sources: Rancho Mirage General Plan, 2017; Federal Management Emergency Act Flood Insurance Rate Map No. 06065C1595G, effective August 28, 2008; S.D. Engineering and Associates, *Preliminary*

*Hydrology Study and Hydraulics Report for Tentative Tract Map No. 3863*6 dated April 28, 2023; S.D. Engineering and Associates, *Project Specific Water Quality Management Plan for Tentative Tract Map No. 3863*6 dated April 28, 2023; and Coachella Valley Water District, *2020 Coachella Valley Regional Urban Water Management Plan* dated June 30, 2021.

10.1 Setting

The Coachella Valley climate is characterized as "subtropical desert." Annual rainfall is very low, ranging from 2 to 4 inches per year on the valley floor and averaging 5 to 6 inches in the foothills. In some years, no measurable rainfall has been reported on portions of the valley floor. Most rainfall occurs during the cooler months of November through March, but occasional high-intensity thunderstorms and tropical storms occur in late summer and early fall. Although the ground may be generally dry at the beginning of a storm, sufficient amounts and intensities of rainfall can saturate the surface, substantially reducing percolation and increasing runoff. Summer storms pose a greater threat of localized flooding than winter storms because of their high intensity and short duration. Monsoons and warm winter storms with snowmelt can generate significant runoff over a much larger area.

10.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

Construction of the Project would be subject to National Pollutant Discharge Elimination System (NPDES) stormwater regulations for construction since there will be a soil disturbance of more than one acre. The Applicant would be required to comply with all rules, regulations and procedures of the NPDES permit for municipal, construction, and industrial activities as outlined by the California State Water Resources Control Board or any of its Regional Water Quality Control Boards (Colorado River Basin – Region 7). A Project specific Water Quality Management Plan (WQMP) must also be prepared to determine and describe the Best Management Practices (BMPs) that would be implemented on the Project site. The Project would be required to meet all applicable water quality standards or waste discharge requirements, thus avoiding any violation of such standards or requirements.

CVWD's domestic water system serving the City of Rancho Mirage includes 57 wells, nine aboveground storage reservoirs (water tanks) and an extensive system of distribution lines ranging in size from 2 to 36 inches in diameter. According to the General Plan, since the 1900's and leading through today, depletion of groundwater basins has been accelerating since the expansion of agricultural activities. Consequently, groundwater demand exceeds available recharge and in turn causing an "overdraft". To ensure water availability, Coachella Valley water agencies contract with Metropolitan Water District of Southern California (MWD) to exchange their water entitlement from the State Water Project for like amounts from the Colorado River. Water is diverted and percolates into the Whitewater Subbasin via MWD's aqueduct that crosses the Whitewater River. The mentioned agreement is intended to assure adequate water supplies through the year 2035. Furthermore, the aforementioned water agencies are required to prepare an Urban Water Management Plan (UWMP) every five years. This plan helps set forth a program to meet water demands during normal, dry, and multiple dry years. The UWMP helps to ensure that water supplies are being planned for and meet future growth. The 2020 UWMP determined that adequate water supplies would be available to serve existing service areas through the year 2040. As such, since the Project

site is within the City's existing service area and has been accounted for within these water projections, the proposed Project would be consistent with the 2020 UWMP and would not substantially decrease groundwater supplies. Therefore, impacts on groundwater supplies would be less than significant.

The Project would connect to a sewer line located beneath Ginger Rogers Road. Wastewater would be transported to and processed at one of CVWD's Wastewater Treatment Plants. CVWD implements all requirements of the Regional Water Quality Control Board which pertain to water quality and wastewater discharge. Adherence to all NPDES regulations would minimize any pollutants associated with urban runoff to a less than significant level. Therefore, with implementation of all applicable NPDES regulations, impacts to water quality standards or waste discharge requirements would be less than significant.

b) IMPACT: Less Than Significant Impact.

The primary source of water in the Coachella Valley is groundwater extracted by deep wells and replenished with Colorado River Water. The CVWD will provide domestic water service to the Project and is a participant in the Coachella Valley Regional Water Management Group that prepared an Integrated Regional Water Management Plan (WMP) in 2018. The 2018 Integrated Regional WMP determined that long-term regional demand for potable water is expected to increase; however, with continued conservation measures and replenishment of groundwater, sufficient supplies would be available to meet the projected demand. As such, Project water demands have already been accounted for within the 2018 Integrated Regional WMP and sufficient water supplies exist to serve the Project.

Water used to control fugitive dust would be transported to the site via truck. No direct ground water extraction would occur. Furthermore, the construction and post-construction BMPs would address contaminants of concern from excess runoff, thereby preventing the contamination of local groundwater. These BMP controls may include, but not be limited to, the following:

- Stabilization practices for all areas disturbed by construction and grading.
- Structural practices for all drainage/discharge locations.
- Stormwater management controls, including measures used to control pollutants occurring in stormwater discharges after construction activities are complete.
- Velocity dissipation devices to provide nonerosive flow conditions from the discharge point along the length of any outfall channel.
- Other controls, including waste disposal practices that prevent discharge of solid materials.

At Project buildout, water would be required to serve the needs of the proposed development of nine single-family homes. The Project site would capture and retain the volume of surface runoff generated during the 100-Year design storm on-site. Storage would be provided in two retention basins adjacent to Ginger Rogers Road to collect runoff from the on-site paved road. No new wells or additional water infrastructure are proposed. The Project would be required to comply with the CVWD's and the City's water-efficiency requirements, such as including the use of drought-tolerant planting materials and limited landscaping irrigation. The Project would also be required to comply with the CVWD's drought restrictions and water reduction

measures as applicable. Therefore, compliance and implementation of CVWD and City requirements would ensure that the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge. Impacts would be less than significant.

c.i) IMPACT: Less than Significant Impact.

The Project would subdivide the land for the future development on nine residential lots. The site would be mass graded, which would change the site's existing ground contours and alter the existing drainage patterns interior to the Project site. Although the Project would alter the subject property's internal drainage patterns, such changes would not result in substantial erosion or siltation on- or off-site. Under post-development conditions, the majority of the site would be covered with impervious surfaces and, therefore, the amount of exposed soils on the Project site would be minimal. Also, the Project would construct an integrated storm drain system on-site with site design BMPs (i.e., retention basins) to minimize the amount of water-borne pollutants carried from the Project site. The implementation of the retention basins and other design features would allow for control of any existing erosion or siltation that is attributed to the undeveloped site. Accordingly, the Project would not result in substantial erosion or siltation onsite or offsite and a less-than-significant impact would occur.

c.ii) IMPACT: Less than Significant Impact.

As described in Section 10(c)(i), above, implementation of the Project would alter the site's existing drainage patterns but would not substantially alter the drainage pattern of the local area.

The site would be required to collect and store 100% of runoff generated during the 100-year storm event. To achieve this each of the lots of the Project site would be required to retain their own stormwater runoff on-site using two retention basins. Runoff from the on-site paved road would be retained on-site as well. All retention basins and storage would be sized to retain the entire storm volume generated on-site during the 10-year design storm.

The Project site would also provide sufficient capacity to contain the runoff volume generated during the 100-year design storm. Collected and stored water would infiltrate into the ground within a maximum 72-hour period. Implementation of the Project would not substantially increase the rate or amount of surface water runoff discharged from the site in a manner that would result in flooding on or offsite.

c.iii) IMPACT: Less than Significant Impact.

As previously stated, the Project's retention basins would be sized and designed to accommodate all of the site's runoff. Accordingly, the Project would not create or contribute runoff which would exceed the capacity of any existing or planned storm water drainage system and impacts would be less than significant.

As discussed under Section 10(a), the proposed Project would be required to comply with a future SWPPP and the Project's WQMP, which identify required BMPs to be incorporated into the Project to ensure that near-term construction activities and long-term post-development activities of the proposed Project would not result in substantial amounts of polluted runoff. Therefore, with mandatory compliance with the Project's SWPPP and WQMP, the

proposed Project would not create or contribute substantial additional sources of polluted runoff, and impacts would be less than significant.

c.iv) IMPACT: No Impact.

According to FEMA FIRM No. 06065C1595G, the Project site is located within Zone X (unshaded), which is an area of minimal flood hazard and not within the 100-year nor 500-year flood plain. Accordingly, the Project site is not expected to be inundated by flood flows during the lifetime of the Project and the Project would not impede flood flows. No impact would occur.

d) IMPACT: No Impact.

The Project site is located within Zone X (unshaded), which is an area of minimal flood hazard and not within the 100-year nor 500-year flood plain. Furthermore, the Project site is not located within the vicinity of a water body. Due to the Project site location being a significant distance from the ocean and from any lakes or dams, there is no possibility of dam failure, tsunami or seiche. No impact would occur.

e) IMPACT: Less Than Significant Impact.

As described in Section 10(b), Project water demand has already been accounted for in the 2018 Integrated Regional WMP and sufficient water supplies exist to serve the Project. The Project would adhere to all applicable water quality standards and will implement a Project specific WQMP approved by the City and the Regional Water Quality Control Board for both construction and operational activities. Tentative Tract Map 38636 meets the hydrologic and hydraulic requirements established by the City of Rancho Mirage. Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Impacts would be less than significant.

10.3 Mitigation Measures: None required.

11 - Land Use and Planning

LAND USE AND PLANNING – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Sources: Rancho Mirage General Plan 2017; Rancho Mirage Municipal Code

11.1 Setting

The Project site is located in an urbanized area of the City of Rancho Mirage. Land uses and development located in the vicinity of the proposed Project site are outlined below:

- North of the Project site: Single-family residential properties. These parcels are designated as Very Low Density Residential (R-L-2).

- East of the Project site: Single-family residential properties. These parcels are designated as Very Low Density Residential (R-L-2).

- South of the Project site: Vacant land and single-family residential properties. These parcels are designated as Very Low Density Residential (R-L-2).

- West of the Project site: Landy Lane, undeveloped land, senior living community and office buildings. These parcels are designated as Office (O) with the following uses: Rancho Mirage Terrace Senior Living Community, Desert Periodontics, Weil Institute of Critical Care Medicine and the Tolerance Education Center.

Under existing conditions, the entire Project site is within R-L-2 (Residential Very Low Density) Zone. The R-L-2 zoning district identifies areas appropriate for large lot single-family uses. The allowable maximum density is two dwelling units per gross acre. The R-L-2 zoning district is intended to provide for single-family parcels ranging from eighteen thousand square feet or larger. The R-L-2 zoning district is consistent with the low density residential land use designation of the General Plan.

The southwestern portion of the project site is occupied by an older single-family residence that is planned for demolition. The project site is located in Section 30.

11.2 Discussion of Impacts:

a) IMPACT: No Impact.

Development of the Project would not physically disrupt or divide the arrangement of an established community. The Project site is located on one parcel in an urbanized area of the City. The Project site is surrounded by Landy Lane and vacant, undeveloped commercially designated land to the west. The properties to the immediate north and east are developed with residential homes. Properties to the south include Ginger Rogers Road, commercial land, vacant land and residential lots. Therefore, the Project would serve as an extension of the existing development patterns in the area. The granting of the requested subdivision and subsequent construction of the proposed residential lots would not result in any expansion of the use beyond the current boundaries. As a result, the project will not lead to any division of an existing established neighborhood. As a result, no impacts would occur.

b) IMPACT: Less Than Significant Impact.

The project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The project site is located in Section 30. According to the Rancho Mirage Land Use Element, this designation provides for single-family residential development typically on individual lots of about 0.5-acre. Planned residential developments are also an appropriate form under this designation. Lands with this designation may serve to buffer more dense residential development from estate residential uses.

The applicant has submitted a Major Variance application (VAR24-0002) to be processed concurrently with Tentative Tract Map Case No. TTM23-0001 (TTM 38636). It is a request to modify the minimum lot size specified under Rancho Mirage Municipal Code Section 17.08.020 Residential Districts General Development Standards, Table 2-3 Residential Zones General Development Standards Requirements by Individual Zoning District for R-L-2 from 18,000 square feet to 16,000 square feet. In November 2014, the Rancho Mirage City Council adopted a change to the minimum lots size standards in several residential zoning districts (R-H, R-M, R-L-3, and R-L-2). Specifically, the minimum lot size required under the Very Low Density Residential (R-L-2) zoning designation was changed from 15,000 square feet to 18,000 square feet. Most of the tentative maps in Section 30 were submitted prior to the adoption of the ZTA and therefore were not subject to the revised minimum lot size standards. In an effort to be compatible with the established lot sizes with the immediate area, the applicant is requesting to reduce the minimum lot size to 16,000 square feet for the proposed nine residential lots within Tentative Tract Map No. 38636.

Additionally, the City would review and approve all future architectural plans to ensure the proposed development meets the City's development standards for Very Low Density Residential land use designation. Therefore, the Project would comply with all applicable policies contained in the General Plan as well as all applicable development regulations/development standards contained in the Zoning Ordinance after granting the Major Variance application. Accordingly, implementation of the Project would not conflict with the City's General Plan or Zoning Ordinance. Therefore, implementation of the Project would not cause significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. A less than significant impact would occur.

11.3 Mitigation Measures: None required.

12 - Mineral Resources

MINERAL RESOURCES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Sources: Rancho Mirage General Plan 2017; Update of Mineral Land Classification Map for Portland Cement Concrete Grade Aggregate in the Palm Springs Production-Consumption Region, Riverside County, California (Special Report 198), California Geological Survey, 2007 and State of California, Department of Conservation, SMARA Generalized Mineral Land Classification Map.

12.1 Setting

In the Coachella Valley, mineral resources are largely limited to aggregates, such as sand, gravel, and crushed stone. These are major components of concrete, plaster, stucco, road base and fill, which are essential to the construction industry. Important regional deposits of these materials are being actively developed. Other mineral deposits in the region are generally limited to rocky outcroppings within the Little San Bernardino and Santa Rosa Mountains and have not been mined. There are currently no mines or extraction sites in Rancho Mirage.

The Surface Mining and Reclamation Act of 1975 (SMARA) has developed mineral land classification maps and reports to assist in the protection and development of mineral resources. According to the SMARA, the following four mineral land use classifications are identified:

● Mineral Resource Zone 1 (MRZ-1): This land use classification refers to areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.

● Mineral Resource Zone 2 (MRZ-2): This land use classification refers to areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.

● Mineral Resource Zone 3 (MRZ-3): This land use classification refers to areas where the significance of mineral deposits cannot be evaluated from the available data. Hilly or mountainous areas underlain by sedimentary, metamorphic, or igneous rock types and lowland

areas underlain by alluvial wash or fan material are often included in this category. Additional information about the quality of material in these areas could either upgrade the classification to MRZ-2 or downgrade it to MRZ-1.

● Mineral Resource Zone 4 (MRZ-4): This land use classification refers to areas where available information is inadequate for assignment to any other mineral resource zone.

12.2 Discussion of Impacts:

a) IMPACT: No Impact.

Per the California Geological Survey's Updated Mineral Land Classification Map, the Project site is located in Mineral Zone 1 (MRZ-1), which indicates that little likelihood exists for the presence of significant mineral resources. The Project site is designated as Very Low Density Residential (R-L-2) under the City's General Plan's Land Use and Zoning Map which does not allow mineral production. No portion of the Project site is designated for mineral land use. Furthermore, if a potential mineral extraction operation were to be located within the Project site, it would be incompatible both with the land use designation and surrounding land uses. Therefore, development of the Project would result in no impact relating to mineral resources.

b) IMPACT: No Impact.

As previously mentioned, no mineral, oil, or energy extraction and/or generation activities are located within the Project site. Moreover, the proposed Project would not interfere with any resource extraction activity. Therefore, no impact would result from the implementation of the proposed Project.

12.3 Mitigation Measures: None required.

13 - Noise

NOISE – Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Sources: Ganddini Group, Inc., *TTM 38636 Noise Impact Analysis, City of Rancho Mirage* dated October 20, 2023; State of California, Department of Transportation, Division of Aeronautics, California Public Use Airports and Federal Airfields; and City of Rancho Mirage 2017 General Plan Update, adopted November 16, 2017.

13.1 Setting

Noise

Noise has been defined as an unwanted sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

Vibration

According to the Federal Transit Administration (FTA) Transit Noise Impact and Vibration Assessment Manual, vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of

ground-borne vibrations include natural or human made causes. In addition, vibration sources may be continuous, such as factory machinery, or transient, such as explosions.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts on buildings. The human body responds to average vibration amplitude often described as the root mean square (RMS). The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Vibration decibel notation (VdB) is commonly used to measure RMS. Decibel notation (VdB) serves to reduce the range of numbers used to describe human response to vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. More detailed information regarding vibration can be found in the Noise Study (Appendix H) of this document.

Sensitive receptors that may be affected by Project generated noise include the existing single-family residential uses located adjacent to the north and east of the Project site and approximately 566 feet to the southwest, 590 feet to the west, 1,340 feet to the south, and 1,296 feet to the southeast of the Project site. Vehicle traffic associated with Bob Hope Drive is the dominant noise source and ambient noise levels on the Project site are estimated to range between 51 and 54 dBA CNEL.

13.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

Project Construction Noise (On-Site Equipment)

The Project site is adjacent to existing single family residential land uses to the north and to the east. Construction, alteration, repair, grading or improvement of any building, structure, road, improvement to real property for which a permit has been issued by the city if said construction occurs within the allowable hours set forth in Section 15.04.030 is exempt from the provisions of Section 8.45 of the City's Municipal Code. Therefore, as long as Project construction occurs outside the hours of 7:00 PM to 7:00 AM or on Sundays or holidays, or if written permission of the Building Official is obtained, Project construction will be consistent with the applicable ordinance. The Project is expected to comply with this ordinance and therefore will be consistent with applicable ordinances.

Existing noise levels and Project construction noise levels were modeled at the northern and eastern property lines using the FTA methodology in order to determine the expected increase in noise levels due to Project construction. Existing noise levels along the northern property line are estimated to average 52.5 dBA Leq and existing noise levels along the eastern property line are estimated to be 45.1 dBA Leq. Construction noise levels are estimated to reach 61.6 dBA Leq at the nearest residential property to the north and 66.8 at the nearest residential property to the east. Increases in ambient noise levels due to Project construction will reach up to 9.1 along the northern property line and reach up to 21.7 along the eastern property line.

The following best management practices (BMPs) shall be provided on Project plans and in contract specifications to minimize construction and operational noise emanating from the proposed Project:

1. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the Project site.

2. As applicable, all equipment shall be shut off when not in use.

3. To the degree possible, equipment staging will be located in acres that create the greatest distance between construction-related noise and vibration sources and existing sensitive receptors.

4. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away and shielded from existing residences in the vicinity of the Project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks.

5. No amplified music and/or voice will be allowed on the Project site.

6. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per City of Rancho Mirage Municipal Code Section 15.04.030.

7. The use of vibratory rollers, or similar vibratory equipment, will be avoided within 20 feet of the residential structures to the north of the Project site.

Project Construction Noise (Off-Site Traffic)

Construction truck trips would occur throughout the construction period. Given the Project site's proximity to Interstate 10 Freeway, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the TTM 38636 *Air Quality, Global Climate Change, and Energy Impact Analysis* (Ganddini Group, Inc., 2023), the greatest number of construction-related vehicle trips per day would be during grading and paving at up to 15 vehicle trips per day (for worker trips). The addition of 15 trips will result in an increase of less than 1 dB. Therefore, vehicle traffic generated during Project construction is nominal relative to existing roadway volumes. The Project impact is less than significant; no mitigation is required.

Project Operational Noise (Project Generated Traffic Noise)

The proposed Project is the development of the approximately 5.04-gross acres/4.37 net-acre Project site with 9 single-family residential lots. Due to the Project's size, it is anticipated that it will screen out and will not require a traffic study. Therefore, based on the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual (2021) rate for single-

family housing (ITE 210), the proposed Project will have trip generation rates of 9.43 trips per dwelling unit per weekday, 9.48 trips per dwelling unit per Saturday, and 8.48 trips per dwelling unit per Sunday. Considering these trip generation rates and that the Project is only 9 dwelling units, the proposed Project would be anticipated to generate up to approximately 85 vehicle trips per day.

Existing noise levels at the Project site were modeled at 54.1 dBA CNEL. Existing plus Project generated vehicle traffic were modeled at 54.2 dBA CNEL and would result in an increase of 0.1 dBA CNEL over existing noise levels. Project generated vehicle traffic would not result in substantial increases in ambient noise levels. The Project impact is less than significant; no mitigation is required.

Future Traffic Noise at the Project Site

Per the City of Rancho Mirage General Plan, noise levels of up to 57.5 dBA CNEL are considered "normally acceptable" and up to 70 dBA CNEL are considered "conditionally acceptable" for single-family residential uses. Per the City, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Noise levels at the western property line

Future traffic noise levels at the Project site are expected to reach 57.3 at proposed residential lots and will not exceed the City's criteria of normally acceptable (57.5 dBA CNEL). The proposed Project would be consistent with the City's General Plan Noise Element Noise Level and Land Use Compatibility Criteria.

The proposed Project will not expose sensitive receptors to excessive noise levels. As a result, the impacts would be less than significant.

b) IMPACT: Less Than Significant Impact.

The City of Rancho Mirage Municipal Code Section 17.18.080 states that no vibration associated with any use shall be allowed which is discernible beyond the boundary line of the subject property. However, the City has not established thresholds of significance concerning groundborne vibration. In the absence of City-established thresholds, groundborne vibration impacts are based on guidance from the *Transportation and Construction Vibration Guidance Manual* (California Department of Transportation, 2020). Accordingly, the project would result in a significant impact if:

- Groundborne vibration levels generated by the project have the potential to cause architectural damage at nearby buildings by exceeding the following PPV:
  - 0.08 in/sec at extremely fragile historic buildings, ruins, ancient monuments
  - 0.10 in/sec at fragile buildings
  - 0.25 in/sec at historic and some old buildings
  - 0.30 in/sec at older residential structures

- 0.50 in/sec at new residential structures and modern industrial/commercial buildings.

- Groundborne vibration levels generated by the project have the potential to cause severe annoyance to people living or working in nearby buildings by exceeding a PPV of 0.4 in/sec.

Construction-Related Vibration Impacts

Existing structures in the immediate vicinity of the project site include the single-family residential dwelling units located as close as approximately 15 feet to the north and 26 feet to the east of the project site and the commercial building located as close as approximately 195 feet to the southwest of the project site.

The residential threshold of 0.3 PPV in/sec will be exceeded at the residential uses to the north. BMPs prohibiting the use of vibratory rollers, or other similar vibratory equipment, within 20 feet of residential structures to the north will reduce potential architectural damage impacts. With incorporation of the needed best management practice for architectural damage, potential annoyance at the nearest residential uses would be below the 0.4 in/sec PPV threshold. Furthermore, annoyance is expected to be temporary, occurring during the daytime hours and only when vibratory equipment, such as vibratory rollers, are in proximity to a residential structure. Project construction would not result in the exposure of persons to excessive groundborne vibration and impacts would be less than significant with incorporation of BMPs management practices listed above under 13.2 a).

The most substantial sources of groundborne vibration during post-construction project operations will include the movement of passenger vehicles and trucks on paved and generally smooth surfaces. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020), which is a substantially lower PPV than that of a vibratory roller (0.210 in/sec PPV at 25 feet). Therefore, groundborne vibration levels generated by project operation would not exceed those modeled for project construction. This potential impact is therefore considered less than significant.

The Project will be required to adhere to all pertinent City noise control regulations. The limited duration of construction activities and the City's construction-related noise control requirements will reduce the potential impacts. Additionally, construction equipment would move throughout the entire site and would only be located near the Project boundaries for short periods of time. Thus, vibration levels at the receptors located near the Project boundaries would be less than these maximum levels for a majority of the construction period. Although vibration levels may be perceptible for short periods of time, maximum vibration levels would not exceed FTA thresholds. Therefore, Project construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant. As a result, the impacts would be less than significant.

c) IMPACT: No Impact.

The closest airport to the project site is the Palm Springs International Airport, with associated airport runways located as close as approximately 5.55 miles northwest of the project site. As shown on Map PS-3, Noise Compatibility Contours, of the Riverside County Airport

Land Use Compatibility Plan Policy Document (adopted March 2005) the project site is located well outside the 60 dBA CNEL noise contour of Palm Springs Airport. Therefore, the proposed project would not expose people residing or working in the area to excessive noise levels. There is no impact, and no mitigation is required.

13.3 Mitigation Measures: None required.

14 - Population and Housing

POPULATION AND HOUSING – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Sources: Rancho Mirage General Plan 2017; State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, January 2021-2024, with 2020 Benchmark. May 2024.

14.1 Setting

The southwestern portion of the 5.04-acre Project site is occupied by an older single-family residence that is planned for demolition. The only mature trees located within the property are located in the yard areas of this residence. The remainder of the Project site consists of both native and non-native shrubs and grasses. The site is dominated by creosote bush (Larrea tridentata). The proposed Project would subdivide the 5.04 gross acres into nine residential lots.

14.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

Growth-inducing impacts are generally associated with the provision of urban services to undeveloped or rural areas. Growth-inducing impacts include the following:

- New development in an area presently undeveloped and economic factors which may influence development. The site is currently largely undeveloped (the site is occupied by an older single-family residence) though the site has been disturbed. All land surrounding the property are designated for residential development.
- Extension of roadways and other transportation facilities. Future roadway and infrastructure connections will serve the proposed Project site only.
- Extension of infrastructure and other improvements. The installation of any new utility lines will not lead to subsequent offsite development since these utility connections will serve the site only.
- Major off-site public projects (treatment plants, etc.). The Project's increase in demand for utility services can be accommodated without the construction or expansion of landfills, water treatment plants, or wastewater treatment plants.

- The removal of housing requiring replacement housing elsewhere. The site contains a single older housing unit. As a result, no replacement of housing will be required.
- Additional population growth leading to increased demand for goods and services. The proposed 9-lot Project would potentially result in 17 new residents assuming an average household size of 1.83 persons per unit derived from the most recent California Department of Finance.
- Short-term growth-inducing impacts related to the Project's construction.

The Project will result in temporary employment during the construction phase. The newly established roads and existing utility lines will serve the Project site only and will not extend into undeveloped areas. The proposed Project will not result in any unplanned growth. Therefore, the impacts would be less than significant.

b) IMPACT: Less Than Significant Impact.

The Project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The proposed 9-lot Project would potentially result in 17 new residents assuming an average household size of 1.83 persons per unit derived from the most recent California Department of Finance. The existing single-family dwelling located on the property is planned for demolition. Therefore, the impacts would be less than significant.

14.3 Mitigation Measures: None required.

15 - Public Services

PUBLIC SERVICES – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

Sources: Rancho Mirage General Plan, 2017; Residential and Commercial/Industrial Development School Fee Justification Study for the Palm Springs Unified School District, dated March 26, 2024; and Palm Springs Unified School District Website, 2024.

15.1 Setting

Fire Protection Services

The Riverside County Fire Department (RCFD) provides fire protection in Rancho Mirage under contract to the California Department of Forestry. A typical response to a fire will place eight personnel, including a battalion chief, on the scene within five minutes. This includes fire fighters and certified paramedics. The Fire Department has 27 sworn, 2 full time non-sworn and 1 part time non-sworn personnel, serving 24.7 square miles and ~18,799 persons.

Police Protection Services

Police protection in Rancho Mirage is provided on a service contract basis by the Riverside County Sheriff's Department (RCSD) that operates out of the Palm Desert Station. Their staff consists of 29 full time officers (24 sworn and 5 non-sworn). The officers have a daily staffing of 7 officers that work in two, 12-hour shifts. Four deputy patrol officers work the day shift, and 3 deputy patrol officers work the night shift. The City currently provides 1.77 officers per 1,000 residents.

Schools

Rancho Mirage is served by two public school districts: Palm Springs Unified School District, which serves the majority of Rancho Mirage, and the Desert Sands Unified School District, which serves the portion of Rancho Mirage that lies south of Frank Sinatra Drive and east of Bob Hope Drive. The Project site is within the boundaries of the Palm Springs Unified School District.

Parks

In 1989, the City prepared a Parks Master Plan that included an assessment of local park needs. Rancho Mirage currently contains six parks, including a mix of mini and local parks.

15.2 Discussion of Impacts:

a.i) IMPACT: Less than Significant Impact.

The Riverside County Fire Department (RCFD), under contract with the City of Rancho Mirage, provides a full range of 24-hour fire protection and emergency medical services to the City. The City's Fire Department is made up of 27 sworn, 2 full time non-sworn and 1 part time nonsworn personnel, serving 24.7 square miles with an estimated service population of 17,504 (Riverside County Fire Department for Rancho Mirage). RCFD maintains two fire stations within the City of Rancho Mirage, Fire Station 50, and Fire Station 69. Fire Station 50 is located at 70-801 Highway 111 and this station covers the southern portion of the City and is equipped with a Medic Engine and Paramedic Ambulance. Five firefighters are staffed at this station daily and three of the five firefighters are paramedics. Fire Station 69 is located at 71-751 Gerald Ford Drive and covers the northern portion of Rancho Mirage and is also staffed with five firefighters daily, with three of the five firefighters being paramedics. The Riverside County Fire Department operates under a Regional Fire Protection Program, which allows all of its fire stations to provide support as needed regardless of jurisdictional boundaries. In addition to the two fire stations located in Rancho Mirage, five other County operated fire stations are located close to Rancho Mirage: Station 71 (Palm Desert), Roy Wilson Fire Station (Thousand Palms), Station 33 (Palm Desert), Fire Station 81 (North Bermuda Dunes), Fire Station 55 (Indian Wells), and Riverside County Fire Department in La Quinta. In the event of a major incident, resources from these stations can be used to assist fire personnel in Rancho Mirage. Fire Station 69 is approximately 0.8 miles southwest of the Project site.

The RCFD currently reviews all new development plans. The proposed Project would be required to conform to all fire protection and prevention requirements, including, but not limited to, building setbacks, emergency access, and fire flow (or the flow rate of water that is available for extinguishing fires). The proposed Project would only place an incremental demand on fire services since the Project includes the installation of fire hydrants and sprinkler systems inside the buildings. Furthermore, the Project will be reviewed by County Fire officials to ensure adequate fire service and safety as a result of project implementation. Development of the proposed Project would result in a minimal increase in demand for fire services. Service calls could place an additional demand for fire personnel, fire apparatus and equipment. The development will be required to pay development mitigation fees for fire services at the time of building permits. Therefore, impacts associated with fire protection services would be less than significant.

a.ii) Less than Significant Impact.
Law enforcement services in the City of Rancho Mirage are provided under a contractual agreement with Riverside County Sheriff's Department (RCSD). The RCSD contract provides for a staff of 30 full time officers (25 sworn and 5 non-sworn). The officers have a daily staffing of 7 officers that work in two, 12-hour shifts. Four deputy patrol officers work the day shift, and 3 deputy patrol officers work the night shift. The City's contract currently provides 1.65 officers per 1,000 residents, which is well above the commonly used and accepted ratio of one officer per 1,000 residents. The Sheriff's department provides 24-hour police law enforcement services and operates a small police substation at the Rancho Mirage Public Library. The main County sheriff's station is located in the City of Palm Desert at 73-705 Gerald Ford Drive. The Palm Desert Station is located approximately 1.2 miles southwest from the Project site.

Emergency response times vary and are dependent on the location of patrol cars. The average response time for priority 1 calls in the City of Rancho Mirage was 5 to 6 minutes. The project site is located in an existing urban area and is currently serviced by the Sheriff's Department. Therefore, the proposed project would not substantially increase the need for new or expanded police facilities and response times are not expected to be impacted. Additionally, all new construction in the City will be required to pay Development Impact Fees to assist in offsetting impacts to police services. As a result, the impacts would be less than significant.

a.iii) Less than Significant Impact.
The nearest high school is Rancho Mirage High School, which is located approximately 3.3 miles to the northwest of the Project site. Rancho Mirage Elementary School is located approximately 4.7 miles to the southwest of the Project site. The nearest middle school is Nellie Coffman Middle School located approximately 3.8 miles west of the Project site. The addition of the future nine single-family residences would not significantly increase the number of students within nearby schools. However, the project would be required to pay School Impact Fees to the Palm Springs Unified School District (PSUSD). Current impact fees effective June 10, 2024 will be $5.17 per residential foot for detached single family homes according to the March 24, 2024 Residential and Commercial/Industrial Development School Fee Justification Study for the PSUSD. Payment of these fees would offset impacts from the increased demand on school services, ensuring that impacts will be less than significant.

a.iv) Less than Significant Impact.
The City of Rancho Mirage provides public parks, open space, and multi-city recreational facilities with various amenities. The proposed project would be required to comply with the City's parkland in lieu fee (Quimby) and other development impact fees requirements. The future residents generated by project implementation may lead to an incremental increase in physical deterioration of City public recreational facilities. The occupancy of the 9 units would not substantially increase the use of existing parks as to accelerate their physical deterioration since the site is relatively small. Additionally, the project will be required to comply with the City's development impact fee requirements. As a result, the impacts would be less than significant.

a.v) Less than Significant Impact.
The Project would result in less-than-significant impacts on other public facilities. It is not

expected that the Project would result in an increase in population that would require the provision of additional public facilities within the City of Rancho Mirage. Access to the Project site is provided by an existing road (Ginger Rogers Road) and would connect to existing utility infrastructure. New public roads or public transportation facilities, or other public facilities, are not required. Therefore, impacts would be less than significant.

15.3 Mitigation Measures: None required.

16 - Recreation

RECREATION – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Source: Rancho Mirage General Plan 2017

16.1 Setting

The City offers a wide variety of recreational opportunities, including golf courses, bikeways, and parkland. In addition, the City is near thousands of acres of National Park and National Monument lands, U.S. Forest Service wilderness lands, and state, regional and tribal parks that contain miles of hiking, biking, and equestrian trails.

The proposed project would involve the subdivision of 5.04-gross acres into nine residential lots. The project site's General Plan and Zoning designation is Very Low Density Residential (R-L-2). The relatively level 5.04-acre site ranges from 325 feet above mean sea level (AMSL) to 330 feet AMSL. The southwestern portion of the project site is occupied by an older single-family residence that is planned for demolition.

16.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

The project would be required to comply with the City's in-lieu park dedication fee (Quimby Act) and other development impact fees requirements. The future residents generated by project implementation may lead to an incremental increase in physical deterioration of City public recreational facilities. The occupancy of the 9-units would not substantially increase the use of existing parks as to accelerate their physical deterioration since the site is relatively small. Additionally, the project will be required to comply with the City's development impact fee requirements. Therefore, the Project would have a less than significant impact on recreational facilities within the City.

b) IMPACT: Less Than Significant Impact.

As previously indicated, the implementation of the proposed project would not physically impact any existing parks and recreational facilities in the City. No such facilities are located adjacent to the project site. As a result, the impacts would be less than significant.

16.3 Mitigation Measures: None required.

17 - Transportation

TRANSPORTATION – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

Source: Riverside County Transportation Analysis Guidelines, and Rancho Mirage General Plan, 2017.

17.1 Setting

The Project Applicant proposes the subdivision of 5.04-gross acres into nine single-family residential lots. The Project is exempt from preparing either a Traffic Impact Analysis or Vehicle Miles Traveled Screening Analysis because the Project would generate less than 100 peak hour trips and proposes less than 110 single-family housing units per the County of Riverside's Transportation Analysis Guidelines as well as the City of Rancho Mirage's VMT Transportation Analysis Policy adopted on February 18, 2021.

17.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

Trip generation represents the amount of traffic which is both attracted to and produced by a development. The Project's Air Quality and Greenhouse Gas Report (Appendix A) utilized the trip generation rates for single-family residential dwelling units provided in the Institute of Engineers Trip Generation Manual 11th Edition (2021). As shown in the modeling through use of the ITE trip generation rates, the Project is anticipated to generate approximately 85 average daily vehicle trips. Pursuant to the County's Transportation Analysis Guidelines, projects that generate 100 or less daily trips are not required to prepare a Traffic Impact Analysis that includes Level of Service (LOS) analysis and would therefore not result in substantial adverse effects on the circulation system. Because the Project would generate less

than 100 daily trips, the Project would not conflict with County policy addressing the circulation system and impacts would be less than significant.

b) IMPACT: Less Than Significant Impact.

CEQA Guidelines section 15064.3 sets forth guidelines for implementing Senate Bill 743 (SB 743) for reduction of GHG emissions and development of multimodal transportation networks. SB 743 requires amendments to the CEQA Guidelines to provide for an alternative criterion to the LOS methodology for evaluating transportation impacts. Generally, "vehicle miles travelled" or VMT is considered as the most appropriate measurement of transportation impacts. VMT refers to the amount and distance of automobile travel attributable to a project.

The Project's traffic was evaluated against screening criteria to determine if it could clearly be determined that the Project would not generate substantial VMT and therefore be consistent with CEQA Guidelines Section 15064.3(b), or if additional analysis was needed to determine the significance of Project-related VMT. The screening criteria used in the Project analysis are established in the County's Traffic Impact Analysis Guidelines. Pursuant to the Transportation Analysis Guidelines, single family housing projects less than or equal to 110 dwelling units with a greenhouse gas emissions generation of less than 3,000 MTCO2e are considered to have a less-than-significant impact related to VMT. As noted in Section 8(a), the Project is calculated to generate approximately 216.3 MTCO2e per year, which is well below 3,000 MTCO2e. Because the Project would ultimately develop nine dwelling units and generates less than 3,000 MTCO2e, the Project would result in a less-than-significant impact related to VMT. Accordingly, the Project would not conflict with or be inconsistent with CEQA Guidelines Section 15064.3(b).

c) IMPACT: Less Than Significant Impact.

The types of traffic generated from the Project (i.e., passenger cars) would be compatible with the type of traffic observed along roadways within the Project vicinity under existing conditions. In addition, prior to development of the Project site, the City will review and approve the proposed architectural plans to ensure all proposed improvements within the public right-of-way would be installed in conformance with City design standards and that no hazardous transportation design features would be introduced through implementation of the Project. In addition, all proposed Project circulation improvements would be designed and constructed to City standards. Accordingly, the Project would not create or substantially increase safety hazards due to a design feature or incompatible use. Impacts would be less than significant.

d) IMPACT: Less Than Significant Impact.

Fire apparatus access for the nine-lot development would include a private road that meets the Fire Code requirements for width, grade, clearance, dead-end length, and turnarounds. Accordingly, the Project would not create or substantially increase safety hazards due to inadequate emergency access. Impacts would be less than significant.

17.3 Mitigation Measures: None required.

18 - Tribal Cultural Resources

TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Source: ArchaeoPaleo Resource Management, Inc., 2024. *Phase I Archaeological and Paleontological Resources Assessment for the Rancho Mirage 9 Lot Subdivision Project, City of Rancho Mirage, Riverside County, California d*ated January 2024 and City of Rancho Mirage, Tribal Consultation Letters dated July 31, 2024 (Appendix I – Tribal Consultation Letters), Agua Caliente Band of Cahuilla Indians Letters dated August 22, 2024 and September 11, 2024, Augustine Band of Cahuilla Indians Letter dated August 6, 2024 and Morongo Band of Mission Indians Letter dated August 12, 2024.

18.1 Setting

The City of Rancho Mirage in their role as Lead Agency contacted all potentially interested tribes identified by the Native American Heritage Commission (NAHC) pursuant to Assembly Bill 52 (AB 52) for information regarding their knowledge of cultural resources that were within or near the Project area. These groups include the following:

- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Indians
- Cabazon Band of Cahuilla Indians

- Cahuilla Band of Indians
- Los Coyotes Band of Cahuilla and Cupeño Indians
- Morongo Band of Mission Indians
- Quechan Tribe of the Fort Yuma Reservation
- Ramona Band of Cahuilla
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Torres-Martinez Desert Cahuilla Indians

Additionally, ArchaeoPaleo Resource Management, Inc. (APRMI) staff requested a Sacred Lands File Search and a Native American Contacts list for the Project from the Native American Heritage Commission (NAHC) on September 14, 2023. The NAHC is the State of California's trustee agency for the protection of "tribal cultural resources," as defined by California Public Resources Code Section 21074 and is tasked with identifying and cataloging properties of Native American cultural value throughout the state. The NAHC's search of the Sacred Lands Files, received on November 15, 2023, provided APRMI with a Native American Contacts list. APRMI contacted the tribes, individuals, and organizations listed by phone on November 17th to ensure that the mailing information is correct and to let them know that an informational package regarding the Project, including a Project description, was being sent to them by mail. The Project informational package along with an accompanying letter was sent to them by regular mail, on November 22, 2023. Any written responses to APRMI's outreach can be viewed in Appendix C.

APRMI was contacted telephonically on November 20, 2023, by Patricia Garcia of the Agua Caliente Band of Cahuilla Indians, who expressed concern over the uncovering of cremations near to the Project site. Another member of the Agua Caliente Band of Cahuilla Indians, Xitaly Madrigal, followed up on December 5, 2023, and requested by email AB 52 consultation and the employment of a tribal monitor during construction activities.

18.2 Discussion of Impacts:

a) IMPACT: Less than Significant with Mitigation Incorporated.

The City currently does not have any sites listed within the City's incorporated boundaries on the National Register of Historic Places (NRHP) and the site is not listed in the California Register of Historic Resources (CRHR). Mitigation Measures CR-1 through CR-8 described in Section 5, Cultural Resources, will be applied to Section 18, Tribal Cultural Resources, to ensure the protection of historical resources. Therefore, with implementation of Mitigation Measures CR-1 through CR-8, impacts would be less than significant.

b) IMPACT: Less than Significant with Mitigation Incorporated.

Three tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, and Morongo Band of Mission Indians) provided a response to the AB-52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on July 31, 2024. The Agua Caliente Band of Cahuilla Indians was the only tribe to request a formal consultation in their letter dated August 22, 2024. They concluded their consultation on September 11, 2024 with the recommendation that a condition of approval be added to the Project.

APRMI has recommended that Mitigation Measures TCR-1 and TCR-2 below to be applied to the Project to reduce any potential impacts to a level of insignificance.

18.3 Mitigation Measures:

TCR-1 If buried cultural materials are discovered during the earth-moving operations, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds and, if necessary, develop a treatment pan in consultation with the City of Rancho Mirage and the appropriate Native American tribes. The presence of an archaeologist shall meet the Secretary of the Interior's standards during any ground disturbing activities.

TCR-2 During any ground disturbing activities (including any archaeological testing and surveys) the presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) shall be required. Should buried cultural deposits be encountered, the Monitor shall request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

19 - Utilities and Service Systems

UTILITIES AND SERVICE SYSTEMS – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers' existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statues and regulations related to solid waste?	☐	☐	☐	☒

Sources: Rancho Mirage General Plan 2017; 2020 Coachella Valley Regional Urban Water Management Plan, June 30, 2021; California Department of Resources Recycling and Recovery (CalRecycle) Estimated Solid Waste Generation Rate, 2006; Cal Recycle Solid Waste Information System, 2019.

19.1 Setting

Domestic Water

Domestic water for the majority of the City is provided by the Coachella Valley Water District (CVWD). Groundwater is the principal source of municipal water supply in the Coachella Valley. The main groundwater source for the entire valley is the Coachella Valley Groundwater Basin, Indio Subbasin, and the Whitewater River Subbasin. The Whitewater River Subbasin underlies a major portion of the valley floor and encompasses approximately 400 square miles.

Wastewater

Most CVWD domestic water customers also receive sewer services from CVWD. Nearly 6.3 billion gallons of wastewater are treated annually. CVWD operates six water reclamation plants and maintains more than 1,000 miles of sewer pipelines and more than 30 lift stations that collect and transport wastewater to the nearest water reclamation facility.

Solid Waste

The City currently contracts with Burrtec to provide solid waste collection and disposal management services. Municipal solid waste generated in the City is taken to the Edom Hill Transfer Station, which has a maximum permitted throughput of 3,500 tons per day and a permitted capacity of 3,500 tons per day for general waste.

19.2 Discussion of Impacts:

a. & b.) IMPACT: Less than Significant Impact.

Domestic Water

CVWD is responsible for supplying potable water to the Project site. As discussed in the 2020 CVWD Urban Water Management Plan, herein incorporated by reference as "UWMP," adequate water supplies are projected to be available to meet CVWD's estimated water demand through 2040 under normal, historic, single-dry, and historic multiple-dry year conditions. CVWD forecasts for projected water demand are based on the population projections of Southern California of Associated Governments (SCAG), which rely on the adopted land use designations contained within the general plans that cover the geographic area within CVWD's service. The water use projections utilized in the 2020 CVWD UWMP were based on the site's existing "Very Low Density Residential" land use designation on the City of Rancho Mirage Land Use Map. Because the Project would be consistent with the existing land use designation, CVWD would have sufficient water supplies available to serve the Project from existing entitlements/resources and no expanded entitlements are needed.

Future single family residences are expected to use less water than existing properties due to the mandated use of high efficiency plumbing fixtures under the CALGreen building standards and reduced landscape water use mandated by CVWD's Landscape Ordinance. Additionally, the Project would be required to implement all water conservation measures imposed by the CVWD under normal as well as drought conditions over the life of the Project. These include requirements of Executive Order B-29-15, mandating reductions in water use by 36% in the Coachella Valley. The Project would tie into the existing domestic water line beneath Ginger Rogers Road. No new wells or additional water infrastructure or entitlements will be required. Therefore, the Project would have a less-than-significant impact.

Stormwater

The City requires on-site detention and/or retention basins for all new developments to manage surface water flows and reduce runoff from sources such as stormwater and landscape irrigation. The Project complies with this requirement by including on-site retention basins to ensure stormwater is retained on-site. Additional measures to address onsite stormwater management are described in Section 3.10, Hydrology and Water Quality. Project-related impacts to stormwater management systems are expected to be less-than-significant.

c) IMPACT: Less than Significant Impact.

Wastewater generated from the Project site would be treated through the CVWD. CVWD's wastewater reclamation system collects and treats approximately 17 million gallons per day (MGD). The wastewater collection system consists of approximately 1,100 miles of collection piping and includes 35 sewer lift stations and associated force mains. Wastewater generated by the Project will be conveyed to CVWD WRP-10 in Palm Desert. The design capacity of the secondary treatment is 18 MGD with a current tertiary treatment capacity of 15 MGD (16,800 AFY). Based on the 2020 UWMP, WRP-10 treated approximately 8 MGD (9,238 AFY) of wastewater in 2020. The Project would generate a minimal increase in wastewater, which has already been accounted for in the City's General Plan. Therefore, the Project would not result in a significant impact.

The Project would tie into the existing sanitary sewer line located beneath Ginger Rogers Road, and wastewater would be transported to Coachella's Wastewater Treatment Plan (WWTP). The WWTP implements all applicable requirements of the Colorado River Basin Regional Water Quality Control Board, and no violations of wastewater treatment requirements are anticipated. Therefore, the Project would have a less-than-significant impact.

d) IMPACT: Less than Significant Impact.

Solid waste disposal and recycling services for the City of Rancho Mirage is provided by Burrtec. Solid waste and recycling collected from the proposed project will be hauled to the Edom Hill Transfer Station. Waste from this transfer station is then sent to a permitted landfill or recycling facility outside of the Coachella Valley. These include Badlands Disposal Site, El Sobrante Sanitary Landfill and Lamb Canyon Disposal Site. Cal-Recycle data indicates the Badlands Disposal site has 15,748,799 cubic yards of remaining capacity, the El Sobrante Landfill has a remaining capacity of 143,977,170 tons of solid waste, and Lamb Canyon Disposal has a remaining solid waste capacity of 19,242,950 cubic yards.

Pursuant to AB 939, at least 50 percent of the Project's solid waste is required to be diverted from landfills; therefore, the project would generate a maximum of 0.05 tons of solid waste per day requiring landfilling.

Non-recyclable solid waste generated during long-term operation of the project would be disposed of at the Edom Hill Transfer Station. As described above, these landfills receive well below their maximum permitted daily disposal volume; thus, waste generated by the Project's operation is not anticipated to cause the landfill to exceed its maximum permitted daily disposal

volume. Because the Project would generate a negligible amount of solid waste per day as compared to the permitted daily capacities at receiving landfills, impacts to regional landfill facilities during the Project's long-term operational activities would be less than significant.

e) IMPACT: No Impact.

The proposed project, like all other developments in Rancho Mirage and Riverside County, would be required to adhere to City and County ordinances with respect to waste reduction and recycling. As a result, no impacts related to State and local statutes governing solid waste are anticipated.

19.3 Mitigation Measures: None required.

20 - Wildfire

WILDFIRE – Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

Sources: Rancho Mirage General Plan 2017, General Plan Fire Safety Element 2022, and State of California, Department of Forestry and Fire Protection, 2025, Fire Hazard Severity Zone Viewer.

20.1 Setting

The California Department of Forestry and Fire Protection (CAL FIRE) ranks fire hazards of wildland areas in the state using four main criteria: fuels, weather, assets at risk, and level of service. There are no state responsibility areas (SRAs) in the City of Rancho Mirage. As of March 24, 2025, there are no Very High Fire Hazard Severity Zone designations within the City. There are Moderate Fire Hazard Severity Zone designations in the Local Responsibility Area (LRA) within the City in the southern end of the City near the Santa Rosa Mountains, away from

the Project site. Historical record indicates that the wildland fire hazard in Rancho Mirage is relatively low.

20.2 Discussion of Impacts:

a) IMPACT: Less Than Significant Impact.

The Project site is not located within a fire zone classified as either a State Responsibility Area (SRA) or a Very High Fire Hazard Severity Zone. Surface streets that would be improved would serve the project site and adjacent area. Furthermore, the proposed project would not involve the closure or alteration of any existing evacuation routes that would be important in the event of a wildfire. At no time during construction will adjacent streets be completely closed to traffic. All construction staging must occur on-site. As a result, a less than significant impact would occur.

b) IMPACT: Less Than Significant Impact.

The Project site is located in an urbanized area. The Project has a very limited potential to exacerbate wildfire risks by placing new residential buildings in proximity to the mountain slopes. However, all proposed buildings and improvements would be on the low-lying valley floor. Most existing vegetation would be cleared during construction and replaced by structures and paved surfaces. New landscape vegetation would be carefully maintained and watered regularly, limiting the possibility for vegetation fires to ignite and spread. Potentially hazardous and/or combustible materials onsite will be handled, used, and stored in compliance with applicable regulations and guidelines to reduce potential fire hazards (see Section 9, Hazards and Hazardous Materials). The proposed project may be exposed to particulate emissions generated by wildland fires. However, the potential impacts would not be exclusive to the project site since criteria pollutant emissions from wildland fires may affect the entire City as well as the surrounding cities and unincorporated county areas. As a result, a less than significant impact would occur.

c) IMPACT: Less Than Significant Impact.

The project site is not located in an area that is classified as a moderate fire risk severity within a State Responsibility Area (SRA) and therefore will not require the installation of specialized infrastructure such as fire roads, fuel breaks, or emergency water sources. The Project would not result in installation or maintenance of infrastructure that may exacerbate fire risks, such as roads, emergency water sources, or utilities. Utility extensions would be limited to parcel-level improvements. Impacts would be less than significant.

d) IMPACT: Less Than Significant Impact.

The Project is not expected to increase exposure of people or structures to significant fire or fire-related risks, including downslope or downstream flooding or landslides, resulting from runoff, post-fire slope instability, or drainage changes. The City maintains a Local Hazard Mitigation Plan that addresses the planned response to extraordinary emergency situations, including natural and human-caused disasters. In addition, the City of Rancho Mirage participates in the Riverside County Multi-Jurisdictional Local Hazard Mitigation Plan. The Project would not impair the adopted emergency response plan. In conclusion, impacts would be less than significant.

20.3 Mitigation Measures: None required.

21 - Mandatory Findings of Significance

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

21.1 Discussion of Impacts:

a) IMPACT: Less than Significant with Mitigation Incorporated.

All impacts to the environment, including impacts to habitat for fish and wildlife species, fish and wildlife populations, plant and animal communities, rare and endangered plants and animals, and historical and pre-historical resources were evaluated as part of this IS/MND. Throughout this IS/MND, where impacts were determined to be potentially significant, mitigation measures have been imposed to reduce those impacts to less than significant. Accordingly, with incorporation of the mitigation measures imposed throughout this IS/MND, the Project would not substantially degrade the quality of the environment, substantially reduce

the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Impacts would be reduced to less than significant levels with mitigation incorporated.

b) IMPACT: No Impact.

The proposed project would not have impacts that are individually limited, but cumulatively considerable. The environmental impacts will not lead to a cumulatively significant impact on any of the issues analyzed herein.

c) Impact: Less than Significant.

The Project's potential to result in environmental effects that could adversely affect human beings, either directly or indirectly, has been discussed throughout this IS/MND. All Project environmental impacts would be less than significant. The Project would therefore not result in environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly.

21.2 Mitigation Measures:

Table 9 Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program			
Mitigation Measure	**Responsible Agency**	**Timing**	**Verification (Date and Initials)**
AESTHETICS			
No mitigation was required.			
AGRICULTURAL RESOURCES			
No mitigation was required.			
AIR QUALITY			
No mitigation was required.			
BIOLOGICAL RESOURCES			
BIO-1 Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with the California Department of Fish & Wildlife (CDFW) and United State Fish & Wildlife Service (USFWS) to	Project Proponent Project Biologist City of Rancho Mirage	Project Proponent shall provide the City with pre-construction surveys prior to the issuance of any permit to allow ground disturbance.	

conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities. **BIO-2** Nesting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Established buffers shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist shall have the authority to stop work if nesting pairs exhibit signs of disturbance.			
BIO-3 Prior to construction and issuance of any grading permit, the City of Rancho Mirage and project applicant shall ensure compliance with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and its associated Implementing Agreement, and the City shall ensure the collection of payment of the CVMSHCP Local Development Mitigation Fee.	Project Proponent City of Rancho Mirage Coachella Valley Conservation Commission	Prior to commencement of construction	
CULTURAL RESOURCES			
CR-1 Prior to the start of Project excavation, a qualified archaeologist shall be retained and create a Worker's Environmental Awareness Program (WEAP) pamphlet that will be prepared by the Project Archaeologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of cultural resources. This training class shall include examples of cultural resources to look	Project Proponent Project Archaeologist City of Rancho Mirage	Prior to commencement of construction and until construction is complete.	

for during project excavation and the protocols to follow if discoveries are made. **CR-2** Archaeological resources monitoring shall be conducted by a professional archaeological resources monitor during Project related earth-disturbing activities, per Office of Historic Preservation (OHP) standards, under the supervision of a qualified Project Archaeologist. Monitoring will entail visual inspection of Project related earth-disturbing activities in native soil. **CR-3** As requested by the Agua Caliente Band of Cahuilla Indians, an approved Native American monitor, with documented ancestral ties to the area consistent with the standards of the Native American Heritage Commission (NAHC), shall be present for all ground disturbing activities that involve excavation of previously undisturbed soil, until the archaeologist and Native American monitor deems that they are no longer in soil that may contain prehistoric and/or historic artifacts, sites, or features. Monitoring will entail visual inspection of all Project-related earth-disturbing activities. **CR-4** If an archaeological resource is encountered during excavation when a monitor is not on site, all excavation shall cease within at least 50 feet of the discovery and the Principal Investigator and Lead Archaeologist must be notified. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Archaeologist and indicates that excavation can resume. **CR-5** If an archaeological discovery cannot be preserved in situ and requires an excavation team or requires additional time to collect cultural resources, a Discovery and Treatment Plan (DTP) will be developed by the Lead Archaeologist, and the area will be cordoned off and secured so that an archaeological resources excavation team, led by the Principal Investigator and Lead Archaeologist, may recover the cultural resources out of that area. Once the Principal Investigator has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area. **CR-6** If human remains are encountered, work on			

the project will be suspended and the City of Rancho Mirage will be contacted immediately. The City of Rancho Mirage will contact the Riverside County coroner. If the remains are deemed Native American in origin, the coroner will contact the NAHC, which will identify a most likely descendant in compliance with Public Resources Code Section 5097.98 and California Code of Regulations Section 15064.5. The most likely descendant will have up to 48 hours to visit the site and make recommendations as to the treatment and final deposition of the remains. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded to the satisfaction of the lead agency. **CR-7** All significant cultural resources collected by the archaeologist will be prepared in a properly equipped laboratory to a point ready for curation. All significant artifacts collected will be prepared in a properly equipped archaeological laboratory to a point ready for curation. Artifacts will be identified, photographed, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage or to the appropriate Tribe. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent. **CR-8** At the conclusion of laboratory work but prior to museum curation, a final (negative or positive) findings report will be prepared describing the results of the cultural mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the cultural background within the project vicinity, a list of cultural resources recovered (if any), an analysis of cultural resources recovered (if any) and their scientific significance, and recommendations. A copy of the report will be prepared for the City of Rancho Mirage, the EIC, and be submitted to the designated museum repository (if applicable).			
GEOLOGY AND SOILS			
GEO-1 Prior to the commencement of grading or excavation activities, the Lead Paleontologist retained for the construction of Rancho Mirage 9 Lot Subdivision Project, shall create a Worker's Environmental Awareness Program (WEAP)	Project Proponent Project Engineer	Prior to commencement of construction and until construction is	

pamphlet that will be prepared and provided by the Project Paleontologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of paleontological resources. This training class shall include examples of paleontological resources to look for during project excavation and the protocols to follow if discoveries are made. **GEO-2** In the event that a paleontological resource is encountered when a monitor is not on site, all construction shall cease within at least 50 feet of the discovery and the Principal Investigator and/or Lead Paleontologist must be notified immediately. If the monitor is present at the time of discovery, then the monitor will have the authority to temporarily divert the construction equipment around the find and notify the Principal Investigator and/or Lead Paleontologist until it is assessed for scientific significance. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Paleontologist, and he/she indicates that construction can resume. **GEO-3** In the event that a paleontological resource is encountered, the Lead Paleontologist will implement the Paleontological Management Treatment Plan (PMTP) prepared for Rancho Mirage 9 Lot Subdivision Project. The purpose of the PMTP is to achieve compliance with the California Environmental Quality Act (CEQA), and local governmental agencies concerning the treatment of unexpected paleontological finds which are significant at the federal, state, and/or local level. Based on the sensitivity of the area, APRMI recommends the following monitoring mitigation measures that would comply with the Paleontological Management Treatment Plan and reduce the potential effects to any paleontological resource to a less than significant impact. **GEO-4** If a paleontological discovery requires an excavation team or requires additional time to collect specimens, or the size of the discovery is more than a monitor can collect during standard daily monitoring services, a Discovery and Treatment Plan (DTP) will be developed and the area will be cordoned off and secured so that a paleontological resources excavation team, led by the Principal Investigator and/or Lead Paleontologist, may recover	Project Paleontologist City of Rancho Mirage	complete.	

the fossilized specimens out of that area once the DTP has been approved. Once the Principal Investigator and/or Lead Paleontologist has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area. **GEO-5** Once construction activities are complete, all significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Laboratory preparation will include, but not be limited to, the careful removal of excess matrix from fossil remains, stabilizing and repairing specimens, identified to the lowest taxonomic level, analyzed, photographed, and catalogued before they are sent to the local repository for curation and permanent storage. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent. **GEO-6** At the conclusion of laboratory work and museum curation, a final report of findings will be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the geology and paleontology in the project vicinity, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to a designated museum repository.			
GREENHOUSE GAS EMISSIONS			
No mitigation was required.			
HAZARDS AND HAZARDOUS MATERIALS			
No mitigation was required.			
HYDROLOGY AND WATER QUALITY			
No mitigation was required.			
LAND USE AND PLANNING			
No mitigation was required.			
MINERAL RESOURCES			
No mitigation was required.			
NOISE			
No mitigation was required.			
POPULATION AND HOUSING			
No mitigation was required.			
PUBLIC SERVICES			
No mitigation was required.			

RECREATION			
No mitigation was required.			
TRANSPORTATION/TRAFFIC			
No mitigation was required.			
TRIBAL CULTURAL RESOURCES			
TCR-1 If buried cultural materials are discovered during the earth-moving operations, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds and, if necessary, develop a treatment pan in consultation with the City of Rancho Mirage and the appropriate Native American tribes. The presence of an archaeologist shall meet the Secretary of the Interior's standards during any ground disturbing activities. **TCR-2** During any ground disturbing activities (including any archaeological testing and surveys) the presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) shall be required. Should buried cultural deposits be encountered, the Monitor shall request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.	Project Proponent City of Rancho Mirage Project Archaeologist	Prior to commencement of construction and until construction is complete.	
UTILITIES AND SERVICE SYSTEMS			
No mitigation was required.			

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CHAPTER 4: APPENDICES

Appendix A Ganddini Group, Inc., TTM 38636 Air Quality, Global Climate Change, and Energy Impact Analysis, City of Rancho Mirage dated October 24, 2023.

Appendix B Natural Resources Assessment, Inc., General Biological Assessment Single-family Residential Subdivision Tentative Tract Map – TTM 23-0001 (TTM38636) Environmental Assessment – EA23-0003 APN 685-080-002 Rancho Mirage, California dated January 18, 2024.

Appendix C ArchaeoPaleo Resource Management, Inc., Phase I Archaeological and Paleontological Resources Assessment for the Rancho Mirage 9 Lot Subdivision Project, City of Rancho Mirage, Riverside County, California dated January 2024.

Appendix D Sampson and Associates, Preliminary Soils Evaluation (9) New Single-Family Residences on TTM No. 38636 in the City of Rancho Mirage, California dated March 03, 2023.

Appendix E Sampson and Associates, Infiltration Evaluation, New Single-Family Residences on TTM No. 38636 in the City of Rancho Mirage, California dated March 04, 2023.

Appendix F S.D. Engineering and Associates, Preliminary Hydrology Study and Hydraulics Report for Tentative Tract Map No. 38636 dated April 28, 2023.

Appendix G S.D. Engineering and Associates, Project Specific Water Quality Management Plan for Tentative Tract Map No. 38636 dated April 28, 2023.

Appendix H Ganddini Group, Inc., TTM 38636 Noise Impact Analysis, City of Rancho Mirage dated October 20, 2023.

Appendix I Tribal Consultation Letters, City of Rancho Mirage.

Appendix J Agency Comment Letters.

CHAPTER 5: REPORT PREPARERS

Lead Agency

Joy Tsai, Senior Planner
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, California 92270

Subconsultants

PGN
Patti Nahill, Principal

Subconsultants

Air Quality, Global Climate Change and Energy
Katie Wilson, MS – Ganddini Group, Inc.
Catherine Howe, MS – Ganddini Group, Inc.

Biological Resources
Karen Kirtland – Natural Resources Assessment, Inc.

Cultural Resources
Robin Turner, M.A. – ArchaeoPaleo Resource Management, Inc.

Drainage and Soils
M.E. Samiee, MS –- Sampson and Associates

Hydrology and Hydraulics
Suresh Doddiah, P.E. – S.D. Engineering and Associates

Noise
Roma Stromberg, INCE, MS – Ganddini Group, Inc.
Catherine Howe, MS – Ganddini Group, Inc.

Water Quality
Suresh Doddiah, P.E. – S.D. Engineering and Associates

Appendix A Air Quality, Global Climate Change, and Energy Impact Analysis, dated October 24, 2023

TTM 38636
AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Rancho Mirage

October 24, 2023

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

TTM 38636
AIR QUALITY, GLOBAL CLIMATE CHANGE, AND ENERGY IMPACT ANALYSIS

City of Rancho Mirage

October 24, 2023

prepared by
Katie Wilson, MS
Catherine Howe, MS



GANDDINI GROUP INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19669

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EXECUTIVE SUMMARY

The purpose of this air quality, global climate change, and energy impact analysis is to provide an assessment of the impacts resulting from development of the proposed TTM 38636 project and to identify measures that may be necessary to reduce potentially significant impacts.

Construction-Source Emissions

Project construction-source emissions would not exceed applicable regional thresholds of significance established by the South Coast Air Quality Management District (SCAQMD). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD.

Project construction-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). As discussed herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines. Project construction source emissions would not cause or substantively contribute to violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

Established requirements addressing construction equipment operations, and construction material use, storage, and disposal requirements act to minimize odor impacts that may result from construction activities. Moreover, construction-source odor emissions would be temporary, short-term, and intermittent in nature and would not result in persistent impacts that would affect substantial numbers of people. Potential construction-source odor impacts are therefore considered less than significant.

Operational-Source Emissions

Project operational-sourced emissions would not exceed applicable regional thresholds of significance established by the SCAQMD. Project operational-source emissions would not result in or cause a significant localized air quality or toxic air contaminant (TAC) impacts as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related trips will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO "hotspots). The project is residential use and will not be a significant source of TACs. Therefore, project operational-source emissions would not adversely affect sensitive receptors within the vicinity of the project.

Project operational-source emissions would not conflict with the Basin Air Quality Management Plan (AQMP). The project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact. The project does not propose any such uses or activities that would result in potentially significant operational-source odor impacts. Potential operational-source odor impacts are therefore considered less than significant.

Greenhouse Gases

Project-related greenhouse gas (GHG) emissions would not exceed the SCAQMD draft screening threshold of 3,000 $MTCO_2e$ per year for all land uses. Furthermore, the project would not conflict with the goals of the City of Rancho Mirage's Sustainability Plan and Energy Action Plan, AB-32, SB-32, or the CARB Scoping Plan; therefore, the project would not conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases and impacts are considered to be less than significant.

Energy

For new developments such as that proposed by the TTM 38636 project, compliance with California Building Standards Code Title 24 energy efficiency requirements (CALGreen), are considered demonstrable evidence

of efficient use of energy. As discussed below, the project would provide for, and promote, energy efficiencies required under other applicable federal and State of California standards and regulations, and in so doing would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other residential uses of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Impacts are considered to be less than significant.

1. INTRODUCTION

This section describes the purpose of this air quality, global climate change, and energy impact analysis, project location, proposed development, and study area. Figure 1 shows the project location map and Figure 2 illustrates the project site plan.

PURPOSE AND OBJECTIVES

This study was performed to address the possibility of regional/local air quality impacts and global climate change impacts, from project related air emissions. The objectives of the study include:

- documentation of the atmospheric setting
- discussion of criteria pollutants and greenhouse gases
- discussion of the air quality and global climate change regulatory framework
- discussion of the air quality and greenhouse gases thresholds of significance
- analysis of the construction related air quality and greenhouse gas emissions
- analysis of the operations related air quality and greenhouse gas emissions
- analysis of the conformity of the proposed project with the SCAQMD AQMP
- analysis of the project's energy use during construction and operation
- recommendations for mitigation/emissions reduction measures

The City of Rancho Mirage is the lead agency for this air quality, greenhouse gas, and energy analysis, in accordance with the California Environmental Quality Act authorizing legislation. Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with terms unique to air quality and global climate change, a definition of terms has been provided in Appendix A.

PROJECT LOCATION

The 5.04-acre project site is located at the northeast corner of the intersection of Landy Lane and Ginger Rogers Drive in the City of Rancho Mirage, California. The project site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves development of a single-family residential subdivision consisting of nine (9) lots. Figure 2 illustrates the proposed site plan.

PHASING AND TIMING

The project is anticipated to be built in one phase with project construction anticipated to start no sooner than January 2025. However, the duration of construction is unknown at this time. Therefore, CalEEMod default construction timing was utilized in this analysis. Based on CalEEMod defaults, with a start date of January 2025 the project is anticipated to be completed early February 2026 and be operational in 2026. The construction schedule utilized in the analysis represents a "worst-case" analysis scenario even if construction was to occur any time after the respective dates since emission factors for construction decrease as time passes and the analysis year increases due to emission regulations becoming more stringent.[1]

[1] As shown in the California Emissions Estimator Model (CalEEMod) User's Guide Version 2020.4.0, Section 4.3.2 "OFFROAD Equipment" as the analysis year increases, emission factors for the same equipment pieces decrease due to the natural turnover of older equipment being replaced by newer less polluting equipment and new regulatory requirements.

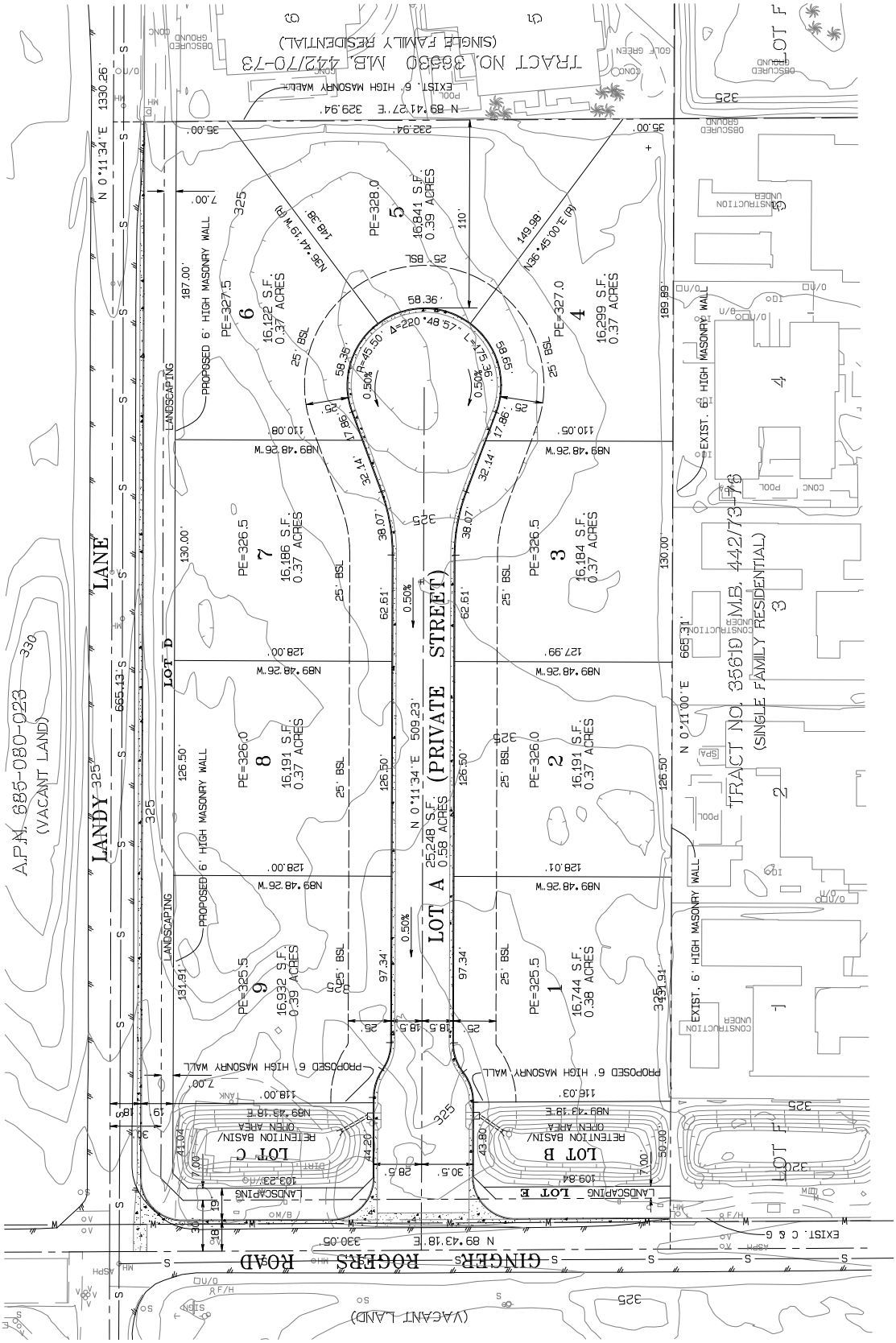
Sensitive Receptors in Project Vicinity

Those who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. For purposes of CEQA, the SCAQMD considers a sensitive receptor to be a location where a sensitive individual could remain for 24 hours, such as residences, hospitals, or convalescent facilities (South Coast Air Quality Management District 2008). Commercial and industrial facilities are not included in the definition because employees do not typically remain on-site for 24 hours.

The nearest sensitive receptors to the boundaries of the focus area of the project site are the existing single-family residential uses located adjacent to the north and east of the project site and approximately 566 feet (~172 meters) to the southwest, 590 feet (~180 meters) to the west, 1,340 feet (~408 meters) to the south, and 1,296 feet (~395 meters) to the southeast of the project site. Other air quality sensitive land uses are located further from the project site and would experience lower impacts.



Figure 1
Project Location Map


LOT A
25,248 S.F.
0.58 ACRES
(PRIVATE STREET)
LANDY LANE
GINGER ROGERS ROAD
TRACT NO. 36590 M.B. 442/70-73
(SINGLE FAMILY RESIDENTIAL)
APN 685-080-023
(VACANT LAND)
PROPOSED 6' HIGH MASONRY WALL
LANDSCAPING
EXIST. 6' HIGH MASONRY WALL
RETENTION BASIN/ OPEN AREA
LOT B
LOT C
LOT D
LOT E
LOT F
N 0°11'34" E 1330.26'
N 89°41'27" E 329.94'
N 89°43'18" E 330.05'
N 0°11'00" E 665.31'
N 0°11'34" E 509.23'
N 89°48'26" W
N 89°43'18" E
1 16,191 S.F. 0.37 ACRES PE=325.5
2 16,191 S.F. 0.37 ACRES PE=326.0
3 16,184 S.F. 0.37 ACRES PE=326.5
4 16,299 S.F. 0.37 ACRES PE=327.0
5 16,841 S.F. 0.39 ACRES PE=328.0
6 16,122 S.F. 0.37 ACRES PE=327.5
7 16,186 S.F. 0.37 ACRES PE=326.5
8 16,191 S.F. 0.37 ACRES PE=326.0
9 16,932 S.F. 0.39 ACRES PE=325.5
15,744 S.F. 0.38 ACRES
25' BSL
0.50%
R=45.50'
Δ=220°48'57"
L=175.36'
N36°45'00"E (R)
N36°44'19"W (R)
149.98'
148.38'
110'
58.36'
58.35'
58.65'
32.14'
38.07'
62.61'
97.34'
131.91'
126.50'
128.00'
130.00'
110.08'
110.05'
189.89'
187.00'
232.94'
35.00'
7.00'
665.13'
330'
325'
(VACANT LAND)
SINGLE FAMILY RESIDENTIAL
CONSTRUCTION UNDER
POOL
SPA
OPEN AREA
RETENTION BASIN
LANDSCAPING
PROPOSED 6' HIGH MASONRY WALL
EXIST. C & G
EXIST. 6' HIGH MASONRY WALL
GOLF GREEN
OBSCURED GROUND
CONC
TANK
SIGN
ASPH
B/W
R/F
G/W
M
S
W
SS
MH
T/C
T/W
G/P
G/V
A/C
A/V
T/P
T/V
S/V
S/P
S/W
I/C
I/V
I/P
I/W
G/W
B/W
R/F
H/R

2. AIR QUALITY ANALYSIS

EXISTING AIR QUALITY CONDITIONS

Local Air Quality

The project is located within the City of Rancho Mirage and is within the Salton Sea Air Basin (SSAB). The middle part of Riverside County (between San Gorgonio Pass and Joshua Tree National Monument), belongs in the Salton Sea Air Basin (SSAB), along with Imperial County. Air quality conditions in this portion of the County, although in the SSAB, are also administered by the SCAQMD. The SCAQMD is responsible for the development of the regional Air Quality Management Plan and efforts to regulate pollutant emissions from a variety of sources.

The SSAB portion of Riverside County is separated from the South Coast Air Basin region by the San Jacinto Mountains and from the Mojave Desert Air Basin to the east by the Little San Bernardino Mountains. During the summer, the SSAB is generally influenced by a Pacific Subtropical High Cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. The SSAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The SSAB averages between three and seven inches of precipitation per year.

The Coachella Valley is a geographically and meteorologically unique area wholly contained within the Salton Sea Air Basin. The region is currently impacted by significant air pollution levels caused by the transport of pollutants from coastal air basins to the west, primarily ozone, and locally generated PM10. The mountains surrounding the region isolate the Valley from coastal influences and create a hot and dry low-lying desert (see Table 1). As the desert heats up, it draws cooler coastal air through the narrow San Gorgonio Pass, generating strong and sustained winds that cross the fluvial (water caused) and aeolian (wind) erosion zones in the Valley. These strong winds suspend and transport large quantities of sand and dust, reducing visibility, damaging property, and constituting a significant health threat.

The SSAB portion of Riverside County, in relation to other areas in Southern California, has good air quality. In the past few decades, however, noticeable deterioration of air quality has occurred due to increased development and population growth, traffic, construction activity, and various site disturbances. It is apparent that although air pollution is emitted from various sources in the Coachella Valley, substantial degradation of air quality may be attributed primarily to sources outside of the Valley.

Table 1
Local Monthly Climate Data

Descriptor	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	70.6	74	80.6	87.7	95.6	103.4	108	107	101.5	91.1	76	69.8
Avg. Min. Temperature	45.3	48	52.3	57.5	64.4	71	77.3	77.4	71.5	62.4	50.3	44.8
Avg. Total Precipitation (in.)	1.17	1.04	0.52	0.08	0.02	0.03	0.13	0.29	0.21	0.26	0.32	0.92

Notes:
(1) Source: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6635
Data taken from the Palm Springs, CA station (046635).

Pollutants

Pollutants are generally classified as either criteria pollutants or non-criteria pollutants. Federal ambient air quality standards have been established for criteria pollutants, whereas no ambient standards have been established for non-criteria pollutants. For some criteria pollutants, separate standards have been set for different periods. Most standards have been set to protect public health. For some pollutants, standards have been based on other values (such as protection of crops, protection of materials, or avoidance of nuisance conditions). A summary of federal and state ambient air quality standards is provided in the Regulatory Framework section.

Criteria Pollutants

The criteria pollutants consist of: ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. The Environmental Protection Agency (EPA) calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria for setting permissible levels. The following provides descriptions of each of the criteria pollutants.

Nitrogen Dioxides

Nitrogen Oxides (NOx) is the generic term for a group of highly reactive gases which contain nitrogen and oxygen. While most NOx are colorless and odorless, concentrations of nitrogen dioxide (NO_2) can often be seen as a reddish-brown layer over many urban areas. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuel. NOx reacts with other pollutants to form, ground-level ozone, nitrate particles, acid aerosols, as well as NO_2, which cause respiratory problems. NOx and the pollutants formed from NOx can be transported over long distances, following the patterns of prevailing winds. Therefore, controlling NOx is often most effective if done from a regional perspective, rather than focusing on the nearest sources.

Ozone

Ozone (O_3) is not usually emitted directly into the air but at ground-level is created by a chemical reaction between NOx and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents as well as natural sources emit NOx and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form with the greatest concentrations usually occurring downwind from urban areas. Ozone is subsequently considered a regional pollutant. Ground-level ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Because NOx and VOC are ozone precursors, the health effects associated with ozone are also indirect health effects associated with significant levels of NOx and VOC emissions.

Carbon Monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are indoor sources of CO. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air. CO is described as having only a local influence because it dissipates quickly. Since CO concentrations are strongly associated with motor vehicle emissions, high CO concentrations generally occur in the immediate vicinity of roadways with high

traffic volumes and traffic congestion, active parking lots, and in automobile tunnels. Areas adjacent to heavily traveled and congested intersections are particularly susceptible to high CO concentrations.

CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream. The health threat from lower levels of CO is most serious for those who suffer from heart disease such as angina, clogged arteries, or congestive heart failure. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects. High levels of CO can affect even healthy people. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.

Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide [SO2]) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolve easily in water vapor to form acid and interacts with other gases and particles in the air to form sulfates and other products that can be harmful to people and the environment.

Lead

Lead (Pb) is a metal found naturally in the environment as well as manufactured products. The major sources of lead emissions have historically been motor vehicles and industrial sources. Due to the phase out of leaded gasoline, metal processing is now the primary source of lead emissions to the air. High levels of lead in the air are typically only found near lead smelters, waste incinerators, utilities, and lead-acid battery manufacturers. Exposure of fetuses, infants and children to low levels of lead can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. In adults, increased lead levels are associated with increased blood pressure.

Particulate Matter

Particulate matter (PM) is the term for a mixture of solid particles and liquid droplets found in the air. Particulate matter is made up of a number of components including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health problems. Particles that are less than 10 micrometers in diameter (PM10) are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Particles that are less than 2.5 micrometers in diameter (PM2.5) have been designated as a subset of PM10 due to their increased negative health impacts and its ability to remain suspended in the air longer and travel further.

Reactive Organic Gases (ROG)

Although not a criteria pollutant, reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably. Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM10 and lower visibility.

Other Pollutants of Concern

Toxic Air Contaminants

In addition to the above-listed criteria pollutants, toxic air contaminants (TACs) are another group of pollutants of concern. Sources of toxic air contaminants include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Cars and trucks release at least forty different toxic air contaminants. The most important of these toxic air contaminants, in terms of health risk, are diesel particulates, benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Public exposure to toxic air contaminants can result from emissions from normal operations as well as from accidental releases. Health effects of toxic air contaminants include cancer, birth defects, neurological damage, and death.

Toxic air contaminants are less pervasive in the urban atmosphere than criteria air pollutants, however they are linked to short-term (acute) or long-term (chronic or carcinogenic) adverse human health effects. There are hundreds of different types of toxic air contaminants with varying degrees of toxicity. Sources of toxic air contaminants include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), and motor vehicle exhaust.

According to the 2013 California Almanac of Emissions and Air Quality, the majority of the estimated health risk from toxic air contaminants can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM). Diesel particulate matter is a subset of PM2.5 because the size of diesel particles are typically 2.5 microns and smaller. The identification of diesel particulate matter as a toxic air contaminant in 1998 led the California Air Resources Board (CARB) to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles in September 2000. The plan's goals are a 75-percent reduction in diesel particulate matter by 2010 and an 85-percent reduction by 2020 from the 2000 baseline. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The visible emissions in diesel exhaust are known as particulate matter or PM, which includes carbon particles or "soot". Diesel exhaust also contains a variety of harmful gases and over 40 other cancer-causing substances. California's identification of diesel particulate matter as a toxic air contaminant was based on its potential to cause cancer, premature deaths, and other health problems. Exposure to diesel particulate matter is a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Overall, diesel engine emissions are responsible for the majority of California's potential airborne cancer risk from combustion sources.

Asbestos

Asbestos is listed as a TAC by the ARB and as a Hazardous Air Pollutant by the EPA. Asbestos occurs naturally in mineral formations and crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma. Naturally occurring asbestos is not present in Riverside County. The nearest likely locations of naturally occurring asbestos, as identified in the General Location Guide for Ultramafic Rocks in California prepared by the California Division of Mines and Geology, is located at Asbestos Mountain in the San Jacinto Valley; approximately 12 miles southwest of the site. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

REGULATORY SETTING

The proposed project is addressed through the efforts of various international, federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through

legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality are discussed below.

Federal – United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is responsible for setting and enforcing the National Ambient Air Quality Standards (NAAQS) for atmospheric pollutants. It regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The National Ambient Air Quality Standards (NAAQS) pollutants were identified using medical evidence and are shown below in Table 2.

The EPA and the CARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

As part of its enforcement responsibilities, the EPA requires each state with federal nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the national standards. The State Implementation Plan (SIP) must integrate federal, state, and local components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the State Implementation Plan (SIP).

As indicated below in Table 3, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), suspended particulate matter (PM-2.5), and nitrogen dioxide (NO_2).

State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, the CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the State Implementation Plan (SIP). The California Ambient Air Quality Standards (CAAQS) for criteria pollutants are shown in Table 3. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. Furthermore, the motor vehicle emission standards established by CARB include compliance with the Safer Affordable Fuel-Efficient Vehicles (SAFE) Rule, issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020). The SAFE Rule sets fuel economy and carbon dioxide standards that increase 1.5 percent in stringency each year from model years 2021 through 2026 and apply to both passenger cars and light trucks. CARB also sets fuel specifications to further reduce vehicular emissions.

The Salton Sea Air Basin has been designated by the CARB as a nonattainment area for ozone and PM-10. Currently, the Salton Sea Air Basin is in attainment with the ambient air quality standards for CO, lead, SO_2, NO_2, and sulfates and is unclassified for visibility reducing particles (PM-2.5) and Hydrogen Sulfide.

On June 20, 2002, the CARB revised the PM10 annual average standard to 20 µg/m3 and established an annual average standard for PM2.5 of 12 µg/m^3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 the CARB approved the South Coast Air Basin and the Coachella Valley 2007 Air Quality Management Plan for Attaining the Federal 8-hour Ozone and PM2.5 Standards. The plan projects attainment for the 8-hour Ozone standard by 2024 and the PM2.5 standard by 2015.

On December 12, 2008 the CARB adopted Resolution 08-43, which limits NOx, PM10 and PM2.5 emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order R-09-010 was adopted that codified Resolution 08-43 into Section 2025, Title 13 of the California Code of Regulations. This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year 3-day pass for trucks registered outside of California.

The CARB is also responsible for regulations pertaining to toxic air contaminants. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 as a means to establish a formal air toxics emission inventory risk quantification program. AB 2588, as amended, establishes a process that requires stationary sources to report the type and quantities of certain substances their facilities routinely release into the South Coast Air Basin. The data is ranked by high, intermediate, and low categories, which are determined by: the potency, toxicity, quantity, volume, and proximity of the facility to nearby receptors.

AB 617 Nonvehicular air pollution: criteria air pollutants and toxic air contaminants

This bill requires the CARB to develop a uniform statewide system of annual reporting of emissions of criteria air pollutants and toxic air contaminants for use by certain categories of stationary sources. The bill requires those stationary sources to report their annual emissions of criteria air pollutants and toxic air contaminants, as specified. This bill required the CARB, by October 1, 2018, to prepare a monitoring plan regarding technologies for monitoring criteria air pollutants and toxic air contaminants and the need for and benefits of additional community air monitoring systems, as defined. The bill requires the CARB to select, based on the monitoring plan, the highest priority locations in the state for the deployment of community air monitoring systems. The bill requires an air district containing a selected location, by July 1, 2019, to deploy a system in the selected location. The bill would authorize the air district to require a stationary source that emits air pollutants in, or that materially affect, the selected location to deploy a fence-line monitoring system, as defined, or other specified real-time, on-site monitoring. The bill authorizes the CARB, by January 1, 2020, and annually thereafter, to select additional locations for the deployment of the systems. The bill would require air districts that have deployed a system to provide to the state board air quality data produced by the system. By increasing the duties of air districts, this bill would impose a state-mandated local program. The bill requires the CARB to publish the data on its Internet Web site.

Regional

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the Salton Sea Air Basin. To that end, as a regional agency, the SCAQMD works directly with the Southern California Association of Governments (SCAG), county transportation commissions, and local governments and cooperates actively with all federal and state agencies.

South Coast Air Quality Management District

The SCAQMD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. The SCAQMD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. It has responded to this requirement by preparing a sequence of AQMPs.

Air Quality Management Plan

On June 30, 2016, the SCAQMD released its Draft 2016 AQMP. The 2016 AQMP is a regional blueprint for achieving the federal air quality standards and healthful air. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the Plan is not approved or if the NAAQS are not met on time. As with every AQMP, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is updated with the latest data and methods. The most significant air quality challenge in the Basin is to reduce nitrogen oxide (NOx) emissions sufficiently to meet the upcoming ozone standard deadlines. On March 23, 2017 the CARB approved the 2016 AQMP. The primary goal of this Air Quality Management Plan is to meet clean air standards and protect public health, including ensuring benefits to environmental justice and disadvantaged communities. Now that the Plan has been approved by the CARB, it has been forwarded to the U.S. EPA for its review. The Plan was approved by the EPA on June 15, 2017.

On June 21, 2002, the SCAQMD adopted the 2002 Coachella Valley PM10 State Implementation Plan (CVSIP). The 2002 CVSIP, which included a request for extension of the PM10 deadline and met all applicable federal Clean Air Act requirements, including a Most Stringent Measures analysis, control measures, and attainment demonstration. U.S. EPA approved the 2002 CVSIP on April 18, 2003. At the time of adoption, the AQMD committed to revising with the 2002 CVSIP with the latest approved mobile source emissions estimates, planning assumptions and fugitive dust source emission estimates, when they became available.

The 2003 CVSIP updates those elements of the 2002 CVSIP; the control strategies and control measure commitments have not been revised and remain the same as in the 2002 CVSIP. The 2003 CVSIP contains updated emissions inventories, emission budgets, and attainment modeling. It requests that U.S. EPA replace the approved transportation conformity budgets in the 2002 CVSIP with those in the 2003 CVSIP. U.S. EPA approved these budgets on March 25, 2004 with an effective date of April 9, 2004.

In May 2022, the SCAQMD completed the 2022 Draft AQMP. The 2022 Draft AQMP is focused on attaining the 2015 8-hour ozone standard (70 ppb) for the South Coast Air Basin and Coachella Valley. The Draft 2022 AQMP builds upon measures already in place from previous AQMPs. It also includes a variety of additional strategies such as regulation, accelerated deployment of available cleaner technologies (e.g., zero emission technologies, when cost-effective and feasible, and low NOx technologies in other applications), best management practices, co-benefits from existing programs (e.g., climate and energy efficiency), incentives, and other CAA measures to achieve the 2015 8-hour ozone standard. The 2022 AQMP was adopted December 2, 2022, by SCAQMD Governing Board. The 2022 AQMP was approved and adopted by CARB on January 26, 2023. The 2022 AQMP strategy includes the following:[2]

- Wide adoption of zero emissions technologies anywhere available.
- Low NOx technologies where zero emissions aren't feasible.
- Federal Action.
- Zero emissions technologies for residential and industrial sources such as water and space heaters in buildings and homes regionwide.
- Incentive funding in environmental justice areas.
- Prioritize benefits on the most disadvantaged communities.

SCAQMD Rules and Regulations

During construction and operation, the project must comply with applicable rules and regulations. The following are rules that the project may be required to comply with, either directly, or indirectly:

[2] SCAQMD 2022 AQMP Infographic. http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/2022-aqmp-infographic

SCAQMD Rule 402

Prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403

Governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 403 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off-site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors. Rule 403 measures may include but are not limited to the following:

- Apply nontoxic chemical soil stabilizers according to manufacturers' specifications to all inactive construction areas (previously graded areas inactive for 10 days or more).
- Water active sites at least three times daily. (Locations where grading is to occur will be thoroughly watered prior to earthmoving.)
- Cover all trucks hauling dirt, sand, soil, or other loose materials, or maintain at least 0.6 meters (2 feet) of freeboard (vertical space between the top of the load and top of the trailer) in accordance with the requirements of California Vehicle Code section 23114.
- Reduce traffic speeds on all unpaved roads to 15 miles per hour (mph) or less.
- Suspension of all grading activities when wind speeds (including instantaneous wind gusts) exceed 25 mph.
- Bumper strips or similar best management practices shall be provided where vehicles enter and exit the construction site onto paved roads or wash off trucks and any equipment leaving the site each trip.
- Replanting disturbed areas as soon as practical.
- During all construction activities, construction contractors shall sweep on-site and off-site streets if silt is carried to adjacent public thoroughfares, to reduce the amount of particulate matter on public streets. All sweepers shall be compliant with SCAQMD Rule 1186.1, Less Polluting Sweepers.

SCAQMD Rule 403.1 is supplemental to Rule 403 requirements and shall apply only to fugitive dust sources in the Coachella Valley.

(d) General Requirements of 403.1

(1) Any person who is responsible for any active operation, open storage pile, or disturbed surface area, and who seeks an exemption pursuant to Rule 403, paragraph (g)(2) shall be required to determine when wind speed conditions exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(2) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new man-made deposits of bulk material within 24 hours of making such bulk material deposits. Stabilization procedures shall include one or more of the following: (A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there

is evidence of wind driven fugitive dust; or (B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least 6 months; or

(3) Installation of wind breaks of such design so as to reduce maximum wind gusts to less than 25 miles per hour in the area of the bulk material deposits. (3) Any person involved in active operations in the Coachella Valley Blowsand Zone shall stabilize new deposits of bulk material originating from off-site undisturbed natural desert areas within 72 hours.

Stabilization procedures shall include one or more of the following: (A) Application of water to at least 70 percent of the surface area of any bulk material deposits at least 3 times for each day that there is evidence of wind driven fugitive dust; or (B) Application of chemical stabilizers in sufficient concentration so as to maintain a stabilized surface for a period of at least six months.

(4) A person who conducts or authorizes the conducting of an active operation shall implement at least one of the control actions specified in Rule 403, Table 2 for the source category "Inactive Disturbed Surface Areas" to minimize wind driven fugitive dust from disturbed surface areas at such time when active operations have ceased for a period of at least 20 days.

(5) Any person involved in agricultural tilling or soil mulching activities shall cease such activities when wind speeds exceed 25 miles per hour. The wind speed determination shall be based on either District forecasts or through use of an on-site anemometer as described in subdivision (g).

(e) Fugitive Dust Control Plan and Other Requirements for Construction Projects/Earth-Moving Activities

(1) Any person who conducts or authorizes the conducting of an active operation with a disturbed surface area of more than 5,000 square feet shall not initiate any earth-moving activities unless a fugitive dust control plan is prepared and approved by the Executive Officer in accordance with the requirements of subdivision (f) and the Rule 403.1 Implementation Handbook. These provisions shall not apply to active operations exempted by paragraph (i)(4).

(2) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall maintain a complete copy of the approved fugitive dust control plan on-site in a conspicuous place at all times and the fugitive dust control plan must be provided upon request.

(3) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) shall install and maintain signage with project contact information that meets the minimum standards of the Rule 403.1 Implementation Handbook prior to initiating any type of earth-moving activities.

(4) Any operator required to submit a fugitive dust control plan under paragraph (e)(1) for a project with a disturbed surface area of 50 or more acres shall have an Dust Control Supervisor that: (A) is employed by or contracted with the property owner or developer; and (B) is on-site or is available to be on-site within 30 minutes of initial contact; and (C) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 and 403.1 requirements; and (D) has completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class.

(5) Failure to comply with any of the provisions of an approved fugitive dust control plan shall be a violation of this rule.

SCAQMD Rule 445

Prohibits permanently installed wood burning devices into any new development. A wood burning device means any fireplace, wood burning heater, or pellet-fueled wood heater, or any similarly enclosed, permanently installed, indoor or outdoor device burning any solid fuel for aesthetic or space-heating purposes, which has a heat input of less than one million British thermal units per hour.

SCAQMD Rule 481

Applies to all spray painting and spray coating operations and equipment. The rule states that a person shall not use or operate any spray painting or spray coating equipment unless one of the following conditions is met:

(1) The spray coating equipment is operated inside a control enclosure, which is approved by the Executive Officer. Any control enclosure for which an application for permit for new construction, alteration, or change of ownership or location is submitted after the date of adoption of this rule shall be exhausted only through filters at a design face velocity not less than 100 feet per minute nor greater than 300 feet per minute, or through a water wash system designed to be equally effective for the purpose of air pollution control.
(2) Coatings are applied with high-volume low-pressure, electrostatic and/or airless spray equipment.
(3) An alternative method of coating application or control is used which has effectiveness equal to or greater than the equipment specified in the rule.

SCAQMD Rule 1108

Governs the sale, use, and manufacturing of asphalt and limits the volatile organic compound (VOC) content in asphalt used in the Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1113

Governs the sale, use, and manufacturing of architectural coating and limits the VOC content in paints and paint solvents. This rule regulates the VOC content of paints available during construction. Therefore, all paints and solvents used during construction and operation of the project must comply with SCAQMD Rule 1113.

SCAQMD Rule 1143

Governs the manufacture, sale, and use of paint thinners and solvents used in thinning of coating materials, cleaning of coating application equipment, and other solvent cleaning operations by limiting their VOC content. This rule regulates the VOC content of solvents used during construction. Solvents used during the construction phase must comply with this rule.

SCAQMD Rule 1186

Limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

SCAQMD Rule 1303

Governs the permitting of re-located or new major emission sources, requiring Best Available Control Measures and setting significance limits for PM_{10} among other pollutants.

SCAQMD Rule 1401

New Source Review of Toxic Air Contaminants, specifies limits for maximum individual cancer risk, cancer burden, and non-cancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units, which emit toxic air contaminants.

SCAQMD Rule 1403

Asbestos Emissions from Demolition/Renovation Activities, specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM).

SCAQMD Rule 2202

On-Road Motor Vehicle Mitigation Options, is to provide employers with a menu of options to reduce mobile source emissions generated from employee commutes, to comply with federal and state Clean Air Act requirements, Health & Safety Code Section 40458, and Section 182(d)(1)(B) of the federal Clean Air Act. It applies to any employer who employs 250 or more employees on a full or part-time basis at a worksite for a consecutive six-month period calculated as a monthly average.

SCAQMD Rule 2305

The Warehouse Actions and Investments to Reduce Emissions (WAIRE) Program aims to reduce nitrogen oxide and diesel emissions associated with warehouses, help meet federal standards and improve public health. The WAIRE Program is an indirect source rule that regulates warehouse facilities to reduce emissions from the goods movement industry. Owners and operators of warehouses that have 100,000 square feet or more of indoor floor space in a single building must comply with the WAIRE Program. WAIRE is a menu-based point system in which warehouse operators are required to earn a specific number of points every year. The yearly number of points required is based on the number of trucks trips made to and from the warehouse each year, with larger trucks such as tractors or tractor-trailers multiplied by 2.5. Warehouse operators may be exempt from parts of the rule if they operate less than 50,000 square feet of warehousing activities, if the number of points required is less than 10, or if the WAIRE menu action chosen under performs due to circumstances beyond the operator's control, such as a manufacturer defect. SCAQMD Rule 316 establishes fees to fund Rule 2305 compliance activities.

Air Quality Guidance Documents

SCAQMD CEQA Handbook

Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate air quality issues associated with plans and new development projects throughout the Salton Sea portion of the South Coast Air Basin. Instead, this is controlled through local jurisdictions in accordance with the California Environmental Quality Act (CEQA). In order to assist local jurisdictions with air quality compliance issues the CEQA Air Quality Handbook (SCAQMD CEQA Handbook) prepared by the SCAQMD (1993) with the most current updates found at http://www.aqmd.gov/ceqa/hdbk.html, was developed in accordance with the projections and programs of the AQMP. The purpose of the SCAQMD CEQA Handbook is to assist Lead Agencies, as well as consultants, project proponents, and other interested parties in evaluating a proposed project's potential air quality impacts. Specifically, the SCAQMD CEQA Handbook explains the procedures that the SCAQMD recommends be followed for the environmental review process required by CEQA. The SCAQMD CEQA Handbook provides direction on how to evaluate potential air quality impacts, how to determine whether these impacts are significant, and how to mitigate these impacts. SCAQMD is in the process of developing an "Air Quality Analysis Guidance Handbook" to replace the CEQA Air Quality Handbook approved by the AQMD Governing Board in 1993. The 1993 CEQA Air Quality Handbook is still available but not online. In addition, there are sections of the 1993 Handbook that are obsolete. In order to assist the CEQA practitioner in conducting an air quality analysis while the new Handbook is being prepared, supplemental information regarding significance thresholds and analysis, emissions factors, cumulative impacts emissions analysis, and other useful subjects, are available at the SCAQMD website[3]. The SCAQMD CEQA Handbook and supplemental information is used in this analysis.

[3] http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

Southern California Association of Governments

The SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the Federally designated MPO for the majority of the southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Transportation Plan and Regional Transportation Improvement Plan (RTIP), which addresses regional development and growth forecasts. These plans form the basis for the land use and transportation components of the AQMP, which are utilized in the preparation of air quality forecasts and in the consistency analysis included in the AQMP. The Regional Transportation Plan, Regional Transportation Improvement Plan, and AQMP are based on projections originating within the City and County General Plans.

On April 7, 2016, SCAG's Regional Council adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS or Plan). The Plan is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Plan charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It outlines more than $556.5 billion in transportation system investments through 2040. The Plan was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 FTIP Consistency Amendment through Amendment 15-12 have been met.

On September 3, 2020, SCAG's Regional Council unanimously voted to approve and fully adopt Connect SoCal (2020–2045 Regional Transportation Plan/Sustainable Communities Strategy), and the addendum to the Connect SoCal Program Environmental Impact Report. Connect SoCal is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal outlines more than $638 billion in transportation system investments through 2045. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.

Coachella Valley Model Dust Control Ordinance (see also SCAQMD Rule 403.1)

The Coachella Valley Dust Control Ordinance was designed to establish minimum requirements for construction and demolition activities and other specified sources in order to reduce man-made fugitive dust and the corresponding PM10 emissions. The Ordinance establishes following rules associated with reducing the fugitive dust emissions associated with the project:

Section 400 Control Requirements

<u>410. Work Practices – All Fugitive Dust Sources</u>

1. No operator shall conduct any potential dust-generating activity on a site unless the operator utilizes one or more Coachella Valley Best Available Control Measures, as identified in the Coachella Valley Fugitive Dust Control Handbook for each fugitive dust source such that the applicable performance standards are met.

2. Any operator involved in any potential dust-generating activity on a site with a disturbed surface area greater than one acre shall, at a minimum, operate a water application system as identified in the Coachella Valley Fugitive Dust Control Handbook, if watering is the selected control measure.

Performance Standards and Test Methods

3. No person subject to the requirements contained in Section 410.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

420. Construction and Demolition Activities

1. Any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City (County).

2. A complete copy of the approved Fugitive Dust Control Plan must be kept on-site in a conspicuous place at all times and provided to the City (County) and AQMD upon request.

4. Any operator involved in earth-moving operations shall implement at least one of the following short-term stabilization methods during non-working hours:

   A. maintaining soils in a damp condition as determined by sight or touch; or
   B. establishment of a stabilized surface through watering; or
   C. application of a chemical dust suppressant in sufficient quantities and concentrations to maintain a stabilized surface.

5. Within 10 days of ceasing activity, an operator shall implement at least one of the following long-term stabilization techniques for any disturbed surface area where construction activities are not scheduled to occur for at least 30 days:

   A. revegetation that results in 75 percent ground coverage provided that an active watering system is in place at all times; or
   B. establishment of a stabilized surface through watering with physical access restriction surrounding the area; or
   C. use of chemical stabilizers to establish a stabilized surface with physical access restriction surrounding the area.

6. Any operator shall remove all bulk material track-out from any site access point onto any paved road open to through traffic:

   A. within one hour if such material extends for a cumulative distance of greater than 25 feet from any site access point; and
   B. at the conclusion of each workday.

7. Any operator of a project with a disturbed surface area of five or more acres or of any project that involves the import or export of at least 100 cubic yards of bulk material per day shall install and maintain at least one of the following control measures at the intersection of each site entrance and any paved road open to through traffic with all vehicles exiting the site routed over the selected device(s):

   A. pad consisting of minimum one-inch washed gravel maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long; or
   B. paved surface extending at least 100 feet and at least 20 feet wide; or

C. wheel shaker / wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least three inches tall and at least six inches apart and 20 feet long; or

8. Any operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall install and maintain project contact signage that meets the minimum standards of the Coachella Valley Fugitive Dust Control Handbook, including a 24-hour manned toll-free or local phone number, prior to initiating any type of earth-moving operations.

9. Any operator of a project with a disturbed surface area of 50 or more acres shall have an Environmental Observer on the site or available on-site within 30 minutes of initial contact that:

A. is hired by the property owner or developer; and
B. has dust control as the sole or primary responsibility; and
C. has successfully completed the AQMD Coachella Valley Fugitive Dust Control Class and has been issued a Certificate of Completion for the class; and
D. is identified in the approved Fugitive Dust Control Plan as having the authority to immediately employ sufficient dust mitigation 24-hours per day, seven days a week and to ensure compliance with this ordinance, the approved Fugitive Dust Control Plan, and AQMD regulations.

Performance Standards and Test Methods

10. No operator required to submit a Fugitive Dust Control Plan under Section 420.1 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from the origin of a source, or cross any property line.

11. Exceedance of the visible emissions prohibition in Section 420.10 occurring due to a high-wind episode shall constitute a violation of Section 420.10, unless the operator demonstrates to City (County) all the following conditions:

A. all Fugitive Dust Control Plan measures or applicable Coachella Valley Best Available Control Measures were implemented and maintained on-site; and
B. the exceedance could not have been prevented by better application, implementation, operation, or maintenance of control measures; and
C. appropriate recordkeeping was compiled and retained in accordance with the requirements in Section 420.12 through 420.15; and
D. documentation of the high-wind episode on the day(s) in question is provided by appropriate records.

Reporting / Recordkeeping

Before Construction

12. The operator of a project with ten acres or more of earth-moving operations shall:

A. forward two copies of a Site-Specific, Stand Alone [8½ by 11 inch] Fugitive Dust Control Plan to the AQMD within ten days after approval by the City (County). [Note: A separate AQMD approval will not be issued]; and
B. notify the City (County) and the AQMD at least 24-hours prior to initiating earth-moving operations.

During Construction

13. Any operator involved in earth-moving operations shall compile, and maintain for a period of not less than three years, daily self-inspection recordkeeping forms in accordance with the guidelines contained in the Coachella Valley Fugitive Dust Control Handbook.

14. Any operator involved in earth-moving operations that utilizes chemical dust suppressants for dust control on a site shall compile records indicating the type of product applied, vendor name, and the method, frequency, concentration, quantity and date(s) of application and shall retain such records for a period of not less than three years.

After Construction

15. Any operator subject to the provisions of Section 420.12 shall notify the City (County) and the AQMD within ten days of the establishment of the finish grade or at the conclusion of the finished grading inspection.

430. Disturbed Vacant Lands / Weed Abatement Activities

1. Owners of property with a disturbed surface area greater than 5,000 square feet shall within 30 days of receiving official notice by the City (County) prevent trespass through physical access restriction as permitted by the City (County).

2. In the event that implementation of Section 430.1 is not effective in establishing a stabilized surface within 45 days of restricting access, the owner shall implement at least one of the following long term stabilization techniques within an additional 15 days, unless the City (County) has determined that the land has been restabilized:

    A. uniformly apply and maintain surface gravel or chemical dust suppressants such that a stabilized surface is formed; or
    B. begin restoring disturbed surfaces such that the vegetative cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions. Such restoration control measure(s) must be maintained and reapplied, if necessary, such that a stabilized surface is formed within 8 months of the initial application.

3. Any operator conducting weed abatement activities on a site that results in a disturbed surface area of 5,000 or more square feet shall:

    A. apply sufficient water before and during weed abatement activities such that the applicable performance standards are met.
    B. ensure that the affected area is a stabilized surface once weed abatement activities have ceased.

<u>Performance Standards and Test Methods</u>

4. No person subject to the provisions of Sections 430.1 through 430.3 shall cause or allow visible fugitive dust emissions to exceed 20 percent opacity, or extend more than 100 feet either horizontally or vertically from a source, or cross any property line, and shall either:

    A. maintain a stabilized surface; or
    B. maintain a threshold friction velocity for disturbed surface areas corrected for non-erodible elements of 100 centimeters per second or higher.

Reporting / Recordkeeping

5. Within 90 days of ordinance adoption, operators of property with disturbed surface area of 5,000 or more square feet shall notify the City (County) of the location of such lands and provide owner contact information.

6. Any person subject to the provisions of Sections 430.1 through 403.3 shall compile, and retain for a period of not less than three years, records indicating the name and contact person of all firms contracted with for dust mitigation, listing of dust control implements used on-site, and invoices from dust suppressant contractors/vendors.

460. Public or Private Paved Roads

1. Any owner of paved roads shall construct, or require to be constructed all new or widened paved roads in accordance with the following standards:

    A. curbing in accordance with the American Association of State Highway and Transportation Officials guidelines or as an alternative, road shoulders paved or treated with chemical dust suppressants or washed gravel in accordance with the performance standards included in Section 440.4 with the following minimum widths:

Average Daily Trips	Minimum Shoulder Width
500 - 3,000	4 feet
3,000 or greater	8 feet

Section 500 Administrative Requirements

1. Any operator preparing a Fugitive Dust Control Plan shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

2. At least one representative of each construction or demolition general contractor and subcontractor responsible for earth-movement operations shall complete the AQMD Coachella Valley Fugitive Dust Control Class and maintain a current valid Certificate of Completion.

3. All reporting / recordkeeping required by Section 420 shall be provided to the City (County) and AQMD representatives immediately upon request.

4. All reporting / recordkeeping required by Section 430 through Section 460 shall be provided to the City (County) and AQMD representatives within 24-hours of a written request.

Local – City of Rancho Mirage

Local jurisdictions, such as the City of Rancho Mirage, have the authority and responsibility to reduce air pollution through its police power and decision-making authority. Specifically, the City is responsible for the assessment and mitigation of air emissions resulting from its land use decisions. The City is also responsible for the implementation of transportation control measures as outlined in the 2022 AQMP. Examples of such measures include bus turnouts, energy-efficient streetlights, and synchronized traffic signals. In accordance with CEQA requirements and the CEQA review process, the County assesses the air quality impacts of new development projects, requires mitigation of potentially significant air quality impacts by conditioning discretionary permits, and monitors and enforces implementation of such mitigation.

The City relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Air Quality Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

Chapter 6 Air Quality of the City of Rancho Mirage General Plan assists the City and the region to meet ambient air standards set by the U.S. Environmental Protection Agency and the California Air Resources Board. The air quality related goal and policies in the Air Quality Element that relate to the proposed project include:

Goal AQ-1 Preservation and enhancement of regional air quality for the protection of the health and welfare of the community as a whole.

Policy AQ-1.1 The City shall coordinate and cooperate with CVAG and SCAQMD in the ongoing monitoring and management of major pollutants affecting Rancho Mirage and the region, with particular focus on PM10.

Policy AQ-1.2 The City shall promote the development of pedestrian-oriented retail centers, as well as community wide multi use trails and bike paths, dedicated bike lanes, and other desirable alternatives to motor vehicle traffic.

Policy AQ-1.3 The City shall promote the appropriate and cost-effective development and coordination of mass transit/ shuttle service linking residential, shopping, resort, and commercial centers of Rancho Mirage, and participate with CVAG, the Southern California Association of Governments, and public and private service providers to improve and optimize regional transportation services.

Policy AQ-1.4 The City shall encourage the use of clean alternative energy sources for transportation, heating, and cooling whenever practical.

Policy AQ-1.5 The City shall review all development proposals for potential adverse effects on air quality and require mitigation of any significant impacts.

Policy AQ-1.6 The City shall strive towards achieving a level-of-service C (see Circulation Element) on all roadways to improve traffic flow, minimize idling time, and reduce air emissions.

Table 2
State and Federal Criteria Pollutant Standards

Air Pollutant	Concentration / Averaging Time		Most Relevant Effects
	California Standards	Federal Primary Standards	
Ozone (O_3)	0.09 ppm/1-hour 0.07 ppm/8-hour	0.070 ppm/8-hour	(a) Decline in pulmonary function and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) Vegetation damage; and (f) Property damage.
Carbon Monoxide (CO)	20.0 ppm/1-hour 9.0 ppm/8-hour	35.0 ppm/1-hour 9.0 ppm/8-hour	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; and (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	0.18 ppm/1-hour 0.03 ppm/annual	100 ppb/1-hour 0.053 ppm/annual	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	0.25 ppm/1-hour 0.04 ppm/24-hour	75 ppb/1-hour 0.14 ppm/annual	(a) Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	50 µg/m^3/24-hour 20 µg/m^3/annual	150 µg/m^3/24-hour	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Declines in pulmonary function growth in children; (c) Increased risk of premature death from heart or lung diseases in elderly.
Suspended Particulate Matter ($PM_{2.5}$)	12 µg/m^3 / annual	35 µg/m^3/24-hour 12 µg/m^3/annual	
Sulfates	25 µg/m^3/24-hour	No Federal Standards	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) property damage.
Lead	1.5 µg/m^3/30-day	0.15 µg/m^3/3-month rolling	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction.
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when humidity is less than 70 percent.	No Federal Standards	Visibility impairment on days when relative humidity is less than 70 percent.

Notes:

(1) Source: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf

Table 3
Salton Sea Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Unclassifiable/Attainment
Nitrogen dioxide	Attainment	Unclassifiable/Attainment
Sulfur dioxide	Attainment	Unclassifiable/Attainment
PM10	Nonattainment	Nonattainment
PM2.5	Attainment	Unclassifiable/Attainment

Notes:

(1) Source : Source (Federal and State Status): SCAQMD 2022 Air Quality Management Plan (December 2022) http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/final-2022-aqmp/final-2022-aqmp.pdf?sfvrsn=16.

MONITORED AIR QUALITY

The air quality at any site is dependent on the regional air quality and local pollutant sources. Regional air quality is determined by the release of pollutants throughout the air basin. Estimates of the existing emissions in the Basin provided in the Final 2022 Air Quality Management Plan prepared by SCAQMD (December 2022) indicate that collectively, mobile sources account for 46 percent of the VOC, 85 percent of the NOx emissions, 89 percent of the CO emissions and 29 percent of directly emitted PM2.5, with another 18 percent of PM2.5 from road dust.

The EPA and the CARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified". National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or 'form' of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual PM2.5 standard is met if the three-year average of the annual average PM2.5 concentration is less than or equal to the standard. Attainment status is shown in Table 3.

The SCAQMD has 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project is within Source Receptor Area 30, Coachella Valley. SCAQMD operates two air monitoring stations in SRA 30, one in Indio, California, approximately 12.3 miles southeast of the project site, at 46990 Jackson Street, Indio, and the other in Palm Springs, California, approximately 8.75 miles northwest of the project site, at 590 Racquet Club Avenue, Palm Springs. Both monitoring stations were used to collect monitoring data.

Table 4 summarizes 2020 through 2022 published monitoring data, which is the most recent 3-year period available. The data shows that during the past few years, the project area has exceeded the ozone and Particulate Matter (PM10) standards.

Ozone

During the 2020 to 2022 monitoring period, the State 1-hour concentration standard for ozone was exceeded between seven and 10 days each year at the Palm Springs Station. The State 8-hour ozone standard has been exceeded between 38 and 53 days each year over the past three years at the Palm Springs Station. The Federal 8-hour ozone standard was exceeded between 35 and 49 days each year over the past three years at the Palm Springs Station.

Ozone is a secondary pollutant as it is not directly emitted. Ozone is the result of chemical reactions between other pollutants, most importantly hydrocarbons and NO_2, which occur only in the presence of bright sunlight. Pollutants emitted from upwind cities react during transport downwind to produce the oxidant concentrations experienced in the area. Many areas of the SCAQMD contribute to the ozone levels experienced at the monitoring station, with the more significant areas being those directly upwind.

Carbon Monoxide

CO is another important pollutant that is due mainly to motor vehicles. The Palm Springs Station did not record an exceedance of the state or federal 8-hour CO standard for the last three years.

Nitrogen Dioxide

The Palm Springs Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

During the 2020 to 2022 monitoring period, the State 24-hour concentration standards for PM10 was exceeded for only one day in 2022 at the Palm Springs Station. The Federal 24-hour concentration standards have only been exceeded for three days in 2022 over the past three years at the Palm Springs Station.

During the 2020 to 2022 monitoring period, the Federal 24-hour standards for PM2.5 were not exceeded at the Palm Springs Station.

According to the EPA, some people are much more sensitive than others to breathing fine particles (PM10 and PM2.5). People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death due to breathing these fine particles. People with bronchitis can expect aggravated symptoms from breathing in fine particles. Children may experience decline in lung function due to breathing in PM10 and PM2.5. Other groups considered sensitive are smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive, because many breathe through their mouths during exercise.

Table 4
Air Quality Monitoring Summary

Pollutant (Standard)[2]		Year		
		2020	2021	2022
Ozone:	Maximum 1-Hour Concentration (ppm)	0.119	0.110	0.106
	Days > CAAQS (0.09 ppm)	9	10	7
	Maximum 8-Hour Concentration (ppm)	0.094	0.093	0.090
	Days > NAAQS (0.070 ppm)	49	35	39
	Days > CAAQS (0.070 ppm)	53	38	43
Carbon Monoxide:	Maximum 8-Hour Concentration (ppm)	*	*	*
	Days > CAAQS (9 ppm)	0	0	0
	Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[2]	Maximum 1-Hour Concentration (ppm)	0.047	0.036	0.038
	Days > CAAQS (0.18 ppm)	0	0	0
Inhalable Particulates (PM10):	Maximum 24-Hour Concentration (µg/m^3)	129.8	35.2	159.5
	Days > NAAQS (150 µg/m3)	0	0	1
	Days > CAAQS (50 µg/m3)	0	0	3
	Annual Average (µg/m3)	23.2	18.4	21.1
Ultra-Fine Particulates (PM2.5):	Maximum 24-Hour Concentration (µg/m3)	23.9	13.5	31.2
	Days > NAAQS (35 µg/m3)	0	0	0
	Annual Average (µg/m3)	6.4	6.2	6.3

Notes:

Source: http://www.arb.ca.gov/adam/topfour/topfour1.php. Data from the Palm Springs Monitoring Station unless otherwise noted.

(1) CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

* Means there was insufficient data available to determine value.

AIR QUALITY STANDARDS

Significance Thresholds

Appendix G of the State CEQA Guidelines

Appendix G of the State CEQA Guidelines states that, where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make a significance determination. Pursuant to Appendix G, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct the implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The CEQA Guidelines Section 15064.7 provides the significance criteria established by the applicable air quality management district or air pollution control district, when available, may be relied upon to make determinations of significance. The potential air quality impacts of the project are, therefore, evaluated according to thresholds developed by SCAQMD in their CEQA Air Quality Handbook, Air Quality Analysis Guidance Handbook, and subsequent guidance, which are listed below.[4] Therefore, the project would result in a potentially significant impact to air quality if it would:

AIR-1: Conflict with or obstruct the implementation of the applicable air quality plan;

AIR-2: Violate any air quality standard or contribute substantially to an existing or projected air quality violation as a result of:

- Criteria pollutant emissions during construction (direct and indirect) in excess of the SCAQMD's regional significance thresholds,
- Criteria pollutant emissions during operation (direct and indirect) in excess of the SCAQMD's regional significance thresholds.

AIR-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);

AIR-4: Expose sensitive receptors to substantial pollutant concentrations that would:

- Exceed SCAQMD's localized significance thresholds,
- Cause or contribute to the formation of CO hotspots.

AIR-5: Create objectionable odors affecting a substantial number of people.

[4] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from industrial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

The SCAQMD is in the process of developing an Air Quality Analysis Guidance Handbook to replace the CEQA Air Quality Handbook. In the interim, supplemental guidance has been adopted by the SCAQMD. The potential air quality impacts of the project are, therefore, evaluated according to numeric indicators developed by the SCAQMD in the CEQA Air Quality Handbook and supplemental guidance from the SCAQMD.[5]

Regional Air Quality

Many air quality impacts that derive from dispersed mobile sources, which are the dominate pollution generators in the basin, often occurs hours later and miles away after photochemical processes have converted primary exhaust pollutants into secondary contaminants such as ozone. The incremental regional air quality impact of an individual project is generally very small and difficult to measure. Therefore, the SCAQMD has developed significance thresholds based on the volume of pollution emitted rather than on actual ambient air quality because the direct air quality impact of a project is not quantifiable on a regional scale. The SCAQMD CEQA Handbook states that any project in the South Coast Air Basin with daily emissions that exceed any of the identified significance thresholds should be considered as having an individually and cumulatively significant air quality impact. For the purposes to this air quality impact analysis, a regional air quality impact would be considered significant if emissions exceed the SCAQMD significance thresholds identified in Table 5.

Local Air Quality

Project-related construction air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the South Coast Air Basin. In order to assess local air quality impacts the SCAQMD has developed Localized Significance Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significance Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significance Threshold Methodology found that the primary emissions of concern are NO_2, CO, PM10, and PM2.5.

The significance thresholds for the local emissions of NO_2 and CO are determined by subtracting the highest background concentration from the last three years of these pollutants from Table 4 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significance Thresholds. Table 5 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

Toxic Air Contaminants

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during the construction phase of the Project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[6] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[7] health effects from TACs are described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs over a 30-year lifetime will contract cancer based on the use of standard risk-

[5] While the SCAQMD CEQA Air Quality Handbook contains significance thresholds for lead, Project construction and operation would not include sources of lead emissions and would not exceed the established thresholds for lead. Unleaded fuel and unleaded paints have virtually eliminated lead emissions from commercial land use projects such as the Project. As a result, lead emissions are not further evaluated herein.

[6] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[7] South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003. ,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

assessment methodology. Additionally, the SCAQMD CEQA guidance does not require a HRA for short-term construction emissions. Construction activities associated with the project would be sporadic, transitory, and short-term in nature (approximately 13 months). Thus, construction of the project would not result in a substantial, long-term (i.e., 30-year) source of TAC emissions. Nonetheless, a qualitative assessment of TAC emissions associated with short-term construction TAC emissions is provided in the analysis section below.

Operation

The project proposes to develop the site with residential uses. Therefore, the project is not anticipated to be a source of toxic air contaminants and sensitive receptors would not be exposed to toxic sources of air pollution.

Odor Impacts

The SCAQMD CEQA Handbook states that an odor impact would occur if the proposed project creates an odor nuisance pursuant to SCAQMD Rule 402, which states:

A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

If the proposed project results in a violation of Rule 402 with regards to odor impacts, then the proposed project would create a significant odor impact.

Table 5
SCAQMD Air Quality Significance Thresholds

Mass Daily Thresholds[1]		
Pollutant	Construction (lbs/day)	Operation (lbs/day)
NOx	100	55
VOC	75	55
PM10	150	150
PM2.5	55	55
SOx	150	150
CO	550	550
Lead	3	3
Toxic Air Contaminants (TACs), Odor and GHG Thresholds		
TACs (including carginogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index > 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to South Coast AQMD Rule 402	
GHG	10,000 MT/yr CO2e for industrial facilities	
Ambient Air Quality Standards for Criteria Pollutants[2]		
NO2 1-hour average annual arithmetic mean	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) & 0.0534 ppm (federal)	
PM10 24-hour average annual average	10.4 µg/m^3 (construction)[3] & 2.5 ug/m^3 (operation) 1.0 ug/m^3	
PM2.5 24-hour average	10.4 µg/m^3 (construction)[3] & 2.5 µg/m^3 (operation)	
SO2 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99th percentile) 0.04 ppm (state)	
Sulfate 24-hour average	25 µg/m^3 (state)	
CO 1-hour average 8-hour average	South Coast AQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) & 35 ppm (federal) 9 ppm (state/federal)	
Lead 30-day average Rolling 3-month average	1.5 µg/m^3 (state) 0.15 µg/m^3 (federal)	

Notes:
Source: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook
(1) Source: South Coast AQMD CEQA Handbook (South Coast AQMD, 1993)
(2) Ambient air quality thresholds for criteria pollutants based on South Coast AQMD Rule 1303, Table A-2 unless otherwise stated.
(3) Ambient air quality threshold based on South Coast AQMD Rule 403.

SHORT-TERM CONSTRUCTION EMISSIONS

Construction activities associated with the proposed project would have the potential to generate air emissions, toxic air contaminant emissions, and odor impacts. Assumptions for the phasing, duration, and required equipment for the construction of the proposed project were obtained from the project applicant. Construction activities for the proposed project are anticipated to include: demolition of an approximately 1,095 square foot existing single-family dwelling unit; grading of approximately 4.37 net acres; construction of nine single-family residential dwelling units and 0.4 acres of retention basins and landscaping; paving of 0.58 acres of on-site roadways; and application of architectural coatings. Grading of the site is anticipated balance. See Appendix B for more details.

The proposed project is anticipated to start construction no earlier than January 2025. However, the duration of construction is unknown at this time. Therefore, CalEEMod default construction timing was utilized in this analysis. Based on CalEEMod defaults, with a start date of January 2025, the project is anticipated to be completed by early February 2026. The project is anticipated to be operational in 2026.

Methodology

The following provides a discussion of the methodology used to calculate regional construction air emissions and an analysis of the proposed project's short-term construction emissions for the criteria pollutants. The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

Emissions are estimated using the CalEEMod (Version 2022.1.1.20) software, which is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions from a variety of land use projects. CalEEMod was developed in collaboration with the air districts of California. Regional data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California air districts to account for local requirements and conditions. The model is considered to be an accurate and comprehensive tool for quantifying air quality and GHG impacts from land use projects throughout California and is recommended by the SCAQMD.[8]

Daily regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e., assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. The input values used in this analysis were adjusted to be project-specific for the construction schedule and the equipment used was based on CalEEMod defaults. The CalEEMod program uses the EMFAC2021 computer program to calculate the emission rates specific for the eastern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2017 computer program to calculate emission rates for heavy truck operations. EMFAC2021 and OFFROAD2017 are computer programs generated by CARB that calculates composite emission rates for vehicles. Emission rates are reported by the program in grams per trip and grams per mile or grams per running hour. Daily truck trips and CalEEMod default trip length data were used to assess roadway emissions from truck exhaust. The maximum daily emissions are estimated values for the worst-case day and do not represent the emissions that would occur for every day of project construction. The maximum daily emissions are compared to the SCAQMD daily regional numeric indicators. Detailed construction equipment lists, construction scheduling, and emission calculations are provided in Appendix B.

The project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rules 403 and 403.1 establish these procedures. Compliance with these rules is achieved through application of standard best management practices in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, managing haul road dust by application of water, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 mph, sweeping loose dirt

[8] South Coast Air Quality Management District, California Emissions Estimator Model, http://www.aqmd.gov/ caleemod/.

from paved site access roadways, cessation of construction activity when winds exceed 25 mph and establishing a permanent and stabilizing ground cover on finished sites.

In addition, any operator applying for a grading permit, or a building permit for an activity with a disturbed surface area of more than 5,000 square feet, shall not initiate any earth-moving operations unless a Fugitive Dust Control Plan has been prepared pursuant to the provisions of the Coachella Valley Fugitive Dust Control Handbook and approved by the City. It is anticipated that this project will obtain and prepare the required Fugitive Dust Control Plan.

SCAQMD's Rule 403 and 403.1 minimum requirements require that the application of the best available dust control measures are used for all grading operations and include the application of water or other soil stabilizers in sufficient quantity to prevent the generation of visible dust plumes. Compliance with Rules 403 and 403.1 would require the use of water trucks during all phases where earth moving operations would occur. Compliance with Rule 403 has been included in the CalEEMod modeling for the proposed project.

Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied after January 1, 2014 will be limited to an average of 50 grams per liter or less. CalEEMod defaults have been adjusted accordingly.

The phases of the construction activities which have been analyzed below for each phase are: (1) demolition, (2) grading, (3) building construction, (4) paving, and (5) application of architectural coatings. Building construction, paving and painting phases may overlap during construction. Details pertaining to the project's construction timing and the type of equipment modeled for each construction phase are available in the CalEEMod output in Appendix B.

Construction-Related Regional Impacts

The maximum summer or winter criteria pollutant emissions from the proposed project's construction-related criteria pollutant emissions are shown below in Table 6. Table 6 shows that none of the project's emissions will exceed regional thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the proposed project.

Construction-Related Local Impacts

Construction-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea portion of the South Coast Air Basin. The proposed project has been analyzed for the potential local air quality impacts created from: construction-related fugitive dust and diesel emissions; from toxic air contaminants; and from construction-related odor impacts.

Local Air Quality Impacts from Construction

The SCAQMD has published a "Fact Sheet for Applying CalEEMod to Localized Significance Thresholds" (South Coast Air Quality Management District 2011b). CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily disturbance activity possible for each piece of equipment. In order to compare CalEEMod reported emissions against the localized significance threshold lookup tables, the CEQA document should contain the following parameters:

(1) The off-road equipment list (including type of equipment, horsepower, and hours of operation) assumed for the day of construction activity with maximum emissions.
(2) The maximum number of acres disturbed on the peak day.
(3) Any emission control devices added onto off-road equipment.
(4) Specific dust suppression techniques used on the day of construction activity with maximum emissions.

The CalEEMod output in Appendix B show the equipment used for this analysis.

As shown in Table 7, the maximum number of acres disturbed in a day would be 2.5 acres during grading. The local air quality emissions from construction were analyzed using the SCAQMD's Mass Rate Localized Significant Threshold Look-up Tables and the methodology described in Localized Significance Threshold Methodology prepared by SCAQMD (revised July 2008). The Look-up Tables were developed by the SCAQMD in order to readily determine if the daily emissions of CO, NOx, PM10, and PM2.5 from the proposed project could result in a significant impact to the local air quality. The emission thresholds were calculated based on the Coachella Valley source receptor area (SRA) 30 and a disturbance value of two acres per day, to be conservative. According to LST Methodology, any receptor located closer than 25 meters (82 feet) shall be based on the 25-meter thresholds. The nearest sensitive receptors are the existing single-family residential uses with property lines located adjacent to the north and east of the project site; therefore, the SCAQMD Look-up Tables for 25 meters was used. Table 8 shows the on-site emissions from the CalEEMod model for the different construction phases and the LST emissions thresholds.

The data provided in Table 8 shows that none of the analyzed criteria pollutants would exceed the local emissions thresholds at the nearest sensitive receptors. Therefore, a less than significant local air quality impact would occur from construction of the proposed project.

Construction-Related Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during construction of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project construction are not anticipated.

Construction-Related Toxic Air Contaminant Impacts

The greatest potential for toxic air contaminant emissions would be related to diesel particulate emissions associated with heavy equipment operations during construction of the proposed project. According to the Office of Environmental Health Hazard Assessment (OEHHA)[9] and the SCAQMD *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis* (August 2003),[10] health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 30-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 13 months), the Project would not result in a long-term (i.e., lifetime or 30-year) exposure as a result of project construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds and the nearest sensitive receptors to the project are located adjacent to the north and east of the project site.

The project would comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation; compliance with these would minimize emissions of TACs during construction. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, impacts from TACs during construction would be less than significant.

[9] Office of Environmental Health Hazard Assessment, Air Toxic Hot Spots Program Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessment, February 2015, https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

[10] South Coast Air Quality Management District, Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis, August 2003. ,http://www.aqmd.gov/docs/default-source/ceqa/handbook/mobile-source-toxics-analysis.doc?sfvrsn=2.

Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement. The objectionable odors that may be produced during the construction process are short-term in nature and the odor emissions are expected cease upon the drying or hardening of the odor producing materials. Due to the short-term nature and limited amounts of odor producing materials being utilized, no significant impact related to odors would occur during construction of the proposed project. Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not reach an objectionable level at the nearest sensitive receptors.

Table 6
Construction-Related Regional Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Maximum Daily Emissions[1,2]	7.73	22.30	23.20	0.04	3.68	2.05
SCAQMD Thresholds	75	100	550	150	150	55
Exceeds Thresholds?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1.1.20.

(1) Includes on-site and off-site emissions. On-site demolition and grading PM-10 and PM-2.5 emissions show compliance with SCAQMD Rule 403 for fugitive dust.

(2) Construction, painting and paving phases may overlap.

Table 7
Maximum Number of Acres Disturbed Per Day

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Demolition	Rubber Tired Dozers	2	0.5	1
	Total for Phase	**-**	**-**	**1**
Grading	Rubber Tired Dozers	1	0.5	0.5
	Graders	1	0.5	0.5
	Crawler Tractors[1]	3	0.5	1.5
	Total for Phase	**-**	**-**	**2.5**

Notes:

Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, 2011b.

(1) Tractor/loader/backhoe is a suitable surrogate for a crawler tractor per SCAQMD staff.

Table 8
Local Construction Emissions at the Nearest Receptors

Activity	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Demolition	22.20	19.90	0.96	0.85
Grading	16.30	17.90	3.48	2.00
Building Construction	10.40	13.00	0.43	0.40
Paving	6.52	8.84	0.29	0.26
Architectural Coating	0.86	1.13	0.02	0.02
SCAQMD Thresholds[1]	191	1,299	7	5
Exceeds Threshold?	No	No	No	No

Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for 2 acres, to be conservative, at a distance of 25 m in SRA 30 Coachella Valley.

(1) The nearest sensitive receptors to the project are the existing single-family residential uses with property lines located adjacent to the north and east of the project site; therefore, the 25 meter threshold was used.

Note: The proposed project will disturb up to a maximum of 2.5 acre per day during grading (see Table 7).

LONG-TERM OPERATIONAL EMISSIONS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would be due to emissions from the project-generated vehicle trips and through operational emissions from the on-going use of the proposed project. The following section provides an analysis of potential long-term air quality impacts due to: regional air quality and local air quality impacts with the on-going operations of the proposed project.

Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

Operations-Related Criteria Pollutants Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through the use of the CalEEMod model. The operating emissions were based on the year 2026, which is the anticipated opening year for the proposed project. The operations daily emissions printouts from the CalEEMod model are provided in Appendix B. The CalEEMod analyzes operational emissions from area sources, energy usage, and mobile sources, which are discussed below.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. Per the project applicant, the project is to screen out of the requirement of a traffic study. Therefore, the vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual (2021) into the CalEEMod Model. Per the ITE rate for single-family housing (ITE 210) the proposed project will have trip generation rates of 9.43 trips per dwelling unit per weekday, 9.48 trips per dwelling unit per Saturday, and 8.48 trips per dwelling unit per Sunday. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions.

Area Sources

Per the CAPCOA Appendix A Calculation Details for CalEEMod, area sources include emissions from consumer products, landscape equipment and architectural coatings. Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers, as well as air compressors, generators, and pumps. As specifics were not known about the landscaping equipment fleet, CalEEMod defaults were used to estimate emissions from landscaping equipment. No changes were made to the default area source parameters.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Project Impacts

The maximum daily pollutant emissions created from the proposed project's long-term operations have been calculated and are shown below in Table 9. Table 9 shows that none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from operation of the proposed project.

Operations-Related Local Air Quality Impacts

Project-related air emissions may have the potential to exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea Air Basin. The proposed project has been analyzed for the potential local CO emission impacts from the project-generated vehicular trips and from the potential local air quality impacts from on-site operations. The following analysis analyzes the vehicular CO emissions, local impacts from on-site operations per SCAQMD LST methodology, and odor impacts.

Local CO Emission Impacts from Project-Generated Vehicular Trips

CO is the pollutant of major concern along roadways because the most notable source of CO is motor vehicles. For this reason, CO concentrations are usually indicative of the local air quality generated by a roadway network and are used as an indicator of potential local air quality impacts. Local air quality impacts can be assessed by comparing future without and with project CO levels to the State and Federal CO standards which were presented above in Section 2.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section 2, a sensitivity analysis is typically conducted to determine the potential for CO "hot spots" at a number of intersections in the general project vicinity. Because of reduced speeds and vehicle queuing, "hot spots" potentially can occur at high traffic volume intersections with a Level of Service E or worse.

The analysis prepared for CO attainment in the South Coast Air Basin by the SCAQMD can be used to assist in evaluating the potential for CO exceedances in the South Coast Air Basin. CO attainment was thoroughly analyzed as part of the SCAQMD's 2003 Air Quality Management Plan (2003 AQMP) and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan). As discussed in the 1992 CO Plan, peak carbon monoxide concentrations in the South Coast Air Basin are due to unusual meteorological and topographical conditions, and not due to the impact of particular intersections. Considering the region's unique meteorological conditions and the increasingly stringent CO emissions standards, CO modeling was performed as part of 1992 CO Plan and subsequent plan updates and air quality management plans. In the 1992 CO Plan, a CO hot spot analysis was conducted for four busy intersections in Los Angeles at the peak morning and afternoon time periods. The intersections evaluated included: South Long Beach Boulevard and Imperial Highway (Lynwood); Wilshire Boulevard and Veteran Avenue (Westwood); Sunset Boulevard and Highland Avenue (Hollywood); and La Cienega Boulevard and Century Boulevard (Inglewood). These analyses did not predict a violation of CO standards. The busiest intersection evaluated was that at Wilshire Boulevard and Veteran Avenue, which has a daily traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority[11] evaluated the Level of Service in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be Level of Service E during the morning peak hour and Level of Service F during the afternoon peak hour.

The proposed project consists of nine single-family dwelling units and screened out of requiring a project specific traffic study. The 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan) showed that an intersection which has a daily traffic volume of approximately 100,000 vehicles per day would not violate the CO standard. Therefore, based on the size of the project, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality due to the on-going use of the proposed project.

Local Air Quality Impacts from On-Site Operations

Project-related air emissions from on-site sources such as architectural coatings, landscaping equipment, on-site usage of natural gas appliances as well as the operation of vehicles on-site may have the potential to

[11] Metropolitan Transportation Authority, *2004 Congestion Management Plan for Los Angeles County*, Adopted July 22, 2004.

exceed the State and Federal air quality standards in the project vicinity, even though these pollutant emissions may not be significant enough to create a regional impact to the Salton Sea portion of the South Coast Air Basin. The nearest sensitive receptors to the project include the existing single-family residential uses with property lines located adjacent to the north and east of the project site.

According to SCAQMD LST methodology, LSTs would apply to the operational phase of a project, if the project includes stationary sources, or attracts mobile sources (such as heavy-duty trucks) that may spend long periods queuing and idling at the site, such as industrial warehouse/transfer facilities. The proposed project is the development of the site with residential uses and does not include such uses. Therefore, due to the lack of stationary source emissions, no long-term localized significance threshold analysis is warranted.

Operations-Related Health Impacts

Regarding health effects related to criteria pollutant emissions, the applicable significance thresholds are established for regional compliance with the state and federal ambient air quality standards, which are intended to protect public health from both acute and long-term health impacts, depending on the potential effects of the pollutant. Because regional and local emissions of criteria pollutants during operation of the project would be below the applicable thresholds, it would not contribute to long-term health impacts related to nonattainment of the ambient air quality standards. Therefore, significant adverse acute health impacts as a result of project operation are not anticipated.

Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from diesel vehicle emissions and trash storage areas. The project consists of a hotel and amphitheater and will not attract a significant amount of heavy-duty truck traffic. Due to the distance of the nearest receptors from the project site and through compliance with SCAQMD's Rule 402 no significant impact related to odors would occur during the on-going operations of the proposed project.

Table 9
Regional Operational Pollutant Emissions

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO2	PM10	PM2.5
Maximum Daily Emissions	0.82	0.66	4.80	0.01	0.87	0.24
SCAQMD Thresholds	55	55	550	150	150	55
Exceeds Threshold?	No	No	No	No	No	No

Notes:

Source: CalEEMod Version 2022.1.1.20; the higher of either summer or winter emissions.

CUMULATIVE AIR QUALITY IMPACTS

There are a number of cumulative projects in the project area that have not yet been built or are currently under construction. Since the timing or sequencing of the cumulative projects is unknown, any quantitative analysis to ascertain daily construction emissions that assumes multiple, concurrent construction projects would be speculative. Further, cumulative projects include local development as well as general growth within the project area. However, as with most development, the greatest source of emissions is from mobile sources, which travel well out of the local area. Therefore, from an air quality standpoint, the cumulative analysis would extend beyond any local projects and when wind patterns are considered would cover an even larger area. The SCAQMD recommends using two different methodologies: (1) that project-specific air quality impacts be used to determine the potential cumulative impacts to regional air quality;[12] and (2) that a project's consistency with the current AQMP be used to determine its potential cumulative impacts.

Project Specific Impacts

The project area is out of attainment for ozone and PM10. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality of the Salton Sea portion of the South Coast Air Basin. The greatest cumulative impact on the quality of regional air cell will be the incremental addition of pollutants mainly from increased traffic volumes from residential, commercial, and industrial development and the use of heavy equipment and trucks associated with the construction of these projects. Air quality will be temporarily degraded during construction activities that occur separately or simultaneously. However, in accordance with the SCAQMD methodology, projects that do not exceed the SCAQMD criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. This applies to TACs as well, as the SCAQMD does not have any cumulative TAC thresholds; therefore, projects that do not exceed the SCAQMD TAC threshold criteria or can be mitigated to less than criteria levels are not significant and do not add to the overall cumulative impact. A significant impact may occur if a project would add a cumulatively considerable contribution of a federal or state non-attainment pollutant.

Project operations would generate emissions of NOx, ROG, CO, PM10, and PM2.5, which would not exceed the SCAQMD regional or local thresholds and would not be expected to result in ground level concentrations that exceed the NAAQS or CAAQS. The project will not be a source of significant TACs and will not cause significant cancer or non-cancer-related health risks. Since the project would not introduce any substantial stationary sources of emissions, CO is the benchmark pollutant for assessing local area air quality impacts from post-construction motor vehicle operations. As indicated earlier, no violations of the state and federal CO standards are projected to occur for the project, based on the magnitude of traffic the project is anticipated to create.

Therefore, operation of the project would not result in a cumulatively considerable net increase for non-attainment of criteria pollutants or ozone precursors, or TACs. As a result, the project would result in a less than significant cumulative impact for operational emissions.

Air Quality Compliance

The California Environmental Quality Act (CEQA) requires a discussion of any inconsistencies between a proposed project and applicable General Plans and Regional Plans (CEQA Guidelines Section 15125). The regional plan that applies to the proposed project includes the SCAQMD Air Quality Management Plan (AQMP). Therefore, this section discusses any potential inconsistencies of the proposed project with the AQMP.

[12] South Coast Air Quality Management District, Potential Control Strategies to Address Cumulative Impacts from Air Pollution White Paper, 1993, http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook.

The purpose of this discussion is to set forth the issues regarding consistency with the assumptions and objectives of the AQMP and discuss whether the proposed project would interfere with the region's ability to comply with Federal and State air quality standards. If the decision-makers determine that the proposed project is inconsistent, the lead agency may consider project modifications or inclusion of mitigation to eliminate the inconsistency.

The SCAQMD CEQA Handbook states that "New or amended General Plan Elements (including land use zoning and density amendments), Specific Plans, and significant projects must be analyzed for consistency with the AQMP". Strict consistency with all aspects of the plan is usually not required. A proposed project should be considered to be consistent with the AQMP if it furthers one or more policies and does not obstruct other policies. The SCAQMD CEQA Handbook identifies two key indicators of consistency:

(1) Whether the project will result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP.
(2) Whether the project will exceed the assumptions in the AQMP in 2022 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

Criteria 1 – Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, short-term construction impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance. This Air Analysis also found that long-term operations impacts will not result in significant impacts based on the SCAQMD local and regional thresholds of significance.

Therefore, the proposed project is not projected to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

Criteria 2 – Exceed Assumptions in the AQMP?

Consistency with the AQMP assumptions is determined by performing an analysis of the proposed project with the assumptions in the AQMP. The emphasis of this criterion is to ensure that the analyses conducted for the proposed project are based on the same forecasts as the AQMP. The 2020-2045 Regional Transportation/Sustainable Communities Strategy prepared by SCAG (2020) includes chapters on: the challenges in a changing region, creating a plan for our future, and the road to greater mobility and sustainable growth. These chapters currently respond directly to federal and state requirements placed on SCAG. Local governments are required to use these as the basis of their plans for purposes of consistency with applicable regional plans under CEQA. For this project, the City of Rancho Mirage Land Use Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Residential (R-L-2) on the City of Rancho Mirage General Plan Land Use Map. The proposed project includes development of the approximately 5.04-acre project site with nine single-family dwelling units. Therefore, the proposed project would not result in an inconsistency with the current land use designation in the City's General Plan. Therefore, the proposed project is not anticipated to exceed the AQMP assumptions for the project site and is found to be consistent with the AQMP for the second criterion.

Based on the above, the proposed project will not result in an inconsistency with the SCAQMD AQMP. Therefore, a less than significant impact will occur.

3. GLOBAL CLIMATE CHANGE ANALYSIS

EXISTING GREENHOUSE GAS ENVIRONMENT

Constituent gases of the Earth's atmosphere, called atmospheric greenhouse gases (GHG), play a critical role in the Earth's radiation amount by trapping infrared radiation emitted from the Earth's surface, which otherwise would have escaped to space. Prominent greenhouse gases contributing to this process include carbon dioxide (CO_2), methane (CH_4), ozone, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Anthropogenic (caused or produced by humans) emissions of these greenhouse gases in excess of natural ambient concentrations are responsible for the enhancement of the Greenhouse Effect and have led to a trend of unnatural warming of the Earth's natural climate, known as global warming or climate change. Emissions of gases that induce global warming are attributable to human activities associated with industrial/manufacturing, agriculture, utilities, transportation, and residential land uses. Transportation is responsible for 41 percent of the State's greenhouse gas emissions, followed by electricity generation. Emissions of CO_2 and nitrous oxide (NOx) are byproducts of fossil fuel combustion. Methane, a potent greenhouse gas, results from off-gassing associated with agricultural practices and landfills. Sinks of CO_2, where CO_2 is stored outside of the atmosphere, include uptake by vegetation and dissolution into the ocean. The following provides a description of each of the greenhouse gases and their global warming potential.

Water Vapor

Water vapor is the most abundant, important, and variable GHG in the atmosphere. Water vapor is not considered a pollutant; in the atmosphere it maintains a climate necessary for life. Changes in its concentration are primarily considered a result of climate feedbacks related to the warming of the atmosphere rather than a direct result of industrialization. The feedback loop in which water is involved is critically important to projecting future climate change. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to "hold" more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. The warmer atmosphere can then hold more water vapor and so on and so on. This is referred to as a "positive feedback loop". The extent to which this positive feedback loop will continue is unknown as there is also dynamics that put the positive feedback loop in check. As an example, when water vapor increases in the atmosphere, more of it will eventually also condense into clouds, which are more able to reflect incoming solar radiation (thus allowing less energy to reach the Earth's surface and heat it up).

Carbon Dioxide (CO_2)

The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. However, humankind has altered the natural carbon cycle by burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700s. Each of these activities has increased in scale and distribution. CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration with the first conclusive measurements being made in the last half of the 20th century. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010. Globally, economic and population growth continued to be the most important drivers of increases in CO_2 emissions from fossil fuel combustion. The contribution of population growth between 2000 and 2010 remained roughly identical to the previous three decades, while the contribution of economic growth has risen sharply.

Methane (CH_4)

CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Its lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other anthropocentric sources include fossil-fuel combustion and biomass burning.

Nitrous Oxide (N_2O)

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant, (i.e., in whipped cream bottles, in potato chip bags to keep chips fresh, and in rocket engines and in race cars).

Chlorofluorocarbons (CFC)

CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source, but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs will remain in the atmosphere for over 100 years.

Hydrofluorocarbons (HFC)

HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade for applications such as automobile air conditioners and refrigerants.

Perfluorocarbons (PFC)

PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

Sulfur Hexafluoride (SF_6)

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations of SF_6 in the 1990s were about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Aerosols

Aerosols are particles emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light. Cloud formation can also be affected by aerosols. Sulfate aerosols are emitted when fuel containing sulfur is burned. Black carbon (or soot) is emitted during biomass burning due to the incomplete combustion of fossil fuels. Particulate matter regulation has been lowering aerosol concentrations in the United States; however, global concentrations are likely increasing.

Global Warming Potential

The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). The larger the GWP, the more that a given gas warms the Earth compared to CO_2 over that time period. The time period usually used for GWPs is 100 years. GWPs provide a common unit of measure, which allows analysts to add up emissions estimates of different gases (e.g., to compile a national GHG inventory), and allows policymakers to compare emissions reduction opportunities across sectors and gases. A summary of the atmospheric lifetime and the global warming potential of selected gases are summarized in Table 10. As shown in Table 10, the global warming potential of GHGs ranges from 1 to 22,800.

Table 10
Global Warming Potentials and Atmospheric Lifetimes

Gas	Atmospheric Lifetime	Global Warming Potential[1] (100 Year Horizon)
Carbon Dioxide (CO_2)	–[2]	1
Methane (CH_4)	12	28-36
Nitrous Oxide (NO)	114	298
Hydrofluorocarbons (HFCs)	1-270	12-14,800
Perfluorocarbons (PFCs)	2,600-50,000	7,390-12,200
Nitrogen trifluoride (NF_3)	740	17,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Notes:

Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

(1) Compared to the same quantity of CO_2 emissions.

(2) Carbon dioxide's lifetime is poorly defined because the gas is not destroyed over time, but instead moves among different parts of the ocean–atmosphere–land system. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

GREENHOUSE GAS STANDARDS AND REGULATION

International

Montreal Protocol

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global climate change and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

The Paris Agreement

The Paris Agreement became effective on November 4, 2016. Thirty days after this date at least 55 Parties to the United Nations Framework Convention on Climate Change (Convention), accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions, had deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement built upon the Convention and – for the first time – attempted to bring all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort.

The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. To reach these ambitious goals, appropriate financial flows, a new technology framework and an enhanced capacity building framework will be put in place, thus supporting action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for enhanced transparency of action and support through a more robust transparency framework.

Federal

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), argued November 29, 2006 and decided April 2, 2007, the U.S. Supreme Court held that not only did the EPA have authority to regulate greenhouse gases, but the EPA's reasons for not regulating this area did not fit the statutory requirements. As

such, the U.S. Supreme Court ruled that the EPA should be required to regulate CO_2 and other greenhouse gases as pollutants under the federal Clean Air Act (CAA).

In response to the FY2008 Consolidations Appropriations Act (H.R. 2764; Public Law 110-161), EPA proposed a rule on March 10, 2009 that requires mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of GHG Rule was signed and published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to EPA.

On December 7, 2009, the EPA Administrator signed two distinct findings under section 202(a) of the Clean Air Act. One is an endangerment finding that finds concentrations of the six GHGs in the atmosphere threaten the public health and welfare of current and future generations. The other is a cause or contribute finding, that finds emissions from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare. These actions will not themselves impose any requirements on industry or other entities. However, it is a prerequisite to finalizing the EPA's proposed GHG emission standards for light-duty vehicles, which were jointly proposed by the EPA and Department of Transportation on September 15, 2009.

Clean Air Act

In Massachusetts v. Environmental Protection Agency (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has statutory authority under Section 202 of the federal Clean Air Act (CAA) to regulate GHGs. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHGs cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA. The USEPA adopted a Final Endangerment Finding for the six defined GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA consistently with the United States Supreme Court decision. The USEPA also adopted a Cause or Contribute Finding in which the USEPA Administrator found that GHG emissions from new motor vehicle and motor vehicle engines are contributing to air pollution, which is endangering public health and welfare. These findings do not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Energy Independence Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;
- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.[13]

Executive Order 13432

In response to the Massachusetts v. Environmental Protection Agency ruling, the President signed Executive Order 13432 on May 14, 2007, directing the USEPA, along with the Departments of Transportation, Energy, and Agriculture, to initiate a regulatory process that responds to the Supreme Court's decision. Executive Order 13432 was codified into law by the 2009 Omnibus Appropriations Law signed on February 17, 2009. The order sets goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Light-Duty Vehicle Greenhouse Gas and Corporate Average Fuel Economy Standards.

On May 19, 2009, President Obama announced a national policy for fuel efficiency and emissions standards in the United States auto industry. The adopted federal standard applies to passenger cars and light-duty trucks for model years 2012 through 2016. The rule surpasses the prior Corporate Average Fuel Economy standards (CAFE)[14] and requires an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of CO2 per mile by model year 2016, based on USEPA calculation methods. These standards were formally adopted on April 1, 2010. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle.[15] In 2017, the USEPA recommended no change to the GHG standards for light-duty vehicles for model years 2022-2025.

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. This Rule also excludes CO2- equivalent emission improvements associated with air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.[16]

On May 12, 2021, the National Highway Traffic Safety Administration (NHTSA) published a notice of proposed rulemaking in the Federal Register, proposing to repeal "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," published Sept. 27, 2019 (SAFE I Rule), in which NHTSA codified regulatory text and made additional pronouncements regarding the preemption of state and local laws related to fuel economy standards. Specifically, this document proposes to fully repeal the regulatory text and appendices promulgated in the SAFE I Rule. In addition, this document proposes to repeal and withdraw the interpretative statements made by the Agency in the SAFE I Rule preamble, including those

[13] A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

[14] The Corporate Average Fuel Economy standards are regulations in the United States, first enacted by Congress in 1975, to improve the average fuel economy of cars and light trucks. The U.S Department of Transportation has delegated the National Highway Traffic Safety Administration as the regulatory agency for the Corporate Average Fuel Economy standards.

[15] United States Environmental Protection Agency, EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August 2012, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF.

[16] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.gpo.gov/fdsys/pkg/FR-2018-08-24/pdf/2018-16820.pdf.

regarding the preemption of particular state Greenhouse Gas (GHG) Emissions standards or Zero Emissions Vehicle (ZEV) mandates. As such, this document proposes to establish a clean slate with respect to NHTSA's regulations and interpretations concerning preemption under the Energy Policy and Conservation Act (EPCA).[17]

State of California

California Air Resources Board

CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards [CAAQS]), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2004, the California Air Resources Board (CARB) adopted an Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other toxic air contaminants (Title 13 California Code of Regulations [CCR], Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure generally does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given location with certain exemptions for equipment in which idling is a necessary function such as concrete trucks. While this measure primarily targets diesel particulate matter emissions, it has co-benefits of minimizing GHG emissions from unnecessary truck idling.

In 2008, CARB approved the Truck and Bus regulation to reduce particulate matter and nitrogen oxide emissions from existing diesel vehicles operating in California (13 CCR, Section 2025, subsection (h)). CARB has also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation, adopted by the CARB on July 26, 2007, aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. While these regulations primarily target reductions in criteria air pollutant emission, they have co-benefits of minimizing GHG emissions due to improved engine efficiencies.

The State currently has no regulations that establish ambient air quality standards for GHGs. However, the State has passed laws directing CARB to develop actions to reduce GHG emissions, which are listed below.

Assembly Bill 1493

California Assembly Bill 1493 enacted on July 22, 2002, required the CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009. After adopting these initial greenhouse gas standards for passenger vehicles, CARB adopted continuing standards for future model years.

[17] https://www.federalregister.gov/documents/2021/05/12/2021-08758/corporate-average-fuel-economy-cafe-preemption

Executive Order S-3-05

The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

The Executive Order directed the secretary of the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. To comply with the Executive Order, the secretary of CalEPA created the California Climate Action Team (CAT), made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of businesses, local governments, and communities and through State incentive and regulatory programs.

Assembly Bill 32 (California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006)

In 2006, the California State Legislature adopted Assembly Bill (AB) 32 (codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006), which focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO2, CH4, N2O, HFCs, PFCs, and SF6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing state actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

Senate Bill 32 and Assembly Bill 197

In 2016, the California State Legislature adopted Senate Bill (SB) 32 and its companion bill AB 197, and both were signed by Governor Brown. SB 32 and AB 197 amends HSC Division 25.5 and establishes a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and includes provisions to ensure the benefits of state climate policies reach into disadvantaged communities.

Climate Change Scoping Plan (2008)

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code section 38561 (h)). CARB developed an AB 32 Scoping Plan that contains strategies to achieve the 2020 emissions cap. The initial Scoping Plan was approved in 2008 and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by HSC Division 25.5, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 $MMTCO_2e$ using the GWP values from the IPCC SAR. CARB also projected the state's 2020 GHG emissions under no-action-taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the state's GHG emissions from 2002 through 2004 and

projected the 2020 levels at approximately 596 $MMTCO_2e$ (using GWP values from the IPCC SAR). Therefore, under the original projections, the state must reduce its 2020 NAT emissions by 28.4 percent in order to meet the 1990 target of 427 $MMTCO_2e$.

First Update to the Climate Change Scoping Plan (2014)

The First Update to the Scoping Plan was approved by CARB in May 2014 and builds upon the initial Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 $MMTCO_2e$. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were recently adopted for motor vehicles and renewable energy. CARB's projected statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 $MMTCO_2e$.

2017 Climate Change Scoping Plan

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan at a public meeting held in December 2017. The 2017 Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan also addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. The 2017 Scoping Plan considered the Scoping Plan Scenario and four alternatives for achieving the required GHG reductions but ultimately selected the Scoping Plan Scenario.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals."[18] Under the Scoping Plan Scenario, the majority of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), and implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030. Implementing this Scoping Plan will ensure that California's climate actions continue to promote innovation, drive the generation of new jobs, and achieve continued reductions of smog and air toxics. The ambitious approach draws on a decade of successful programs that address the major sources of climate-changing gases in every sector of the economy:

- More Clean Cars and Trucks: The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- Increased Renewable Energy: California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables, as required under SB 350.
- Slashing Super-Pollutants: The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- Cleaner Industry and Electricity: California's renewed cap-and-trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.
- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.

[18] California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan also outlines innovative programs to account for and reduce emissions from agriculture, as well as forests and other natural lands.

The 2017 Scoping Plan also evaluates reductions of smog-causing pollutants through California's climate programs.

2022 Climate Change Scoping Plan

CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality on November 16, 2022. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California, the world's fifth largest economy, to achieve carbon neutrality by 2045 or earlier, outlining a technologically feasible, cost-effective, and equity-focused path to achieve the state's climate target. The Plan addresses recent legislation and direction from Governor Newsom and extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. The plan also takes the unprecedented step of adding carbon neutrality as a science-based guide and touchstone for California's climate work. Specifically, this plan:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of natural and working lands (NWL) to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

SB 32, Pavley. California Global Warming Solutions Act of 2006

(1) The California Global Warming Solutions Act of 2006 designates the State Air Resources Board as the state agency charged with monitoring and regulating sources of emissions of greenhouse gases. The state board is required to approve a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions level in 1990 to be achieved by 2020 and to adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective greenhouse gas emissions reductions. This bill would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40% below the 1990 level by 2030.
(2) This bill would become operative only if AB 197 of the 2015–16 Regular Session is enacted and becomes effective on or before January 1, 2017. AB 197 requires that the California Air Resources Board, which directs implementation of emission-reduction programs, should target direct reductions at both stationary and mobile sources. AB 197 of the 2015-2016 Regular Session was approved on September 8, 2016.

Senate Bill 1368

Senate Bill 1368 (SB 1368) is the companion Bill of AB 32 and was adopted September, 2006. SB 1368 requires the California Public Utilities Commission (CPUC) to establish a performance standard for baseload

generation of GHG emissions by investor-owned utilities by February 1, 2007, and for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas-fired plant. Furthermore, the legislation states that all electricity provided to the State, including imported electricity, must be generated by plants that meet the standards set by California Public Utilities Commission (CPUC) and California Energy Commission (CEC).

Executive Order S-1-07

Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs the CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard and began implementation on January 1, 2011. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. CARB approved some amendments to the LCFS in December 2011, which were implemented on January 1, 2013. In September 2015, the Board approved the re-adoption of the LCFS, which became effective on January 1, 2016, to address procedural deficiencies in the way the original regulation was adopted. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

The LCFS is designed to encourage the use of cleaner low-carbon transportation fuels in California, encourage the production of those fuels, and therefore, reduce GHG emissions and decrease petroleum dependence in the transportation sector. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

Senate Bill 97

Senate Bill 97 (SB 97) was adopted August 2007 and acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research (OPR), which is part of the State Natural Resources Agency, to prepare, develop, and transmit to the CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The Natural Resources Agency was required to certify and adopt those guidelines by January 1, 2010.

Pursuant to the requirements of SB 97 as stated above, on December 30, 2009, the Natural Resources Agency adopted amendments to the state CEQA guidelines that address GHG emissions. The CEQA Guidelines Amendments changed 14 sections of the CEQA Guidelines and incorporate GHG language throughout the Guidelines. However, no GHG emissions thresholds of significance were provided and no specific mitigation

measures were identified. The GHG emission reduction amendments went into effect on March 18, 2010, and are summarized below:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan.
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment.
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts.
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions in Appendix F of the CEQA Guidelines.
- OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation".
- OPR's emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.
- Environmental impact reports (EIRs) must specifically consider a project's energy use and energy efficiency potential.

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 375

Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). The CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. The CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by the CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

Senate Bill X7-7

Senate Bill X7-7 (SB X7-7), enacted on November 9, 2009, mandates water conservation targets and efficiency improvements for urban and agricultural water suppliers. SB X7-7 requires the Department of Water Resources (DWR) to develop a task force and technical panel to develop alternative best management practices for the water sector. In addition, SB X7-7 required the DWR to develop criteria for baseline uses for residential, commercial, and industrial uses for both indoor and landscaped area uses. The DWR was also required to develop targets and regulations that achieve a statewide 20 percent reduction in water usage.

Assembly Bill 939 and Senate Bill 1374

Assembly Bill 939 (AB 939) requires that each jurisdiction in California to divert at least 50 percent of its waste away from landfills, whether through waste reduction, recycling or other means. Senate Bill 1374 (SB 1374) requires the California Integrated Waste Management Board to adopt a model ordinance by March 1, 2004, suitable for adoption by any local agency to require 50 to 75 percent diversion of construction and demolition of waste materials from landfills.

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

The Energy Commission adopted 2008 Standards on April 23, 2008, and Building Standards Commission approved them for publication on September 11, 2008. These updates became effective on August 1, 2009. CalEEMod modeling defaults to 2008 standards. 2013 Standards were approved and have been effective since July 1, 2014. 2016 Standards were adopted January 1, 2017. 2019 standards were published July 1, 2019 and became effective January 1, 2020. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

Per Section 100 Scope, the 2019 Title 24, Part 6 Building Code now requires healthcare facilities, such as assisted living facilities, hospitals, and nursing homes, to meet documentation requirements of Title 24, Part 1 Chapter 7 – Safety Standards for Health Facilities. A healthcare facility is defined as any building or portion thereof licensed pursuant to California Health and Safety Code Division 2, Chapter 1, Section 1204 or Chapter 2, Section 1250.

Section 120.1 Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times. The 2019 version of the Code also completely revised the minimum ventilation requirements including DVC airflow rates within Section 120.1 Table 120.1–A. Table

120.1-A now includes air classification and recirculation limitations, these are based on either the number of occupants or the CFM/ft^2 (cubic feet per minute per square foot), whichever is greater.

Section 120.1 Ventilation and Indoor Air Quality also included additions for high-rise residential buildings. Requirements include that mechanical systems must provide air filters that and that air filters must be MERV 13 or use a particle size efficiency rating specified in the Energy Code. Window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1.

Per Section 120.1(a) healthcare facilities must be ventilated in accordance with Chapter 4 of the California Mechanical Code and are NOT required to meet the ventilations requirements of Title 24, Part 6.

Section 140.4 Space Conditioning Systems included both additions and revisions within the 2019 Code. The changes provided new requirements for cooling tower efficiency, new chilled water-cooling system requirements, as well as new formulas for calculating allowed fan power. Section 140.4(n) also provide a new exception for mechanical system shut-offs for high-rise multifamily dwelling units, while Section 140.4(o) added new requirements for conditioned supply air being delivered to space with mechanical exhaust.

Section 120.6 Covered Processes added information in regards to adiabatic chiller requirements that included that all condenser fans for air-cooled converseness, evaporative-cooled condensers, adiabatic condensers, gas coolers, air or water fluid coolers or cooling towers must be continuously variable speed, with the speed of all fans serving a common condenser high side controlled in unison .Further, the mid-condensing setpoint must be 70 degrees Fahrenheit for all of the above mentioned systems.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

Section 130.2 Outdoor Lighting Controls and Equipment added automatic scheduling controls which included that outdoor lighting power must be reduced by 50 to 90 percent, turn the lighting off during unoccupied times and have at least two scheduling options for each luminaire independent from each other and with a 2-hour override function. Furthermore, motion sensing controls must have the ability to reduce power within 15 minutes of area being vacant and be able to come back on again when occupied. An exception allows for lighting subject to a health or life safety statute, ordinance, or regulation may have a minimum time-out period longer than 15 minutes or a minimum dimming level above 50% when necessary to comply with the applicable law.

The 2022 Building Energy Efficiency Standards became effective on January 1, 2023.[19] All buildings for which an application for a building permit is submitted on or after January 1, 2023 must follow the 2022 standards. The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.

[19] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal systems, and grid integration equipment, such as demand-responsive controls to buoy grid stability.[20,21]

California Code of Regulations (CCR) Title 24, Part 11

On January 12, 2010, the State Building Standards Commission unanimously adopted updates to the California Green Building Standards Code, which went into effect on January 1, 2011. The 2016 version of the California Green Building Standards became effective January 1, 2017.

2016 CALGreen Code: The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions. During the 2016-2017 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2015 Triennial Code Adoption Cycle.

HCD also increased the required construction waste reduction from 50 percent to 65 percent of the total building site waste. This increase aids in meeting CalRecycle's statewide solid waste recycling goal of 75 percent for 2020 as stated in Chapter 476, Statutes of 2011 (AB 341). HCD adopted new regulations requiring recycling areas for multifamily projects of five or more dwelling units. This regulation requires developers to provide readily accessible areas adequate in size to accommodate containers for depositing, storage and collection of non-hazardous materials (including organic waste) for recycling. This requirement assists businesses that were required as of April 1, 2016, to meet the requirements of Chapter 727, Statutes of 2014 (AB 1826).

HCD adopted new regulations to require information on photovoltaic systems and electric vehicle chargers to be included in operation and maintenance manuals. Currently, CALGreen section 4.410.1 Item 2(a) requires operation and maintenance instructions for equipment and appliances. Photovoltaic systems and electric vehicle chargers are systems that play an important role in many households in California, and their importance is increasing every day. HCD incorporated these two terms in the existing language in order to provide clarity to code users as to additional systems requiring operation and maintenance instructions.

[20] https://www.lightnowblog.com/2021/08/california-energy-commission-adopts-2022-building-energy-efficiency-standards/

[21] State of California Energy Commission. 2022 Building Energy Efficiency Standards Summary. https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf

HCD updated the reference to Clean Air Standards of the United States Environmental Protection Agency applicable to woodstoves and pellet stoves. HCD also adopted a new requirement for woodstoves and pellet stoves to have a permanent label indicating they are certified to meet the emission limits. This requirement provides clarity to the code user and is consistent with the United States Environmental Protection Agency's New Source Performance Standards. HCD updated the list of standards which can be used for verification of compliance for exterior grade composite wood products. This list now includes four standards from the Canadian Standards Association (CSA): CSA O121, CSA O151, CSA O153 and CSA O325. HCD updated heating and air-conditioning system design references to the ANSI/ACCA 2 Manual J, ANSI/ACCA 1 Manual D, and ANSI/ACCA 3 Manual S to the most recent versions approved by ANSI. HCD adopted a new elective measure for hot water recirculation systems for water conservation. The United States Department of Energy estimates that 3,600 to 12,000 gallons of water per year can be saved by the typical household (with four points of hot water use) if a hot water recirculation system is installed.

2019 CALGreen Code: During the 2019-2020 fiscal year, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. The 2019 version of the California Green Building Standards became effective January 1, 2020.

HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

The 2022 California Green Building Standards Code became effective on January 1, 2023.[22]

In the 2022 Code, HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces. [23]

Executive Order B-30-15

On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

Executive Order B-29-15

Executive Order B-29-15, mandates a statewide 25 percent reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16

Executive Order B-37-16, continuing the State's adopted water reductions, was signed into law on May 9, 2016. The water reductions build off the mandatory 25 percent reduction called for in EO B-29-15.

Executive Order N-79-20

Executive Order N-79-20 Signed in September 2020, Executive Order N-79-20 establishes as a goal that where feasible, all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, will be zero-emission by 2035. The executive order sets a similar goal requiring that all medium and heavy-duty vehicles will be zero-emission by 2045 where feasible. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium-and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new zero emission vehicles (ZEVs) "towards the target of 100 percent." The executive order directs the California Environmental Protection Agency, the California Geologic Energy Management Division (CalGEM), and the California Natural Resources Agency to transition and repurpose oil production facilities with a goal toward meeting carbon neutrality by 2045. Executive Order N-79-20 builds upon the CARB Advanced Clean Trucks regulation, which was adopted by CARB in July 2020.

SBX1 2

Signed into law in April 2011, SBX1 2, requires one-third of the State's electricity to come from renewable sources. The legislation increases California's current 20 percent renewables portfolio standard target in 2010 to a 33 percent renewables portfolio standard by December 31, 2020.

[22] California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: https://codes.iccsafe.org/content/CAGBC2022P1.

[23] https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes

Senate Bill 350

Signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

Energy Sector and CEQA Guidelines Appendix F

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the state. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The 2016 update to the Energy Efficiency Standards for Residential and Nonresidential Buildings focuses on several key areas to improve the energy efficiency of renovations and addition to existing buildings as well as newly constructed buildings and renovations and additions to existing buildings. The major efficiency improvements to the residential Standards involve improvements for attics, walls, water heating, and lighting, whereas the major efficiency improvements to the nonresidential Standards include alignment with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards. Furthermore, the 2016 update requires that enforcement agencies determine compliance with CCR, Title 24, Part 6 before issuing building permits for any construction.[24]

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The purpose of the CALGreen Code is to "improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices in the following categories: (1) Planning and design; (2) Energy efficiency; (3) Water efficiency and conservation; (4) Material conservation and resource efficiency; and (5) Environmental air quality."25 As of January 1, 2011, the CALGreen Code is mandatory for all new buildings constructed in the state. The CALGreen Code establishes mandatory measures for new residential and non-residential buildings. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and nonresidential uses; the new measures took effect on January 1, 2023.

Regional – South Coast Air Quality Management District

The project is within the Salton Sea portion of the South Coast Air Basin, which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

SCAQMD Regulation XXVII, Climate Change

SCAQMD Regulation XXVII currently includes three rules:

[24] California Energy Commission, 2016 Building Energy Efficiency Standards, June 2015, http://www.energy.ca.gov/2015publications/CEC-400-2015-037/CEC-400-2015-037-CMF.pdf

[25] California Building Standards Commission, 2010 California Green Building Standards Code, (2010).

- The purpose of Rule 2700 is to define terms and post global warming potentials.
- The purpose of Rule 2701, SoCal Climate Solutions Exchange, is to establish a voluntary program to encourage, quantify, and certify voluntary, high quality certified greenhouse gas emission reductions in the SCAQMD.
- Rule 2702, Greenhouse Gas Reduction Program, was adopted on February 6, 2009. The purpose of this rule is to create a Greenhouse Gas Reduction Program for greenhouse gas emission reductions in the SCAQMD. The SCAQMD will fund projects through contracts in response to requests for proposals or purchase reductions from other parties.

A variety of agencies have developed greenhouse gas emission thresholds and/or have made recommendations for how to identify a threshold. However, the thresholds for projects in the jurisdiction of the SCAQMD remain in flux. The California Air Pollution Control Officers Association explored a variety of threshold approaches, but did not recommend one approach (2008). The ARB recommended approaches for setting interim significance thresholds (California Air Resources Board 2008b), in which a draft industrial project threshold suggests that non-transportation related emissions under 7,000 $MTCO_2e$ per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The SCAQMD is in the process of developing thresholds, as discussed below.

SCAQMD Threshold Development

On December 5, 2008, the SCAQMD Governing Board adopted an interim greenhouse gas significance threshold for stationary sources, rules, and plans where the SCAQMD is lead agency (SCAQMD permit threshold). The SCAQMD permit threshold consists of five tiers. However, the SCAQMD is not the lead agency for this project. Therefore, the five permit threshold tiers do not apply to the proposed project.

The SCAQMD is in the process of preparing recommended significance thresholds for greenhouse gases for local lead agency consideration ("SCAQMD draft local agency threshold"); however, the SCAQMD Board has not approved the thresholds as of the date of the Notice of Preparation. The current draft thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a greenhouse gas reduction plan. If a project is consistent with a qualifying local greenhouse gas reduction plan, it does not have significant greenhouse gas emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to a project's operational emissions. If a project's emissions are under one of the following screening thresholds, then the project is less than significant:
    - All land use types: 3,000 $MTCO_2e$ per year
    - Based on land use type: residential: 3,500 $MTCO_2e$ per year; commercial: 1,400 $MTCO_2e$ per year; or mixed use: 3,000 $MTCO_2e$ per year.
    - Based on land type: Industrial (where SCAQMD is the lead agency), 10,000 $MTCO_2e$ per year.
- Tier 4 has the following options:
    - Option 1: Reduce emissions from business as usual (BAU) by a certain percentage; this percentage is currently undefined.
    - Option 2: Early implementation of applicable AB 32 Scoping Plan measures.
    - Option 3, 2020 target for service populations (SP), which includes residents and employees: 4.8 $MTCO_2e$/SP/year for projects and 6.6 $MTCO_2e$/SP/year for plans;
    - Option 3, 2035 target: 3.0 $MTCO_2e$/SP/year for projects and 4.1 $MTCO_2e$/SP/year for plans.
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft threshold uses the Executive Order S-3-05 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide efforts to cap carbon dioxide concentrations at 450 ppm, thus stabilizing global climate. Specifically, the Tier 3 screening level for stationary sources is based on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to a CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact report, which includes analyzing feasible alternatives and imposing feasible mitigation measures. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent emission capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for slightly less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/year). In addition, these small projects may be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory. Finally, these small sources are already subject to BACT for criteria pollutants and are more likely to be single-permit facilities, so they are more likely to have few opportunities readily available to reduce GHG emissions from other parts of their facility.

SCAQMD Working Group

Since neither the CARB nor the OPR has developed GHG emissions threshold, the SCAQMD formed a Working Group to develop significance thresholds related to GHG emissions. At the September 28, 2010 Working Group meeting, the SCAQMD released its most current version of the draft GHG emissions thresholds, which recommends a tiered approach that provides a quantitative annual threshold of 10,000 MTCO2e for industrial uses.

In order to assist local agencies with direction on GHG emissions, the SCAQMD organized a working group and adopted Rules 2700, 2701, 2702, and 3002 which are described below.

SCAQMD Rules 2700 and 2701

The SCAQMD adopted Rules 2700 and 2701 on December 5, 2008, which establishes the administrative structure for a voluntary program designed to quantify GHG emission reductions. Rule 2700 establishes definitions for the various terms used in Regulation XXVII – Global Climate Change. Rule 2701 provides specific protocols for private parties to follow to generate certified GHG emission reductions for projects within the district. Approved protocols include forest projects, urban tree planting, and manure management. The SCAQMD is currently developing additional protocols for other reduction measures. For a GHG emission reduction project to qualify, it must be verified and certified by the SCAQMD Executive Officer, who has 60 days to approve or deny the Plan to reduce GHG emissions. Upon approval of the Plan, the Executive Officer issues required to issue a certified receipt of the GHG emission reductions within 90 days.

SCAQMD Rule 2702

The SCAQMD adopted Rule 2702 on February 6, 2009, which establishes a voluntary air quality investment program from which SCAQMD can collect funds from parties that desire certified GHG emission reductions, pool those funds, and use them to purchase or fund GHG emission reduction projects within two years, unless extended by the Governing Board. Priority will be given to projects that result in co-benefit emission reductions of GHG emissions and criteria or toxic air pollutants within environmental justice areas. Further, this voluntary program may compete with the cap-and-trade program identified for implementation in CARB's Scoping Plan, or a Federal cap and trade program.

SCAQMD Rule 3002

The SCAQMD amended Rule 3002 on November 5, 2010 to include facilities that emit greater than 100,000 tons per year of CO_2e are required to apply for a Title V permit by July 1, 2011. A Title V permit is for facilities that are considered major sources of emissions.

Local – City of Rancho Mirage

The City of Rancho Mirage does not currently have a Climate Action Plan; however, the City's Sustainability Plan and Energy Action Plan were both adopted in March of 2013. The City's Sustainability Plan was created as a framework for the development and implementation of policies and programs to reduce the City's GHG emissions. The Plan includes 82 measures to be implemented over the course of an eight-year period, lasting until 2020, in order to achieve their emission reduction goals. The Plan defines the City's goal of complying with statewide mandates to reduce GHG emissions. Through the City's consider actions the City anticipates the following outcomes:

- Increase energy efficiency in local government operation and in community activities;
- Create new jobs in the community associated with smart energy management;
- Save money now being spent for energy and explore the establishment of a revolving fund whereby energy savings will be available for municipal and community programs to enhance energy efficiency and continue to reduce GHG emissions;
- Maintain or enhance the comfortable desert lifestyle of residents and visitors alike; and
- Bring the CVAG jurisdictions together for effective regional sustainability and climate action planning

Further, the Energy Action Plan focuses on ways the City can reduce costs at the same time as enhancing energy efficiency. The Energy Action plan included a City goal of a 10 percent reduction in energy use from 2005 baseline use levels by 2015.

SIGNIFICANCE THRESHOLDS

Appendix G of State CEQA Guidelines

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

- The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
- The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions[26].

Thresholds of Significance for this Project

To determine whether the project's GHG emissions are significant, this analysis uses the SCAQMD screening threshold of 3,000 $MTCO_2e$ per year for all land uses.

[26] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

METHODOLOGY

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. The following provides the methodology used to calculate the project-related GHG emissions and the project impacts.

CalEEMod Version 2022.1.1.20 was used to calculate the GHG emissions from the proposed project. The CalEEMod Output for year 2026 is available in Appendix B. Each source of GHG emissions is described in greater detail below.

Area Sources

Area sources include emissions from consumer products, landscape equipment and architectural coatings. No changes were made to the default area source emissions.

Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. No changes were made to the default energy usage parameters.

Mobile Sources

Mobile sources include emissions from the additional vehicle miles generated from the proposed project. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the ITE Trip Generation Manual 11th Edition (2021) into the CalEEMod Model. The program then applies the emission factors for each trip which is provided by the EMFAC2021 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis. See Section 2 for details.

Waste

Waste includes the GHG emissions generated from the processing of waste from the proposed project as well as the GHG emissions from the waste once it is interred into a landfill. No changes were made to the default waste parameters.

Water

Water includes the water used for the interior of the building as well as for landscaping and is based on the GHG emissions associated with the energy used to transport and filter the water. No changes were made to CalEEMod default values for waste generated.

Construction

The construction-related GHG emissions were also included in the analysis and were based on a 30-year amortization rate as recommended in the SCAQMD GHG Working Group meeting on November 19, 2009. The construction-related GHG emissions were calculated by CalEEMod and in the manner detailed above in Section 2.

PROJECT GREENHOUSE GAS EMISSIONS

The GHG emissions have been calculated based on the parameters described above. A summary of the results is shown below in Table 11 and the CalEEMod Model run for the proposed project is provided in Appendix B. Table 11 shows that the total for the proposed project's emissions (without credit for any reductions from sustainable design, and/or regulatory requirements) would be 216.3 MTCO2e per year. According to the

thresholds of significance established above, a cumulative global climate change impact would occur if the GHG emissions created from the on-going operations of the proposed project would exceed the SCAQMD draft threshold of 3,000 $MTCO_2e$ per year for all land uses. Therefore, as emissions do not exceed 3,000 MTCO2e per year, operation of the proposed project would not create a significant cumulative impact to global climate change.

Table 11
Project-Related Greenhouse Gas Emissions

Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Maximum Annual Operations	0.85	200.00	201.00	0.09	0.01	206.00
Construction[1]	0.00	10.27	10.27	0.00	0.00	10.30
Total Emissions	0.85	210.27	211.27	0.09	0.01	216.30
SCAQMD Draft Screening Threshold						3,000
Exceeds Threshold?						No

Notes:

Source: CalEEMod Version 2022.1.1.20 for Opening Year 2026.

(1) Construction GHG emissions CO2e based on a 30-year amortization rate.

CONSISTENCY WITH APPLICABLE GREENHOUSE GAS REDUCTION PLANS AND POLICIES

The proposed project could have the potential to conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. As stated previously, the City of Rancho Mirage does not currently have a Climate Action Plan; however, the City's Sustainability Plan and Energy Action Plan were both adopted in March of 2013.

SB-32

As stated previously, the SCAQMD's tier 3 thresholds used Executive Order S-3-05 goal as the basis for deriving the screening level. The California Governor issued Executive Order S-3-05, GHG Emission, in June 2005, which established the following reduction targets:

- 2010: Reduce greenhouse gas emissions to 2000 levels
- 2020: Reduce greenhouse gas emissions to 1990 levels
- 2050: Reduce greenhouse gas emissions to 80 percent below 1990 levels.

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which was phased in starting in 2012.

Therefore, as the project's emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with the goals of AB 32 and the City of Rancho Mirage's Sustainability Plan and Energy Action Plan. Additionally, as the project meets the current interim emissions targets/thresholds established by SCAQMD, the project would also be on track to meet the reduction target of 40 percent below 1990 levels by 2030 mandated by SB-32. Furthermore, the majority of the post 2020 reductions in GHG emissions are addressed via regulatory requirements at the State level and the project will be required to comply with these regulations as they come into effect.

At a level of 216.3 MTCO2e per year, the project's GHG emissions do not exceed the SCAQMD draft threshold of 3,000 $MTCO_2e$ per year and is in compliance with the goals of the City of Rancho Mirage's Sustainability Plan and Energy Action Plan, AB-32 and SB-32.

Scoping Plan

Emission reductions in California alone would not be able to stabilize the concentration of greenhouse gases in the earth's atmosphere. However, California's actions set an example and drive progress towards a reduction in greenhouse gases elsewhere. If other states and countries were to follow California's emission reduction targets, this could avoid medium or higher ranges of global temperature increases. Thus, severe consequences of climate change could also be avoided.

The CARB Board approved a Climate Change Scoping Plan in December 2008. The Scoping Plan outlines the State's strategy to achieve the 2020 greenhouse gas emissions limit. The Scoping Plan "proposes a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (California Air Resources Board 2008). The measures in the Scoping Plan have been in place since 2012.

This Scoping Plan calls for an "ambitious but achievable" reduction in California's greenhouse gas emissions, cutting approximately 30 percent from business-as-usual emission levels projected for 2020, or about 10 percent from today's levels. On a per-capita basis, that means reducing annual emissions of 14 tons of carbon dioxide for every man, woman and child in California down to about 10 tons per person by 2020.

In May 2014, CARB released its *First Update to the Climate Change Scoping Plan* (CARB 2014). This *Update* identifies the next steps for California's leadership on climate change. While California continues on its path to meet the near-term 2020 greenhouse gas limit, it must also set a clear path toward long-term, deep GHG emission reductions. This report highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050. CARB's First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050," and many of the emission reduction strategies recommended by CARB would serve to reduce the Project's post-2020 emissions level to the extent required by applicable by law.

In November 2017, CARB release the 2017 Scoping Plan. This Scoping Plan incorporates, coordinates, and leverages many existing and ongoing efforts and identifies new policies and actions to accomplish the State's climate goals, and includes a description of a suite of specific actions to meet the State's 2030 GHG limit. In addition, Chapter 4 of the Scoping Plan provides a broader description of the many actions and proposals being explored across the sectors, including the natural resources sector, to achieve the State's mid and long-term climate goals.

Guided by legislative direction, the actions identified in the 2017 Scoping Plan reduce overall GHG emissions in California and deliver policy signals that will continue to drive investment and certainty in a low carbon economy. The 2017 Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Plan includes policies to require direct GHG reductions at some of the State's largest stationary sources and mobile sources. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and Trade Program, which constrains and reduces emissions at covered sources.

Independent studies confirm CARB's determination that the state's existing and proposed regulatory framework will put the state on a pathway to reduce its GHG emissions level to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050 if additional appropriate reduction measures are adopted.[27] Even though these studies did not provide an exact regulatory and technological roadmap to achieve the 2030 and 2050 goals, they demonstrated that various combinations of policies could allow the statewide emissions level to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the studies would allow the state to meet the 2050 target.

In November of 2022, the CARB released the 2022 Scoping Plan. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by Assembly Bill 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

[27] Energy and Environmental Economics (E3). "Summary of the California State Agencies' PATHWAYS Project: Long-term Greenhouse Gas Reduction Scenarios" (April 2015); Greenblatt, Jeffrey, Energy Policy, "Modeling California Impacts on Greenhouse Gas Emissions" (Vol. 78, pp. 158–172). The California Air Resources Board, California Energy Commission, California Public Utilities Commission, and the California Independent System Operator engaged E3 to evaluate the feasibility and cost of a range of potential 2030 targets along the way to the state's goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. With input from the agencies, E3 developed scenarios that explore the potential pace at which emission reductions can be achieved, as well as the mix of technologies and practices deployed. E3 conducted the analysis using its California PATHWAYS model. Enhanced specifically for this study, the model encompasses the entire California economy with detailed representations of the buildings, industry, transportation and electricity sectors. https://www.ethree.com/wp-content/uploads/2017/02/E3_Project_Overview_20150406.pdf

As the latest, 2022 Scoping Plan builds upon previous versions, project consistency with applicable strategies of the 2008, 2017, and 2022 Plan are assessed in Table 12. As shown in Table 12, the project is consistent with the applicable strategies within the Scoping Plan.

Furthermore. at a level of 216.3 $MTCO_2e$ per year, the project's GHG emissions would be in compliance with the City of Rancho Mirage's Sustainability Plan and Energy Action Plan, AB-32, SB-32, and the CARB Scoping Plan. Furthermore, the project will comply with applicable Green Building Standards and City of Rancho Mirage's policies regarding sustainability (as dictated by the City's General Plan). Impacts are considered to be less than significant.

Table 12 (1 of 2)
Project Consistency with CARB Scoping Plan Policies and Meaures

2008 Scoping Plan Measures to Reduce Greenhouse Gas Emissions	Project Compliance with Measure
California Light-Duty Vehicle Greenhouse Gas Standards – Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Energy Efficiency – Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	No Conflict. The project will be compliant with the current Title 24 standards.
Low Carbon Fuel Standard – Develop and adopt the Low Carbon Fuel Standard.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Vehicle Efficiency Measures – Implement light-duty vehicle efficiency measures.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Medium/Heavy-Duty Vehicles – Adopt medium and heavy-duty vehicle efficiency measures.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Green Building Strategy – Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	No Conflict. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.
High Global Warming Potential Gases – Adopt measures to reduce high global warming potential gases.	No Conflict. CARB identified five measures that reduce HFC emissions from vehicular and commercial refrigeration systems; vehicles that access the project (that are required to comply with the measures) will comply with the strategy.
Recycling and Waste – Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	No Conflict. The state is currently developing a regulation to reduce methane emissions from municipal solid waste landfills. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply with the 75 percent reduction required per AB 341.
Water – Continue efficiency programs and use cleaner energy sources to move and treat water.	No Conflict. The project will comply with all applicable City ordinances and CALGreen requirements.

2017 Scoping Plan Recommended Actions to Reduce Greenhouse Gas Emissions	Project Compliance with Recommended Action
Implement Mobile Source Strategy: Further increase GHG stringency on all light-duty vehicles beyond existing Advanced Clean Car regulations.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Implement Mobile Source Strategy: At least 1.5 million zero emission and plug-in hybrid light-duty electric vehicles by 2025 and at least 4.2 million zero emission and plug-in hybrid light-duty electric vehicles by 2030.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Implement Mobile Source Strategy: Innovative Clean Transit: Transition to a suite of to-be-determined innovative clean transit options. Assumed 20 percent of new urban buses purchased beginning in 2018 will be zero emission buses with the penetration of zero-emission technology ramped up to 100 percent of new sales in 2030. Also, new natural gas buses, starting in 2018, and diesel buses, starting in 2020, meet the optional heavy-duty low-NOX standard.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.

Table 12 (2 of 2)
Project Consistency with CARB Scoping Plan Policies and Meaures

Implement Mobile Source Strategy: Last Mile Delivery: New regulation that would result in the use of low NOX or cleaner engines and the deployment of increasing numbers of zero-emission trucks primarily for class 3-7 last mile delivery trucks in California. This measure assumes ZEVs comprise 2.5 percent of new Class 3–7 truck sales in local fleets starting in 2020, increasing to 10 percent in 2025 and remaining flat through 2030.	No Conflict. These are CARB enforced standards; vehicles that access the project (that are required to comply with the standards) will comply with the strategy.
Implement SB 350 by 2030: Establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas end uses by 2030.	No Conflict. The project will be compliant with the current Title 24 standards.
By 2019, develop regulations and programs to support organic waste landfill reduction goals in the SLCP and SB 1383.	No Conflict. The project will be required to comply with City programs, such as City's recycling and waste reduction program, which comply, with the 75 percent reduction required by AB 341.

2022 Scoping Plan Priority Key Actions and Recommendations	Project Compliance with Recommended Actions
100 percent of light-duty vehicle sales are ZEVs by 2035.	Not Applicable. This action is in regard to vehicle sales, with an aim to have 100 percent of light-duty vehicle sales be ZEVs by 2035. The proposed project is a residential use and would not interfere with such policymaking.
VMT per capita reduced 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.	No Conflict. The Project screens out of needing a trafic study and, therefore, would not result in an unmitigated impact to VMT. The Project is a residential use in close proximity to existing public transit and existing residential and commercial uses.
All electric appliances in new construction beginning 2026 (residential) and 2029 (commercial).	No Conflict. The California Green Building Standards Code (proposed Part 11, Title 24) was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.
For existing residential buildings, 80 percent of appliance sales are electric by 2030 and 100 percent of appliance sales are electric by 2035 (appliances replaced at end of life). For existing commercial buildings, 80 percent of appliance sales are electric by 2030 and 100 percent of appliance sales are electric by 2045 (appliances replaced at end of life)	Not Applicable. This action is in regard to appliance sales and the proposed project is a residential use and would not interfere with such policymaking. Furthermore, although this action is not necessarily applicable on a project-specific basis, the proposed project is subject to the California Green Building Standards Code (proposed Part 11, Title 24) which was adopted as part of the California Building Standards Code in the CCR. Part 11 establishes voluntary standards, that are mandatory in the 2022 edition of the Code, on planning and design for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.

Notes:
(1) Source: CARB Scoping Plan (2008, 2017, and 2022)

CUMULATIVE GREENHOUSE GAS IMPACTS

Although the project is expected to emit GHGs, the emission of GHGs by a single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHG from more than one project and many sources in the atmosphere that may result in global climate change. Therefore, in the case of global climate change, the proximity of the project to other GHG emission generating activities is not directly relevant to the determination of a cumulative impact because climate change is a global condition. According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective."[28] The resultant consequences of that climate change can cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to state or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change.

The state has mandated a goal of reducing statewide emissions to 1990 levels by 2020, even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, CARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. Currently, the County of Riverside CAP Update's initial screening procedure is to determine if a project will emit 3,000 MTCO2E per year or more. Projects that do not exceed this threshold require no further climate change analysis. Therefore, consistent with CEQA Guidelines Section 15064h(3),[29] the County, as lead agency, has determined that the project's contribution to cumulative GHG emissions and global climate change would be less than significant if the project is consistent with the applicable regulatory plans and policies to reduce GHG emissions.

As discussed in the Consistency With Applicable GHG Reduction Plans and Policies section above, the project would be consistent with the goals and objectives of the City of Rancho Mirage's Sustainability Plan and Energy Action Plan and the CARB Scoping Plan. Thus, given the project's consistency with the City of Rancho Mirage's Sustainability Plan and Energy Action Plan and the CARB Scoping Plan, the project's incremental contribution to GHG emissions and their effects on climate change would not be cumulatively considerable.

[28] Source: California Air Pollution Control Officers Association, CEQA & Climate change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act, (2008).

[29] The State CEQA Guidelines were amended in response to SB 97. In particular, the State CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction program renders a cumulative impact insignificant. Per State CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project will comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions."

4. ENERGY ANALYSIS

EXISTING CONDITIONS

This section provides an overview of the existing energy conditions in the project area and region.

Overview

California's estimated annual energy use as of 2021 included:

- Approximately 277,764 gigawatt hours of electricity;[30]
- Approximately 2,092,612 million cubic feet of natural gas per year;[31] and
- Approximately 23.2 billion gallons of transportation fuel (for the year 2015).[32]

As of 2020, the year of most recent data currently available by the United States Energy Information Administration (EIA), energy use in California by demand sector was:

- Approximately 34 percent transportation;
- Approximately 24.6 percent industrial;
- Approximately 21.8 percent residential; and
- Approximately 19.6 percent commercial.[33]

California's electricity in-state generation system generates approximately 194,127 gigawatt-hours each year. In 2021, California produced approximately 70 percent of the electricity it uses; the rest was imported from the Pacific Northwest (approximately 12 percent) and the U.S. Southwest (approximately 18 percent). Natural gas is the main source for electricity generation at approximately 50.2 percent of the total in-state electric generation system power as shown in Table 13.

A summary of and context for energy consumption and energy demands within the State is presented in "U.S. Energy Information Administration, California State Profile and Energy Estimates, Quick Facts" excerpted below:

- California was the seventh-largest producer of crude oil among the 50 states in 2021, and, as of January 2021, it ranked third in oil refining capacity.
- California is the largest consumer of jet fuel and second-largest consumer of motor gasoline among the 50 states and accounted for fifteen percent of the nation's jet fuel consumption and ten percent of motor gasoline consumption in 2020.
- In 2019, California was the second-largest total energy consumer among the states, but its per capita energy consumption was less than in all other states except Rhode Island, due in part to its mild climate and its energy efficiency programs
- In 2021, California was the nation's top producer of electricity from solar, geothermal, and biomass energy. The state was fourth in the nation in conventional hydroelectric power generation, down from second in 2019, in part because of drought and increased water demand

[30] California Energy Commission. Energy Almanac. Total Electric Generation. [Online] 2021. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation.

[31] Natural Gas Consumption by End Use. U.S. Energy Information Administration. [Online] 2021. https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_SCA_a.htm.

[32] California Energy Commission. Revised Transportation Energy Demand Forecast 2018-2030. [Online] 2021. https://www.energy.ca.gov/data-reports/planning-and-forecasting

[33] U.S. Energy Information Administration. California Energy Consumption by End-Use Sector, 2020. California State Profile Overview.[Online] December 20, 2022 https://www.eia.gov/state/?sid=CA#tabs-2

- In 2021, California was the fourth-largest electricity producer in the nation, but the state was also the nation's second-largest consumer of electricity, and in 2020, it received about 30% of its electricity supply from generating facilities outside of California, including imports from Mexico.[34]

As indicated above, California is one of the nation's leading energy-producing states, and California per capita energy use is among the nation's most efficient. Given the nature of the proposed project, the remainder of this discussion will focus on the three sources of energy that are most relevant to the project—namely, electricity and natural gas for building uses, and transportation fuel for vehicle trips associated with the proposed project.

Electricity

Electricity would be provided to the project by Imperial Irrigation District (IID). IID provides electric power to more than 158,000-plus customers in the Imperial Valley and parts of Riverside and San Diego counties.[35]

Table 14 identifies IID's specific proportional shares of electricity sources in 2021. As shown in Table 14, the 2021 IID Power Mix has renewable energy at 40 percent of the overall energy resources, of which biomass and waste is at 8.8 percent, geothermal is at 12.1 percent, eligible hydroelectric is at 6.9 percent, and solar energy is at 12.3 percent; other energy sources include large hydroelectric at 4.8 percent, natural gas at 35.6 percent, nuclear at 3.5 percent, and unspecified sources at 16.1 percent.

Natural Gas

Natural gas would be provided to the project by Southern California Gas (SoCalGas). The following summary of natural gas resources and service providers, delivery systems, and associated regulation is excerpted from information provided by the California Public Utilities Commission (CPUC).

The CPUC regulates natural gas utility service for approximately 11 million customers that receive natural gas from Pacific Gas and Electric (PG&E), Southern California Gas (SoCalGas), San Diego Gas & Electric (SDG&E), Southwest Gas, and several smaller investor-owned natural gas utilities. The CPUC also regulates independent storage operators Lodi Gas Storage, Wild Goose Storage, Central Valley Storage and Gill Ranch Storage.

The vast majority of California's natural gas customers are residential and small commercial customers, referred to as "core" customers. Larger volume gas customers, like electric generators and industrial customers, are called "noncore" customers. Although very small in number relative to core customers, noncore customers consume about 65% of the natural gas delivered by the state's natural gas utilities, while core customers consume about 35%.

The PUC regulates the California utilities' natural gas rates and natural gas services, including in-state transportation over the utilities' transmission and distribution pipeline systems, storage, procurement, metering and billing.

Most of the natural gas used in California comes from out-of-state natural gas basins. In 2017, for example, California utility customers received 38% of their natural gas supply from basins located in the U.S. Southwest, 27% from Canada, 27% from the U.S. Rocky Mountain area, and 8% from production located in California."[36]

[34] State Profile Overview. [Online] [Cited: March 17, 2022.] https://www.eia.gov/state/?sid=CA#tabs-2

[35] https://www.iid.com/energy/about-iid-energy

[36] California Public Utilities Commission. Natural Gas and California. http://www.cpuc.ca.gov/natural_gas/

Transportation Energy Resources

The project would attract additional vehicle trips with resulting consumption of energy resources, predominantly gasoline and diesel fuel. Gasoline (and other vehicle fuels) are commercially-provided commodities and would be available to the project patrons and employees via commercial outlets.

The most recent data available shows the transportation sector emits 38 percent of the total greenhouse gases in the state and about 84 percent of smog-forming oxides of nitrogen (NOx).[37,38] About 28 percent of total United States energy consumption in 2021 was for transporting people and goods from one place to another. In 2021, petroleum comprised about 77 percent of all transportation energy use, excluding fuel consumed for aviation and most marine vessels.[39] In 2021, about 134.83 billion gallons (or about 3.21 billion barrels) of finished motor gasoline were consumed in the United States, an average of about 369 million gallons (or about 8.8 million barrels) per day.[40]

Regulatory Background

Federal and state agencies regulate energy use and consumption through various means and programs. On the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, the PUC and the California Energy Commissions (CEC) are two agencies with authority over different aspects of energy. Relevant federal and state energy-related laws and plans are summarized below.

Federal Regulations

Corporate Average Fuel Economy (CAFE) Standards

First established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. The U.S. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given for: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[41]

Issued by NHTSA and EPA in March 2020 (published on April 30, 2020 and effective after June 29, 2020), the Safer Affordable Fuel-Efficient Vehicles Rule would maintain the CAFE and CO2 standards applicable in model year 2020 for model years 2021 through 2026. The estimated CAFE and CO2 standards for model year 2020 are 43.7 mpg and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012.[42]

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[37] CARB. California Greenhouse Gas Emissions Inventory – 2022 Edition. https://www.arb.ca.gov/cc/inventory/data/data.htm

[38] CARB. 2016 SIP Emission Projection Data. https://www.arb.ca.gov/app/emsinv/2017/emseic1_query.php?F_DIV=-4&F_YR=2012&F_SEASON=A&SP=SIP105ADJ&F_AREA=CA

[39] US Energy Information Administration. Use of Energy in the United States Explained: Energy Use for Transportation. https://www.eia.gov/energyexplained/?page=us_energy_transportation

[40] https://www.eia.gov/tools/faqs/faq.php?id=23&t=10

[41] https://www.nhtsa.gov/lawsregulations/corporate-average-fuel-economy.

[42] National Highway Traffic Safety Administration (NHTSA) and U.S. Environmental Protection Agency (USEPA), 2018. Federal Register / Vol. 83, No. 165 / Friday, August 24, 2018 / Proposed Rules, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks 2018. Available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/safer-affordable-fuel-efficient-safe-vehicles-final-rule.

Intermodal Surface transportation Efficiency Act of 1991 (ISTEA)

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) promoted the development of inter-modal transportation systems to maximize mobility as well as address national and local interests in air quality and energy. ISTEA contained factors that Metropolitan Planning Organizations (MPOs) were to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, MPOs adopted explicit policies defining the social, economic, energy, and environmental values guiding transportation decisions.

The Transportation Equity Act of the 21st Century (TEA-21)

The Transportation Equity Act for the 21st Century (TEA-21) was signed into law in 1998 and builds upon the initiatives established in the ISTEA legislation, discussed above. TEA-21 authorizes highway, highway safety, transit, and other efficient surface transportation programs. TEA-21 continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of good transportation decisions. TEA-21 also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of Intelligent Transportation Systems, to help improve operations and management of transportation systems and vehicle safety.

State Regulations

Integrated Energy Policy Report (IEPR)

Senate Bill 1389 requires the California Energy Commission (CEC) to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety. The Energy Commission prepares these assessments and associated policy recommendations every two years, with updates in alternate years, as part of the Integrated Energy Policy Report.

The 2019 Integrated Energy Policy Report (2019 IEPR) was adopted February 20, 2020, and continues to work towards improving electricity, natural gas, and transportation fuel energy use in California. The 2019 IEPR focuses on a variety of topics such as decarbonizing buildings, integrating renewables, energy efficiency, energy equity, integrating renewable energy, updates on Southern California electricity reliability, climate adaptation activities for the energy sector, natural gas assessment, transportation energy demand forecast, and the California Energy Demand Forecast.[43]

State of California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

[43] California Energy Commission. Final 2019 Integrated Energy Policy Report. February 20, 2020. https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report

California Building Standards Code (Title 24)

The California Building Standards Code Title 24 was previously discussed in Section 3 of this report.

California Building Energy Efficiency Standards (Title 24, Part 6)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2019 Title 24 standards, which became effective on January 1, 2020. The 2019 Title 24 standards include efficiency improvements to the lighting and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers. For example, window operation is no longer a method allowed to meet ventilation requirements, continuous operation of central forced air system handlers used in central fan integrated ventilation system is not a permissible method of providing the dwelling unit ventilation airflow, and central ventilation systems that serve multiple dwelling units must be balanced to provide ventilation airflow to each dwelling unit. In addition, requirements for kitchen range hoods were also provided in the updated Section 120.1. Ventilation and Indoor Air Quality included both additions and revisions in the 2019 Code. This section now requires nonresidential and hotel/motel buildings to have air filtration systems that use forced air ducts to supply air to occupiable spaces to have air filters. Further, the air filter efficiency must be either MERV 13 or use a particle size efficiency rating specific in the Energy Code AND be equipped with air filters with a minimum 2-inch depth or minimum 1-inch depth if sized according to the equation 120.1-A. If natural ventilation is to be used the space must also use mechanical unless ventilation openings are either permanently open or controlled to stay open during occupied times.

New regulations were also adopted under Section 130.1 Indoor Lighting Controls. These included new exceptions being added for restrooms, the exception for classrooms being removed, as well as exceptions in regard to sunlight provided through skylights and overhangs.

All buildings for which an application for a building permit is submitted on or after January 1, 2020 must follow the 2019 standards. The 2016 residential standards were estimated to be approximately 28 percent more efficient than the 2013 standards, whereas the 2019 residential standards are estimated to be approximately 7 percent more efficient than the 2016 standards. Furthermore, once rooftop solar electricity generation is factored in, 2019 residential standards are estimated to be approximately 53 percent more efficient than the 2016 standards. Under the 2019 standards, nonresidential buildings are estimated to be approximately 30 percent more efficient than the 2016 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

The 2022 Building Energy Efficiency Standards became effective on January 1, 2023. [44] The core focus of the building standards has been efficiency, but the 2019 Energy Code ventured into onsite generation by requiring solar PV on new homes, providing significant GHG savings. The 2022 update builds off this progress with expanded solar standards and the move to onsite energy storage that will help Californians save on utility bills while bolstering the grid. The 2022 Energy Code update focuses on four key areas in new construction of homes and businesses:

- Encouraging electric heat pump technology and use, which consumes less energy and produces fewer emissions than traditional HVACs and water heaters.

[44] California Energy Commission (CEC). 2022. Building Energy Efficiency Standards. https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency.

- Establishing electric-ready requirements when natural gas is installed, which positions owners to use cleaner electric heating, cooking and electric vehicle (EV) charging options whenever they choose to adopt those technologies.
- Expanding solar photovoltaic (PV) system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

The 2022 Energy Code affects homes by establishing energy budgets based on efficient heat pumps for space or water heating to encourage builders to install heat pumps over gas-fueled HVAC units; requiring homes to be electric-ready, with dedicated 240-volt outlets and space (with plumbing for water heaters) so electric appliances can eventually replace installed gas appliances; increasing minimum kitchen ventilation requirements so that fans over cooktops have higher airflow or capture efficiency to better exhaust pollution from gas cooking and improve indoor air quality; and allowing exceptions to existing solar PV standards when roof area is not available (such as for smaller homes). In addition, the effect on businesses includes establishing combined solar PV and battery standards for select businesses with systems being sized to maximize onsite use of solar energy and avoid electricity demand during times when the grid must use gas-powered plants; establishing new efficiency standards for commercial greenhouses (primarily cannabis growing); and improving efficiency standards for building envelope, various internal systems, and grid integration equipment, such as demand-responsive controls to buoy grid stability.[45,46]

California Building Energy Efficiency Standards (Title 24, Part 11)

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2020. The 2019 CALGreen Code includes mandatory measures for non-residential development related to site development; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality.

As previously discussed in Section 3 of this report, the Department of Housing and Community Development (HCD) updated CALGreen through the 2019 Triennial Code Adoption Cycle. HCD modified the best management practices for stormwater pollution prevention adding Section 5.106.2 for projects that disturb one or more acres of land. This section requires projects that disturb one acre or more of land or less than one acre of land but are part of a larger common plan of development or sale must comply with the postconstruction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board. The NPDES permits require postconstruction runoff (post-project hydrology) to match the preconstruction runoff pre-project hydrology) with installation of postconstruction stormwater management measures.

HCD added sections 5.106.4.1.3 and 5.106.4.1.5 in regard to bicycle parking. Section 5.106.4.1.3 requires new buildings with tenant spaces that have 10 or more tenant-occupants, provide secure bicycle parking for 5 percent of the tenant-occupant vehicular parking spaces with a minimum of one bicycle parking facility. In addition, Section 5.106.4.1.5 states that acceptable bicycle parking facility for Sections 5.106.4.1.2 through 5.106.4.1.4 shall be convenient from the street and shall meeting one of the following: (1) covered, lockable enclosures with permanently anchored racks for bicycles; (2) lockable bicycle rooms with permanently anchored racks; or (3) lockable, permanently anchored bicycle lockers.

HCD amended section 5.106.5.3.5 allowing future charging spaces to qualify as designated parking for clean air vehicles.

[45] https://www.lightnowblog.com/2021/08/california-energy-commission-adopts-2022-building-energy-efficiency-standards/

[46] State of California Energy Commission. 2022 Building Energy Efficiency Standards Summary. https://www.energy.ca.gov/sites/default/files/2021-08/CEC_2022_EnergyCodeUpdateSummary_ADA.pdf

HCD updated section 5.303.3.3 in regard to showerhead flow rates. This update reduced the flow rate to 1.8 GPM.

HCD amended section 5.304.1 for outdoor potable water use in landscape areas and repealed sections 5.304.2 and 5.304.3. The update requires nonresidential developments to comply with a local water efficient landscape ordinance or the current California Department of Water Resource's' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent. Some updates were also made in regard to the outdoor potable water use in landscape areas for public schools and community colleges.

HCD updated Section 5.504.5.3 in regard to the use of MERV filters in mechanically ventilated buildings. This update changed the filter use from MERV 8 to MERV 13. MERV 13 filters are to be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.

The 2022 California Green Building Standards Code became effective on January 1, 2023.[47]

In the 2022 Code, HCD amended Section 5.106.5.3 in regard to increasing the EV capable space percentages and adding a new requirement for installed Level 2 DCFC chargers.

HCD under Section 5.106.5.4 added new regulation for electric vehicle charging readiness requirements for new construction of warehouse, grocery stores, and retail stores with planned off-street loading spaces. [48]

Senate Bill 100

Senate Bill 100 (SB 100) requires 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045. SB 100 was adopted September 2018.

The interim thresholds from prior Senate Bills and Executive Orders would also remain in effect. These include Senate Bill 1078 (SB 1078), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. Senate Bill 107 (SB 107) which changed the target date to 2010. Executive Order S-14-08, which was signed on November 2008 and expanded the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed the CARB to adopt regulations by July 31, 2010 to enforce S-14-08. Senate Bill X1-2 codifies the 33 percent renewable energy requirement by 2020.

Senate Bill 350

As previously discussed in Section 3 of this report, Senate Bill 350 (SB 350) was signed into law October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. In addition, SB 350 requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. To help ensure these goals are met and the greenhouse gas emission reductions are realized, large utilities will be required to develop and submit Integrated Resource Plans (IRPs). These IRPs will detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions and ramp up the deployment of clean energy resources.

[47] California Building Standards Commission (CBSC). 2022. California Green Building Standards. Website: https://codes.iccsafe.org/content/CAGBC2022P1.

[48] https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes

Assembly Bill 32

As discussed in Section 3 of this report, in 2006 the California State Legislature adopted Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006. AB 32 requires CARB, to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020 through an enforceable statewide emission cap which will be phased in starting in 2012. Emission reductions shall include carbon sequestration projects that would remove carbon from the atmosphere and best management practices that are technologically feasible and cost effective. Please see Section 43 for further detail on AB 32.

Assembly Bill 1493/Pavley Regulations

As discussed in Section 3 of this report, California Assembly Bill 1493 enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2005, the CARB submitted a "waiver" request to the EPA from a portion of the federal Clean Air Act in order to allow the State to set more stringent tailpipe emission standards for CO_2 and other GHG emissions from passenger vehicles and light duty trucks. On December 19, 2007 the EPA announced that it denied the "waiver" request. On January 21, 2009, CARB submitted a letter to the EPA administrator regarding the State's request to reconsider the waiver denial. The EPA approved the waiver on June 30, 2009.

Executive Order S-1-07/Low Carbon Fuel Standard

As discussed in Section 3 of this report, Executive Order S-1-07 was issued in 2007 and proclaims that the transportation sector is the main source of GHG emissions in the State, since it generates more than 40 percent of the State's GHG emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in the State by at least ten percent by 2020. This Order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

On April 23, 2009 CARB approved the proposed regulation to implement the low carbon fuel standard. The low carbon fuel standard is anticipated to reduce GHG emissions by about 16 MMT per year by 2020. The low carbon fuel standard is designed to provide a framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. The framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. Separate standards are established for gasoline and diesel fuels and the alternative fuels that can replace each. The standards are "back-loaded", with more reductions required in the last five years, than during the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the low carbon fuel standard will be based on a combination of both lower carbon fuels and more efficient vehicles.

Reformulated gasoline mixed with corn-derived ethanol at ten percent by volume and low sulfur diesel fuel represent the baseline fuels. Lower carbon fuels may be ethanol, biodiesel, renewable diesel, or blends of these fuels with gasoline or diesel as appropriate. Compressed natural gas and liquefied natural gas also may be low carbon fuels. Hydrogen and electricity, when used in fuel cells or electric vehicles are also considered as low carbon fuels for the low carbon fuel standard.

<u>California Air Resources Board</u>

CARB's Advanced Clean Cars Program

Closely associated with the Pavley regulations, the Advanced Clean Cars emissions control program was approved by CARB in 2012. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles for model years 2015–2025. The components of the Advanced Clean Cars program include the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and

GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.[49]

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

The Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (Title 13, California Code of Regulations, Division 3, Chapter 10, Section 2435) was adopted to reduce public exposure to diesel particulate matter and other air contaminants by limiting the idling of diesel-fueled commercial motor vehicles. This section applies to diesel-fueled commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds that are or must be licensed for operation on highways. Reducing idling of diesel-fueled commercial motor vehicles reduces the amount of petroleum-based fuel used by the vehicle.

Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen, and other Criteria Pollutants, form In-Use Heavy-Duty Diesel-Fueled Vehicles

The Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles (Title 13, California Code of Regulations, Division 3, Chapter 1, Section 2025) was adopted to reduce emissions of diesel particulate matter, oxides of nitrogen (NO_X) and other criteria pollutants from in-use diesel-fueled vehicles. This regulation is phased, with full implementation by 2023. The regulation aims to reduce emissions by requiring the installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models. The newer emission-controlled models would use petroleum-based fuel in a more efficient manner.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or Senate Bill 375 (SB 375), coordinates land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction mandates established in AB 32.

As previously stated in Section 3 of this report, Senate Bill 375 (SB 375) was adopted September 2008 and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPO) to adopt a sustainable communities strategy (SCS) or alternate planning strategy (APS) that will prescribe land use allocation in that MPOs Regional Transportation Plan (RTP). CARB, in consultation with each MPO, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's sustainable communities strategy or alternate planning strategy for consistency with its assigned targets.

The proposed project is located within the Southern California Association of Governments (SCAG) jurisdiction, which has authority to develop the SCS or APS. For the SCAG region, the targets set by CARB are at eight percent below 2005 per capita GHG emissions levels by 2020 and 19 percent below 2005 per capita GHG emissions levels by 2035. These reduction targets became effective October 2018.

[49] California Air Resources Board, California's Advanced Clean Cars Program, January 18, 2017. www.arb.ca.gov/msprog/acc/acc.htm.

PROJECT ENERGY DEMANDS AND ENERGY EFFICIENCY MEASURES

Evaluation Criteria

In compliance with Appendix G of the State CEQA Guidelines, this report analyzes the project's anticipated energy use to determine if the project would:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

In addition, Appendix F of the State CEQA Guidelines states that the means of achieving the goal of energy conservation includes the following:

- Decreasing overall per capita energy consumption;
- Decreasing reliance on fossil fuels such as coal, natural gas and oil; and
- Increasing reliance on renewable energy sources.

Methodology

Information from the CalEEMod 2022.1.1.20 Output contained in Appendix B, utilized for air quality and greenhouse gas analyses in Sections 2 and 3 of this report, were also utilized for this analysis. The CalEEMod outputs detail project related construction equipment, transportation energy demands, and facility energy demands.

Construction Energy Demands

The construction of the project is anticipated to occur between the beginning of January 2025 and the beginning of February 2026, and be completed in one phase. Staging of construction vehicles and equipment will occur on-site. The approximately thirteen-month schedule is relatively short, and the project site is approximately 4.37 net acres.

Construction Equipment Electricity Usage Estimates

As stated previously, electrical service will be provided by Imperial Irrigation District. The focus within this section is the energy implications of the construction process, specifically the power cost from on-site electricity consumption during construction of the proposed project. Based on the 2021 National Construction Estimator, Richard Pray (2021)[50], the typical power cost per 1,000 square feet of building construction per month is estimated to be $2.37. The project plans to develop the site with nine single-family residential lots, which per CalEEMod defaults would total approximately 17,550 square feet. Based on Table 15, the total power cost of the on-site electricity usage during the construction of the proposed project is estimated to be approximately $540.72. Furthermore, IID's General Service rate is approximately $0.12 per kWh of electricity.[51] As shown in Table 15, the total electricity usage from project construction related activities is estimated to be approximately 4,625 kWh.

[50] Pray, Richard. 2021 National Construction Estimator. Carlsbad: Craftsman Book Company, 2021.

[51] Assumes the project will be under the Schedule D - Residential Service rate under IID. https://www.iid.com/energy/rates-regulations/rates

Construction Equipment Fuel Estimates

Fuel consumed by construction equipment would be the primary energy resource expended over the course of project construction. Fuel consumed by construction equipment was evaluated with the following assumptions:

- Construction schedule of 13 months
- All construction equipment was assumed to run on diesel fuel
- Typical daily use of 8 hours, with some equipment operating from ~6-7 hours
- Aggregate fuel consumption rate for all equipment was estimated at 18.5 hp-hr/gallon (from CARB's 2017 Emissions Factors Tables and fuel consumption rate factors as shown in Table D-21 of the Moyer Guidelines: (https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf).
- Diesel fuel would be the responsibility of the equipment operators/contractors and would be sources within the region.
- Project construction represents a "single-event" for diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources during long term operation.

Using the CalEEMod data input for the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), the project's construction phase would consume electricity and fossil fuels as a single energy demand, that is, once construction is completed their use would cease. CARB's 2017 Emissions Factors Tables show that on average aggregate fuel consumption (gasoline and diesel fuel) would be approximately 18.5 hp-hr-gal. Table 16 shows the results of the analysis of construction equipment.

As presented in Table 16, project construction activities would consume an estimated 30,759 gallons of diesel fuel. As stated previously, project construction would represent a "single-event" diesel fuel demand and would not require on-going or permanent commitment of diesel fuel resources for this purpose.

Construction Worker Fuel Estimates

It is assumed that construction worker trips are from light duty autos (LDA), light duty truck 1 (LDT1), and light duty truck 2 (LDT2) at a mix of 25 percent/50 percent/25 percent, respectively, along area roadways.[52] With respect to estimated VMT, the construction worker trips would generate an estimated 28,433 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.20 model defaults.

Vehicle fuel efficiencies for construction workers were estimated in the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) using information generated using CARB's 2021 EMFAC model. An aggregate fuel efficiency of 26 miles per gallon (mpg) was used to calculate vehicle miles traveled for construction worker trips. Table 17 shows that an estimated 1,069 gallons of fuel would be consumed for construction worker trips.

Construction Vendor/Hauling Fuel Estimates

Tables 18 and 19 show the estimated fuel consumption for vendor and hauling during building construction and grading. With respect to estimated VMT, the vendor and hauling trips would generate an estimated 2,512 VMT. Data regarding project related construction worker trips were based on CalEEMod 2022.1.1.20 model defaults.

For the architectural coatings it is assumed that the contractors would be responsible for bringing coatings and equipment with them in their light duty vehicles. Therefore, vendors delivering construction material or

[52] CalEEMod User's Guide Appendix C (April 2022) states that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

hauling debris from the site during building construction would use medium to heavy duty vehicles with an average fuel consumption of 7.87 mpg for medium heavy-duty trucks and 6.15 mpg for heavy heavy-duty trucks (see Appendix B for details).[53] Tables 18 and 19 show that an estimated 364 gallons of fuel would be consumed for vendor and hauling trips.

Construction Energy Efficiency/Conservation Measures

Construction equipment used over the approximately thirteen-month construction phase would conform to CARB regulations and California emissions standards and is evidence of related fuel efficiencies. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities; or equipment that would not conform to current emissions standards (and related fuel efficiencies). Equipment employed in construction of the project would therefore not result in inefficient wasteful, or unnecessary consumption of fuel.

The project would utilize construction contractors which practice compliance with applicable CARB regulation regarding retrofitting, repowering, or replacement of diesel off-road construction equipment. Additionally, CARB has adopted the Airborne Toxic Control Measure to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel particulate matter and other Toxic Air Contaminants. Compliance with these measures would result in a more efficient use of construction-related energy and would minimize or eliminate wasteful or unnecessary consumption of energy. Idling restrictions and the use of newer engines and equipment would result in less fuel combustion and energy consumption.

Additionally, as required by California Code of Regulations Title 13, Motor Vehicles, section 2449(d)(3) Idling, limits idling times of construction vehicles to no more than five minutes, thereby minimizing or eliminating unnecessary and wasteful consumption of fuel due to unproductive idling of construction equipment. Enforcement of idling limitations is realized through periodic site inspections conducted by City building officials, and/or in response to citizen complaints.

Therefore, as the project's construction is required to comply with CARB regulations and does not include the need of construction processes that would require the use of equipment that is more energy efficient, the proposed project annual construction related fuel consumption would not be considered significant.

Operational Energy Demands

Energy consumption in support of or related to project operations would include transportation energy demands (energy consumed by employee and patron vehicles accessing the project site) and facilities energy demands (energy consumed by building operations and site maintenance activities).

Transportation Fuel Consumption

Using the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report), it is assumed that an average trip for autos was assumed to be 8.46 miles and light, medium and 3- 4-axle trucks were assumed to travel an average of 28.25 miles.[54] As the project includes the development of the site with residential uses, which are frequently utilized on weekends, and in order to present a worst-case scenario, it was assumed that vehicles would operate 365 days per year. Table 20 shows the estimated annual fuel consumption for all classes of vehicles from autos to heavy-heavy trucks.[55]

[53] CalEEMod User's Guide Appendix C (April 2022) states that vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT) and that hauling and onsite truck trips are made by a fleet consisting of 100 percent HHDT.

[54] CalEEMod default distance for H-W (home-work) is 28.25 miles; 8.46 miles for H-S (home-shop); and 7.47 miles for H-O (home-other).

[55] Average fuel economy based on aggregate mileage calculated in EMFAC 2021 for opening year (2026). See Appendix B for EMFAC output.

The proposed project would generate approximately 85 trips per weekday.[56] The vehicle fleet mix was used from the CalEEMod output. Table 20 shows that an estimated 21,638 gallons of fuel would be consumed per year for the operation of the proposed project.

As shown in the trip generation provided by ITE, the trip generation generated by the proposed project is consistent with other similar residential uses of similar scale and configuration as reflected respectively in either the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021) and/or surveys, etc. That is, the proposed project does not propose uses or operations that would inherently result in excessive and wasteful vehicle trips and VMT, nor associated excess and wasteful vehicle energy consumption. Furthermore, the state of California consumed approximately 4.2 billion gallons of diesel and 15.1 billion gallons of gasoline in 2015.[57,58] Therefore, the increase in fuel consumption from the proposed project is insignificant in comparison to the State's demand. Therefore, project transportation energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Facility Energy Demands (Electricity and Natural Gas)

Building operation and site maintenance (including landscape maintenance) would result in the consumption of electricity (provided by Imperial Irrigation District) and natural gas (provided by Southern California Gas Company). The annual natural gas and electricity demands were provided per the CalEEMod output from the air quality and greenhouse gas analyses (Sections 2 and 3 of this report) and are provided in Table 21.

As shown in Table 21, the estimated electricity demand for the proposed project is approximately 84,053 kWh per year. In 2022, the residential sector of the County of Riverside consumed approximately 9,061 million kWh of electricity.[59] In addition, the estimated natural gas consumption for the proposed project is approximately 320,079 kBTU per year. In 2022, the residential sector of the County of Riverside consumed approximately 284 million therms of gas.[60,61] Therefore, the increase in both electricity and natural gas demand from the proposed project is insignificant compared to the County's 2022 residential a sector demand.

Energy use in buildings is divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as in plug-in appliances. In California, the California Building Standards Code Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in" energy use can be further subdivided by specific end-use (refrigeration, cooking, appliances, etc.). The proposed project would be required to comply with Title 24 standards.

Furthermore, the proposed project energy demands in total would be comparable to other residential projects of similar scale and configuration. Therefore, the project facilities energy demands, and energy consumption would not be considered inefficient, wasteful, or otherwise unnecessary.

Renewable Energy and Energy Efficiency Plan Consistency

Regarding federal transportation regulations, the project site is located in an already developed area. Access to/from the project site is from existing roads. These roads are already in place so the project would not

[56] As the proposed project is to screen out from requiring a project specific traffic study, the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual (2021) rates for single-family housing (ITE 210) were utilized to model the proposed project. Per the use of the ITE trip generation rates and as shown in the CalEEMod output provided in Appendix B of this report, the project is anticipated to generate 85 vehicle trips per weekday.

[57] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics

[58] https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/diesel-fuel-data-facts-and-statistics

[59] California Energy Commission, Electricity Consumption by County. https://ecdms.energy.ca.gov/elecbycounty.aspx

[60] California Energy Commission, Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx

[61] 1 kBTU = 1,000 BTU and 1 therm = 100,000 BTU; therefore, 1 therm = 100 kBTU.

interfere with, nor otherwise obstruct intermodal transportation plans or projects that may be proposed pursuant to the ISTEA because SCAG is not planning for intermodal facilities in the project area.

Regarding the State's Energy Plan and compliance with Title 24 CCR energy efficiency standards, the applicant is required to comply with the California Green Building Standard Code requirements for energy efficient buildings and appliances as well as utility energy efficiency programs implemented by Imperial Irrigation District and Southern California Gas Company.

Regarding Pavley (AB 1493) regulations, an individual project does not have the ability to comply or conflict with these regulations because they are intended for agencies and their adoption of procedures and protocols for reporting and certifying GHG emission reductions from mobile sources. However, the vehicles associated with the proposed project would be required to comply with federal and state fuel efficiency standards.

Regarding the State's Renewable Energy Portfolio Standards, the project would be required to meet or exceed the energy standards established in the California Green Building Standards Code, Title 24, Part 11 (CALGreen). CAL Green Standards require that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials.

As shown in Section 3 above, the proposed project would be consistent with the goals of the City's Sustainability Plan and Energy Action Plan and the CARB Scoping Plan.

CONCLUSIONS

As supported by the preceding analyses, project construction and operations would not result in the inefficient, wasteful or unnecessary consumption of energy. The proposed project does not include any unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities and is a residential project that is not proposing any additional features that would require a larger energy demand than other residential projects of similar scale and configuration. The energy demands of the project are anticipated to be accommodated within the context of available resources and energy delivery systems. The project would therefore not cause or result in the need for additional energy producing or transmission facilities. The project would not engage in wasteful or inefficient uses of energy and aims to achieve energy conservations goals within the State of California. Notwithstanding, the project proposes residential uses and will not have any long-term effects on an energy provider's future energy development or future energy conservation strategies.

Table 13
Total Electricity System Power (California 2021)

Fuel Type	California In-State Generation (GWh)	Percent of California In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	Total Imports (GWh)	Percent of Imports	Total California Energy Mix (GWh)	Total California Power Mix
Coal	303	0.20%	181	7,788	7,969	9.50%	8,272	3.00%
Natural Gas	97,431	50.20%	45	7,880	7,925	9.50%	105,356	37.90%
Oil	37	0.00%	-	-	-	0.00%	37	0.00%
Other (Waste Heat/Petroleum Coke)	382	0.20%	68	15	83	0.10%	465	0.20%
Nuclear	16,477	8.50%	524	8756	9281	11.10%	25,758	9.30%
Large Hydro	12,036	6.20%	12,042	1,578	13,620	16.30%	25,656	9.20%
Unspecified Sources of Power	-	0.00%	8,156	10,731	18,887	22.60%	18,887	6.80%
Renewables	67,461	34.80%	11,555	14,317	25,872	30.90%	93,333	33.60%
Biomass	5,381	2.80%	864	26	890	1.10%	6,271	2.30%
Geothermal	11,116	5.70%	192	1,906	2,098	2.50%	13,214	4.80%
Small Hydro	2,531	1.30%	304	1	304	0.40%	2,835	1.00%
Solar	33,260	17.10%	220	5,979	6,199	7.40%	39,458	14.20%
Wind	15,173	7.80%	9,976	6,405	16,381	19.60%	31,555	11.40%
Total	194,127	100%	32,572	51,064	83,636	100%	277,764	100%

Notes:

(1) Source: California Energy Commission. 2021 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation

Table 14
IID 2021 Power Content Mix

Energy Resources	2021 SCE Power Mix
Eligible Renewable	40.0%
Biomass & Biowaste	*8.8%*
Geothermal	*12.1%*
Eligible Hydroelectric	*6.9%*
Solar	*12.3%*
Wind	*0.0%*
Coal	0.0%
Large Hydroelectric	4.8%
Natural Gas	35.6%
Nuclear	3.5%
Other	0.0%
Unspecified Sources of power*	16.1%
Total	100%

Notes:

(1) https://www.iid.com/energy/renewable-energy/power-content-label

* Unspecified sources of power means electricity from transactions that are not traceable to specific generation sources.

Table 15
Project Construction Power Cost and Electricity Usage

Power Cost (per 1,000 square foot of building per month of construction)	Total Building Size (1,000 Square Foot)[1]	Construction Duration (months)	Total Project Construction Power Cost
$2.37	17.550	13	$540.72

Cost per kWh[2]	Total Project Construction Electricity Usage (kWh)
$0.12	4,625

Notes:

(1) CalEEMod default square footage for the project is 17,550 square feet.

(2) Assumes the project will be under the Schedule D - Residential Service rate under IID. https://www.iid.com/energy/rates-regulations/rates

Table 16
Construction Equipment Fuel Consumption Estimates

Phase	Number of Days	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	HP hrs/day	Total Fuel Consumption (gal diesel fuel)[1]
Demolition	20	Concrete/Industrial Saw	1	8	33	0.73	193	208
	20	Excavators	3	8	36	0.38	328	355
	20	Rubber Tired Dozers	2	8	367	0.4	2,349	2,539
Grading	8	Excavators	1	8	36	0.38	109	47
	8	Graders	1	8	148	0.41	485	210
	8	Rubber Tired Dozers	1	8	367	0.4	1,174	508
	8	Tractors/Loaders/Backhoes	3	8	84	0.37	746	323
Building Construction	230	Cranes	1	7	367	0.29	745	9,262
	230	Forklifts	3	8	82	0.2	394	4,893
	230	Generator Sets	1	8	14	0.74	83	1,030
	230	Tractors/Loaders/Backhoes	3	7	84	0.37	653	8,114
	230	Welders	1	8	46	0.45	166	2,059
Paving	18	Cement and Mortar Mixers	2	6	10	0.56	67	65
	18	Pavers	1	8	81	0.42	272	265
	18	Paving Equipment	2	6	89	0.36	384	374
	18	Rollers	2	6	36	0.38	164	160
	18	Tractors/Loaders/Backhoes	1	8	84	0.37	249	242
Architectural Coating	18	Air Compressors	1	6	37	0.48	107	104
CONSTRUCTION FUEL DEMAND (gallons of diesel fuel)								30,759

Notes:

(1) Using Carl Moyer Guidelines Table D-21 Fuel consumption rate factors (bhp-hr/gal) for engines less than 750 hp. (Source: https://www.arb.ca.gov/msprog/moyer/guidelines/2017gl/2017_gl_appendix_d.pdf)

Table 17
Construction Worker Fuel Consumption Estimates

Phase	Number of Days	Worker Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	15	18.5	5550	26.6	209
Grading	8	15	18.5	2,220	26.6	84
Building Construction	230	3.24	18.5	13,786	26.6	519
Paving	18	20	18.5	6,660	26.6	251
Architectural Coating	18	0.65	18.5	216	26.6	8
Total Construction Worker Fuel Consumption						1,069

Notes:

(1) Assumptions for the worker trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.20 defaults.

(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes that construction work trips are made by a fleet consisting of 25 percent light-duty auto (or passenger car), 50 percent light-duty truck type 1 (LDT1), and 25 percent light duty truck type 2 (LDT2).

Table 18
Construction Vendor Fuel Consumption Estimates (MHD & HHD Trucks)

Phase	Number of Days	Vendor Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	0	10.2	0	7.0	0
Grading	8	0	10.2	0	7.0	0
Building Construction	230	0.96	10.2	2,252	7.0	321
Paving	18	0	10.2	0	7.0	0
Architectural Coating	18	0	10.2	0	7.0	0
Total Construction Vendor Fuel Consumption						321

Notes:

(1) Assumptions for the vendor trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.20 defaults.

(2) Per CalEEMod User's Guide Appendix C (April 2022), CalEEMod assumes vendor trips are made by a fleet consisting of 50 percent medium trucks (MHDT) and 50 percent heavy trucks (HHDT).

Table 19
Construction Hauling Fuel Consumption Estimates (HHD Trucks)

Phase	Number of Days	Hauling Trips/Day	Trip Length (miles)	Vehicle Miles Traveled	Average Vehicle Fuel Economy (mpg)	Estimated Fuel Consumption (gallons)
Demolition	20	0.65	20	260	6.2	42
Grading	8	0	20	0	6.2	0
Building Construction	230	0	20	0	6.2	0
Paving	18	0	20	0	6.2	0
Architectural Coating	18	0	20	0	6.2	0
Total Construction Hauling Fuel Consumption						42

Notes:

(1) Assumptions for the hauling trip length and vehicle miles traveled are consistent with CalEEMod 2022.1.1.20 defaults.

Table 20
Estimated Vehicle Operations Fuel Consumption

Vehicle Type	Vehicle Mix	Number of Vehicles	Average Trip (miles)[1]	Daily VMT	Average Fuel Economy (mpg)[2]	Total Gallons per Day	Total Annual Fuel Consumption (gallons)
Light Auto	Automobile	40	8.46	338	33.51	10.10	3,686
Light Truck	Automobile	3	28.25	85	25.58	3.31	1,209
Light Truck	Automobile	20	28.25	565	25.64	22.04	8,043
Light Heavy Truck	2-Axle Truck	2	28.25	57	16.47	3.43	1,252
Light Heavy Truck 10,000 lbs +	2-Axle Truck	1	28.25	28	15.61	1.81	661
Motorcycle	Automobile	2	8.46	17	41.79	0.40	148
Medium Truck	Automobile	14	8.46	118	21.01	5.64	2,058
Motor Home	--	0	8.46	0	5.78	0.00	0
Medium Heavy Truck	3-Axle Truck	1	28.25	28	8.01	3.53	1,287
Other Bus	--	0	8.46	0	6.29	0.00	0
School Bus	--	0	8.46	0	6.55	0.00	0
Urban Bus	--	0	8.46	0	3.53	0.00	0
Heavy Heavy Truck	4-Axle Truck	2	28.25	57	6.26	9.03	3,294
Total		85	--	1,293	-	59.28	--
Total Annual Fuel Consumption							21,638

Notes:

(1) Based on the size of the site and relative location, trips were assumed to be local rather than regional.

(2) Based on EMFAC2021 emission rates for opening year of 2026.

Table 21
Project Annual Operational Energy Demand Summary

Natural Gas Demand	kBTU/year
Single-Family Residential	320,079
Total	320,079

Electricity Demand	kWh/year
Single-Family Residential	84,053
Total	84,053

Notes:

(1) Taken from the CalEEMod 2022.1.1.20 output (Appendix B of this report).

6. EMISSION REDUCTION MEASURES

CONSTRUCTION MEASURES

Adherence to SCAQMD Rules 403 and 403.1 is required and the project will be required to obtain and prepare a Fugitive Dust Control Plan.

No construction mitigation is required.

OPERATIONAL MEASURES

No operational mitigation is required.

7. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 Climate Change Scoping Plan, a framework for change.

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Appendix B CalEEMod Model Detailed Report and EMFAC Data

APPENDIX A

GLOSSARY

AQMP	Air Quality Management Plan
BACT	Best Available Control Technologies
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CEQA	California Environmental Quality Act
CFCs	Chlorofluorocarbons
CH_4	Methane
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DPM	Diesel particulate matter
EPA	U.S. Environmental Protection Agency
GHG	Greenhouse gas
GWP	Global warming potential
HIDPM	Hazard Index Diesel Particulate Matter
HFCs	Hydrofluorocarbons
IPCC	International Panel on Climate Change
LCFS	Low Carbon Fuel Standard
LST	Localized Significant Thresholds
$MTCO_2e$	Metric tons of carbon dioxide equivalent
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
NAAQS	National Ambient Air Quality Standards
NOx	Nitrogen Oxides
NO_2	Nitrogen dioxide
N_2O	Nitrous oxide
O_3	Ozone
OPR	Governor's Office of Planning and Research
PFCs	Perfluorocarbons
PM	Particle matter
PM10	Particles that are less than 10 micrometers in diameter
PM2.5	Particles that are less than 2.5 micrometers in diameter
PMI	Point of maximum impact
PPM	Parts per million
PPB	Parts per billion
RTIP	Regional Transportation Improvement Plan
RTP	Regional Transportation Plan
SANBAG	San Bernardino Association of Governments
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SSAB	Salton Sea Air Basin
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CALEEMOD MODEL DETAILED REPORT AND EMFAC DATA

19669 TTM38636 Detailed Report

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1.1. Basic Project Information

Data Field	Value
Project Name	19669 TTM38636
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	0.80
Location	33.79543523571104, -116.40397992086233
County	Riverside-Salton Sea
City	Rancho Mirage
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5671
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	9.00	Dwelling Unit	3.38	17,550	105,416	—	29.0	9 residential lots over 3.38 acres.
Other Asphalt Surfaces	0.58	Acre	0.58	0.00	0.00	—	—	Private Street, Lot A, totals 0.58 acres.
Other Non-Asphalt Surfaces	0.40	Acre	0.40	0.00	0.00	—	—	Retention Basins Lots B-D total 0.4 acres.

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.37	1.15	10.5	13.4	0.02	0.43	0.05	0.48	0.40	0.01	0.41	—	2,476	2,476	0.10	0.03	0.25	2,486
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.93	7.73	22.3	23.2	0.04	0.92	2.96	3.68	0.84	1.38	2.05	—	4,072	4,072	0.17	0.05	0.03	4,090
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.09	0.91	8.32	10.1	0.02	0.34	0.12	0.46	0.32	0.04	0.36	—	1,860	1,860	0.07	0.02	0.10	1,868
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.17	1.52	1.85	< 0.005	0.06	0.02	0.08	0.06	0.01	0.07	—	308	308	0.01	< 0.005	0.02	309

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.37	1.15	10.5	13.4	0.02	0.43	0.05	0.48	0.40	0.01	0.41	—	2,476	2,476	0.10	0.03	0.25	2,486
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.93	2.46	22.3	23.2	0.04	0.92	2.96	3.68	0.84	1.38	2.05	—	4,072	4,072	0.17	0.05	0.03	4,090
2026	1.05	7.73	7.20	11.0	0.01	0.28	0.27	0.55	0.26	0.06	0.32	—	1,739	1,739	0.06	0.02	0.02	1,747
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.09	0.91	8.32	10.1	0.02	0.34	0.12	0.46	0.32	0.04	0.36	—	1,860	1,860	0.07	0.02	0.10	1,868
2026	0.03	0.36	0.22	0.33	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	51.2	51.2	< 0.005	< 0.005	0.01	51.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.20	0.17	1.52	1.85	< 0.005	0.06	0.02	0.08	0.06	0.01	0.07	—	308	308	0.01	< 0.005	0.02	309
2026	0.01	0.07	0.04	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.48	8.48	< 0.005	< 0.005	< 0.005	8.52

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.46	0.82	0.63	4.80	0.01	0.02	0.85	0.87	0.02	0.21	0.24	5.13	1,459	1,464	0.57	0.05	3.36	1,496
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.35	0.71	0.66	2.87	0.01	0.02	0.85	0.87	0.02	0.21	0.24	5.13	1,340	1,345	0.57	0.05	0.21	1,374
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.74	0.51	3.45	0.01	0.01	0.83	0.85	0.01	0.21	0.22	5.13	1,210	1,215	0.57	0.05	1.49	1,245
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.07	0.13	0.09	0.63	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	0.85	200	201	0.09	0.01	0.25	206

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.39	0.35	0.41	4.20	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	1,048	1,048	0.03	0.04	3.23	1,065
Area	0.06	0.47	0.14	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	172	172	< 0.005	< 0.005	—	172
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	225	225	0.02	< 0.005	—	226
Water	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Waste	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	0.46	0.82	0.63	4.80	0.01	0.02	0.85	0.87	0.02	0.21	0.24	5.13	1,459	1,464	0.57	0.05	3.36	1,496
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.32	0.29	0.44	2.78	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	931	931	0.04	0.05	0.08	945
Area	0.02	0.42	0.13	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	171	171	< 0.005	< 0.005	—	171
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	225	225	0.02	< 0.005	—	226
Water	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Waste	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	0.35	0.71	0.66	2.87	0.01	0.02	0.85	0.87	0.02	0.21	0.24	5.13	1,340	1,345	0.57	0.05	0.21	1,374
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.33	0.30	0.42	3.16	0.01	0.01	0.83	0.84	0.01	0.21	0.22	—	959	959	0.03	0.04	1.37	974
Area	0.02	0.44	0.01	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	12.4	12.4	< 0.005	< 0.005	—	12.4
Energy	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	225	225	0.02	< 0.005	—	226
Water	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Waste	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	0.37	0.74	0.51	3.45	0.01	0.01	0.83	0.85	0.01	0.21	0.22	5.13	1,210	1,215	0.57	0.05	1.49	1,245
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.05	0.08	0.58	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	159	159	0.01	0.01	0.23	161
Area	< 0.005	0.08	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.05	2.05	< 0.005	< 0.005	—	2.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.3	37.3	< 0.005	< 0.005	—	37.4
Water	—	—	—	—	—	—	—	—	—	—	—	0.12	2.30	2.41	0.01	< 0.005	—	2.80
Waste	—	—	—	—	—	—	—	—	—	—	—	0.73	0.00	0.73	0.07	0.00	—	2.57
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	0.07	0.13	0.09	0.63	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	0.85	200	201	0.09	0.01	0.25	206

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.07	0.06	0.08	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	190	190	0.01	0.01	0.02	192
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.3	44.3	< 0.005	0.01	< 0.005	46.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.54
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	< 0.005	0.42

3.3. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.07	1.74	16.3	17.9	0.03	0.72	—	0.72	0.66	—	0.66	—	2,959	2,959	0.12	0.02	—	2,970
Dust From Material Movement	—	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.39	< 0.005	0.02	—	0.02	0.01	—	0.01	—	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.7	10.7	< 0.005	< 0.005	—	10.8
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.08	0.81	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	190	190	0.01	0.01	0.02	192
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.44	4.44	< 0.005	< 0.005	0.01	4.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.74	0.74	< 0.005	< 0.005	< 0.005	0.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.58	8.22	0.01	0.27	—	0.27	0.25	—	0.25	—	1,511	1,511	0.06	0.01	—	1,516
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.13	1.20	1.50	< 0.005	0.05	—	0.05	0.05	—	0.05	—	250	250	0.01	< 0.005	—	251
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.31	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	48.1	48.1	< 0.005	< 0.005	0.17	48.8
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.4	30.4	< 0.005	< 0.005	0.08	31.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.9	40.9	< 0.005	< 0.005	< 0.005	41.5
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.5	30.5	< 0.005	< 0.005	< 0.005	31.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.05	27.9
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.2	19.2	< 0.005	< 0.005	0.02	20.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.63
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.18	3.18	< 0.005	< 0.005	< 0.005	3.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.71	6.52	8.84	0.01	0.29	—	0.29	0.26	—	0.26	—	1,351	1,351	0.05	0.01	—	1,355
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.13	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.4	26.4	< 0.005	< 0.005	—	26.5
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.38	4.38	< 0.005	< 0.005	—	4.39
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.11	1.08	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	253	253	0.01	0.01	0.03	256

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.29	5.29	< 0.005	< 0.005	0.01	5.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.68	6.23	8.81	0.01	0.26	—	0.26	0.24	—	0.24	—	1,350	1,350	0.05	0.01	—	1,355
Paving	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.02	0.02	0.17	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	37.0	37.0	< 0.005	< 0.005	—	37.1
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.12	6.12	< 0.005	< 0.005	—	6.14
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.10	1.00	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	248	248	< 0.005	0.01	0.02	251
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.25	7.25	< 0.005	< 0.005	0.01	7.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.20	1.20	< 0.005	< 0.005	< 0.005	1.22
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	6.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.09	1.09	< 0.005	< 0.005	—	1.09
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.02	8.02	< 0.005	< 0.005	< 0.005	8.12
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.42	0.42	< 0.005	< 0.005	< 0.005	0.43
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.39	0.35	0.41	4.20	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	1,048	1,048	0.03	0.04	3.23	1,065
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.39	0.35	0.41	4.20	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	1,048	1,048	0.03	0.04	3.23	1,065
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.32	0.29	0.44	2.78	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	931	931	0.04	0.05	0.08	945
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.32	0.29	0.44	2.78	0.01	0.01	0.85	0.85	0.01	0.21	0.22	—	931	931	0.04	0.05	0.08	945
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.06	0.05	0.08	0.58	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	159	159	0.01	0.01	0.23	161
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.06	0.05	0.08	0.58	< 0.005	< 0.005	0.15	0.15	< 0.005	0.04	0.04	—	159	159	0.01	0.01	0.23	161

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	123	123	0.01	< 0.005	—	123
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	123	123	0.01	< 0.005	—	123
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	123	123	0.01	< 0.005	—	123
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	123	123	0.01	< 0.005	—	123

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	20.3	20.3	< 0.005	< 0.005	—	20.4
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	20.3	20.3	< 0.005	< 0.005	—	20.4

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	103	103	0.01	< 0.005	—	103
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	103	103	0.01	< 0.005	—	103
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	103	103	0.01	< 0.005	—	103
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	103	103	0.01	< 0.005	—	103
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	—	17.0
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.0	17.0	< 0.005	< 0.005	—	17.0

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.02	0.01	0.13	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	171	171	< 0.005	< 0.005	—	171

Consumer Products	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.05	0.05	< 0.005	0.51	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.37	1.37	< 0.005	< 0.005	—	1.37
Total	0.06	0.47	0.14	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	172	172	< 0.005	< 0.005	—	172
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.02	0.01	0.13	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	171	171	< 0.005	< 0.005	—	171
Consumer Products	—	0.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.02	0.42	0.13	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	171	171	< 0.005	< 0.005	—	171
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	1.93	1.93	< 0.005	< 0.005	—	1.94
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.11	0.11	< 0.005	< 0.005	—	0.11
Total	< 0.005	0.08	< 0.005	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	2.05	2.05	< 0.005	< 0.005	—	2.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.70	13.9	14.6	0.07	< 0.005	—	16.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.12	2.30	2.41	0.01	< 0.005	—	2.80
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.12	2.30	2.41	0.01	< 0.005	—	2.80

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	4.43	0.00	4.43	0.44	0.00	—	15.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.73	0.00	0.73	0.07	0.00	—	2.57
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.73	0.00	0.73	0.07	0.00	—	2.57

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.13	0.13
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2025	1/29/2025	5.00	20.0	—
Grading	Grading	1/30/2025	2/10/2025	5.00	8.00	—
Building Construction	Building Construction	2/11/2025	12/29/2025	5.00	230	—
Paving	Paving	12/22/2025	1/14/2026	5.00	18.0	—
Architectural Coating	Architectural Coating	1/7/2026	2/01/2026	5.00	18.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Cement and Mortar Mixers	Diesel	Average	2.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	6.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	6.00	36.0	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	0.65	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	3.24	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	0.96	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	0.65	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	35,539	11,846	0.00	0.00	2,561

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	1,095	—
Grading	—	—	8.00	0.00	—
Paving	0.00	0.00	0.00	0.00	1.08

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

Single Family Housing	0.10	0%
Other Asphalt Surfaces	0.58	100%
Other Non-Asphalt Surfaces	0.40	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	84.9	85.3	76.3	30,555	1,193	1,199	1,073	429,430
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—

Wood Fireplaces	0
Gas Fireplaces	8
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	1
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
35538.75	11,846	0.00	0.00	2,561

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	84,053	532	0.0330	0.0040	320,079
Other Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00

Other Non-Asphalt Surfaces	0.00	532	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	366,064	2,417,795
Other Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	8.22	—
Other Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	23.4	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	7.34
AQ-DPM	43.4
Drinking Water	45.4
Lead Risk Housing	1.31
Pesticides	0.00
Toxic Releases	3.08
Traffic	64.6
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	43.3
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	20.9
Cardio-vascular	16.5
Low Birth Weights	20.3
Socioeconomic Factor Indicators	—

Education	25.9
Housing	86.8
Linguistic	7.38
Poverty	21.5
Unemployment	4.23

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.56833055
Employed	15.56525087
Median HI	74.56691903
Education	—
Bachelor's or higher	65.96945977
High school enrollment	100
Preschool enrollment	48.45374054
Transportation	—
Auto Access	37.4566919
Active commuting	25.81804183
Social	—
2-parent households	97.56191454
Voting	86.88566662
Neighborhood	—
Alcohol availability	82.80508148
Park access	2.194276915
Retail density	35.17259079

Supermarket access	45.92583087
Tree canopy	17.8108559
Housing	—
Homeownership	83.62633132
Housing habitability	22.35339407
Low-inc homeowner severe housing cost burden	25.38175286
Low-inc renter severe housing cost burden	6.274862056
Uncrowded housing	70.21686129
Health Outcomes	—
Insured adults	97.45925831
Arthritis	0.0
Asthma ER Admissions	80.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	94.6
Cognitively Disabled	39.7
Physically Disabled	49.3
Heart Attack ER Admissions	64.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0

Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	79.8
Elderly	0.9
English Speaking	70.5
Foreign-born	10.7
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	47.2
Traffic Density	47.5
Traffic Access	23.0
Other Indices	—
Hardship	34.9
Other Decision Support	—
2016 Voting	92.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	7.00
Healthy Places Index Score for Project Location (b)	56.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	4.37 net acre site with 9 residential lots totaling 3.38 acres, retention basins (lots B-D) total 0.4 acres, & private street (lot A) totals 0.58 acres.
Construction: Construction Phases	Construction assumed to begin no earlier than January 2025. Demo of one single-family house ~1,095 sf, but no site prep as site is vacant other than the home. As construction duration is unknown at this time, utilized CalEEMod default number of days per phase, but adjusted dates to account for potential overlap of construction phases. Site anticipated to balance.
Operations: Vehicle Data	Per the ITE rate for single-family housing (ITE 210) the proposed project will have trip generation rates of 9.43 trips per dwelling unit on weekdays, 9.48 trips per dwelling unit on Saturdays, and 8.48 trips per dwelling unit on Sundays.
Operations: Hearths	SCAQMD Rule 445 prohibts the installation of wood burning devices in new developments.

Source: EMFAC2021 (v1.0.1) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumptior	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2025	HHDT	Aggregate	Aggregate	Gasoline	54.83401411	1097.118954	0	0.915660885	915.6608849	2033428.223	3783.739566	12499201.56	**6.15**	**HHDT**
South Coast	2025	HHDT	Aggregate	Aggregate	Diesel	95337.36817	1459640.636	0	1919.938673	1919938.673		11745346.31			
South Coast	2025	HHDT	Aggregate	Aggregate	Electricity	647.565363	8586.113967	125035.0292	0	0		69780.1703			
South Coast	2025	HHDT	Aggregate	Aggregate	Natural Gas	10701.05249	68656.35135	0	112.5738892	112573.8892		680291.3416			
South Coast	2025	LDA	Aggregate	Aggregate	Gasoline	5244723.652	24385315.28	0	7108.358927	7108358.927	7245907.135	210339700.5	233546247.7	**32.23**	**LDA**
South Coast	2025	LDA	Aggregate	Aggregate	Diesel	13504.15254	56096.65324	0	9.832104986	9832.104986		408222.3366			
South Coast	2025	LDA	Aggregate	Aggregate	Electricity	314906.6469	1568075.372	5911352.826	0	0		15311111.74			
South Coast	2025	LDA	Aggregate	Aggregate	Plug-in Hybrid	159860.278	661022.2496	1174382.35	127.7161032	127716.1032		7487213.196			
South Coast	2025	LDT1	Aggregate	Aggregate	Gasoline	483367.514	2127610.282	0	708.9359688	708935.9688	709884.4736	17503198.77	17626287.18	**24.83**	**LDT1**
South Coast	2025	LDT1	Aggregate	Aggregate	Diesel	161.5260868	453.3891137	0	0.127085477	127.0854768		2967.035899			
South Coast	2025	LDT1	Aggregate	Aggregate	Electricity	1505.26458	7236.189381	25889.93818	0	0		67058.04036			
South Coast	2025	LDT1	Aggregate	Aggregate	Plug-in Hybrid	1033.948372	4275.376518	9086.363765	0.821419376	821.4193759		53063.32883			
South Coast	2025	LDT2	Aggregate	Aggregate	Gasoline	2528171.942	11891190.15	0	4341.426391	4341426.391	4373117.135	104543301.5	106927231	**24.45**	**LDT2**
South Coast	2025	LDT2	Aggregate	Aggregate	Diesel	8518.978579	40955.39339	0	11.53683826	11536.83826		366939.3838			
South Coast	2025	LDT2	Aggregate	Aggregate	Electricity	21565.05505	109850.7805	300027.449	0	0		777107.023			
South Coast	2025	LDT2	Aggregate	Aggregate	Plug-in Hybrid	25221.81395	104292.2007	204751.9727	20.15390552	20153.90552		1239883.058			
South Coast	2025	LHDT1	Aggregate	Aggregate	Gasoline	199655.4178	2974568.238	0	565.7929114	565792.9114	785253.6339	7899242.311	12579982.86	**16.02**	**LHDT1**
South Coast	2025	LHDT1	Aggregate	Aggregate	Diesel	107539.0383	1352705.817	0	219.4607225	219460.7225		4531936.528			
South Coast	2025	LHDT1	Aggregate	Aggregate	Electricity	2131.529069	29802.51665	83294.25907	0	0		148804.02			
South Coast	2025	LHDT2	Aggregate	Aggregate	Gasoline	30849.1838	459606.8733	0	93.96299335	93962.99335	208962.5987	1145449.689	3183322.084	**15.23**	**LHDT2**
South Coast	2025	LHDT2	Aggregate	Aggregate	Diesel	48016.98656	603993.2855	0	114.9996053	114999.6053		2001431.485			
South Coast	2025	LHDT2	Aggregate	Aggregate	Electricity	549.452873	7286.296511	20413.74678	0	0		36440.90994			
South Coast	2025	MCY	Aggregate	Aggregate	Gasoline	246317.3152	492634.6304	0	37.82728892	37827.28892	37827.28892	1575969.655	1575969.655	**41.66**	**MCY**
South Coast	2025	MDV	Aggregate	Aggregate	Gasoline	1582911.671	7327873.919	0	3124.528435	3124528.435	3169334.086	61244218.19	63579746.09	**20.06**	**MDV**
South Coast	2025	MDV	Aggregate	Aggregate	Diesel	19966.30161	93386.67778	0	32.96063764	32960.63764		783550.3632			
South Coast	2025	MDV	Aggregate	Aggregate	Electricity	23405.95686	119202.2123	325389.6809	0	0		842798.2408			
South Coast	2025	MDV	Aggregate	Aggregate	Plug-in Hybrid	15515.87163	64158.1292	115605.1765	11.8450132	11845.0132		709179.3041			
South Coast	2025	MH	Aggregate	Aggregate	Gasoline	28222.75742	2823.404652	0	55.89330175	55893.30175	67478.95091	271714.048	388622.5468	**5.76**	**MH**
South Coast	2025	MH	Aggregate	Aggregate	Diesel	11853.97154	1185.397154	0	11.58564916	11585.64916		116908.4988			
South Coast	2025	MHDT	Aggregate	Aggregate	Gasoline	24266.37368	485521.6046	0	246.6220886	246622.0886	803911.5702	1285729.87	6330495.207	**7.87**	**MHDT**
South Coast	2025	MHDT	Aggregate	Aggregate	Diesel	117076.634	1440705.231	0	548.3413637	548341.3637		4914316.485			
South Coast	2025	MHDT	Aggregate	Aggregate	Electricity	1030.710845	13697.48889	58527.95377	0	0		55891.50984			
South Coast	2025	MHDT	Aggregate	Aggregate	Natural Gas	1586.964447	14102.34275	0	8.94811801	8948.11801		74557.34189			
South Coast	2025	OBUS	Aggregate	Aggregate	Gasoline	5130.782804	102656.7023	0	38.98709136	38987.09136	75404.10956	199581.2481	465625.8692	**6.18**	**OBUS**
South Coast	2025	OBUS	Aggregate	Aggregate	Diesel	3078.572652	39272.27543	0	33.03961652	33039.61652		233905.0145			
South Coast	2025	OBUS	Aggregate	Aggregate	Electricity	29.09533983	582.1395594	2258.641236	0	0		2147.933443			
South Coast	2025	OBUS	Aggregate	Aggregate	Natural Gas	505.1478218	4495.815614	0	3.377401677	3377.401677		29991.67319			
South Coast	2025	SBUS	Aggregate	Aggregate	Gasoline	2812.998756	11251.99503	0	13.81627409	13816.27409	41147.02398	123623.802	268314.9981	**6.52**	**SBUS**
South Coast	2025	SBUS	Aggregate	Aggregate	Diesel	3181.542446	46068.73461	0	8.734797087	8734.797087		64276.54474			
South Coast	2025	SBUS	Aggregate	Aggregate	Electricity	47.38132065	537.5923668	1681.228052	0	0		1453.97051			
South Coast	2025	SBUS	Aggregate	Aggregate	Natural Gas	3209.535885	46474.07961	0	18.59595281	18595.95281		78960.68088			
South Coast	2025	UBUS	Aggregate	Aggregate	Gasoline	892.063682	3568.254728	0	13.80114714	13801.14714	198998.2045	96751.77026	697627.2588	**3.51**	**UBUS**
South Coast	2025	UBUS	Aggregate	Aggregate	Diesel	11.19759793	44.79039173	0	0.207460052	207.4600516		1417.05095			
South Coast	2025	UBUS	Aggregate	Aggregate	Electricity	163.9010308	655.6041234	34521.6162	0	0		16501.94536			
South Coast	2025	UBUS	Aggregate	Aggregate	Natural Gas	4881.393278	19525.57311	0	184.9895973	184989.5973		582956.4922			

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: Air Basin
Region: South Coast
Calendar Year: 2026
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Trips	Energy Consumption	Fuel Consumption	Fuel Consumption	Total Fuel Consumption	Total VMT	Total VMT	Miles Per Gallon	Vehicle Class
South Coast	2026	HHDT	Aggregate	Aggregate	Gasoline	45.28727755	906.1078492	0	0.826439263	826.4392634	2040037.147	3515.176047	12762260.29	**6.26**	**HHDT**
South Coast	2026	HHDT	Aggregate	Aggregate	Diesel	97738.13703	1499287.564	0	1924.425077	1924425.077		11935536.65			
South Coast	2026	HHDT	Aggregate	Aggregate	Electricity	1127.803815	15012.08067	218857.8017	0	0		122141.2963			
South Coast	2026	HHDT	Aggregate	Aggregate	Natural Gas	11136.92104	71605.89185	0	114.7856315	114785.6315		701067.1645			
South Coast	2026	LDA	Aggregate	Aggregate	Gasoline	5195643.708	24143840.26	0	6782.676882	6782676.882	6921645.961	207389418.9	231955554.2	**33.51**	**LDA**
South Coast	2026	LDA	Aggregate	Aggregate	Diesel	12287.58157	51140.44532	0	8.767517115	8767.517115		370075.1174			
South Coast	2026	LDA	Aggregate	Aggregate	Electricity	344157.5263	1706165.237	6342137.443	0	0		16426895.48			
South Coast	2026	LDA	Aggregate	Aggregate	Plug-in Hybrid	168809.5326	698027.4173	1240278.612	130.201561	130201.561		7769164.725			
South Coast	2026	LDT1	Aggregate	Aggregate	Gasoline	476323.5206	2097590.987	0	678.0887347	678088.7347	679239.9851	17216273.05	17371977.47	**25.58**	**LDT1**
South Coast	2026	LDT1	Aggregate	Aggregate	Diesel	134.4367276	372.1645155	0	0.103697527	103.6975272		2435.198128			
South Coast	2026	LDT1	Aggregate	Aggregate	Electricity	1851.074177	8991.774052	32640.99575	0	0		84544.08793			
South Coast	2026	LDT1	Aggregate	Aggregate	Plug-in Hybrid	1363.558276	5638.31347	11920.71238	1.047552876	1047.552876		68725.12561			
South Coast	2026	LDT2	Aggregate	Aggregate	Gasoline	2579520.408	12130525.5	0	4213.67897	4213678.97	4247377.404	106163830	108886311.7	**25.64**	**LDT2**
South Coast	2026	LDT2	Aggregate	Aggregate	Diesel	8867.858357	42507.35427	0	11.36067539	11360.67539		377428.6943			
South Coast	2026	LDT2	Aggregate	Aggregate	Electricity	26735.86194	135545.3315	365644.5096	0	0		947063.0678			
South Coast	2026	LDT2	Aggregate	Aggregate	Plug-in Hybrid	29040.30722	120081.6703	234335.4931	22.33775891	22337.75891		1397989.883			
South Coast	2026	LHDT1	Aggregate	Aggregate	Gasoline	199218.1798	2968054.043	0	554.0943882	554094.3882	778318.8766	7895647.304	12817307.83	**16.47**	**LHDT1**
South Coast	2026	LHDT1	Aggregate	Aggregate	Diesel	110824.2702	1394029.902	0	224.2244884	224224.4884		4651442.085			
South Coast	2026	LHDT1	Aggregate	Aggregate	Electricity	4055.383124	56705.54919	151287.7363	0	0		270218.4372			
South Coast	2026	LHDT2	Aggregate	Aggregate	Gasoline	30610.65521	456053.1528	0	91.39194251	91391.94251	209308.2006	1134530.272	3267042.154	**15.61**	**LHDT2**
South Coast	2026	LHDT2	Aggregate	Aggregate	Diesel	49935.33556	628123.7026	0	117.9162581	117916.2581		2066139.273			
South Coast	2026	LHDT2	Aggregate	Aggregate	Electricity	1047.275343	13892.53274	37187.32905	0	0		66372.60862			
South Coast	2026	MCY	Aggregate	Aggregate	Gasoline	250487.6045	500975.209	0	38.18100333	38181.00333	38181.00333	1595492.078	1595492.078	**41.79**	**MCY**
South Coast	2026	MDV	Aggregate	Aggregate	Gasoline	1596136.553	7392706.354	0	3011.039477	3011039.477	3055964.697	61598198.2	64209958.05	**21.01**	**MDV**
South Coast	2026	MDV	Aggregate	Aggregate	Diesel	20066.48661	93545.30034	0	31.64015543	31640.15543		778197.9806			
South Coast	2026	MDV	Aggregate	Aggregate	Electricity	28847.6688	146197.0743	394020.0271	0	0		1020559.056			
South Coast	2026	MDV	Aggregate	Aggregate	Plug-in Hybrid	18049.49416	74634.65834	135075.7859	13.28506472	13285.06472		813002.8095			
South Coast	2026	MH	Aggregate	Aggregate	Gasoline	27278.64846	2728.955991	0	54.52892025	54528.92025	66225.52092	265063.4305	382974.6262	**5.78**	**MH**
South Coast	2026	MH	Aggregate	Aggregate	Diesel	11990.57298	1199.057298	0	11.69660067	11696.60067		117911.1957			
South Coast	2026	MHDT	Aggregate	Aggregate	Gasoline	23709.92089	474388.0972	0	236.9518121	236951.8121	795432.9677	1246845.641	6369185.402	**8.01**	**MHDT**
South Coast	2026	MHDT	Aggregate	Aggregate	Diesel	119147.669	1467301.162	0	549.2177252	549217.7252		4943659.689			
South Coast	2026	MHDT	Aggregate	Aggregate	Electricity	1897.982484	25122.25889	106245.4113	0	0		101446.1358			
South Coast	2026	MHDT	Aggregate	Aggregate	Natural Gas	1676.42244	14874.65576	0	9.263430478	9263.430478		77233.93662			
South Coast	2026	OBUS	Aggregate	Aggregate	Gasoline	4985.01682	99740.21654	0	36.8023149	36802.3149	73013.96337	190323.4224	458958.6555	**6.29**	**OBUS**
South Coast	2026	OBUS	Aggregate	Aggregate	Diesel	3150.254377	40409.07405	0	32.78261169	32782.61169		234257.9808			
South Coast	2026	OBUS	Aggregate	Aggregate	Electricity	48.73252846	975.0404293	3712.22292	0	0		3530.286569			
South Coast	2026	OBUS	Aggregate	Aggregate	Natural Gas	527.7646575	4697.105452	0	3.429036786	3429.036786		30846.96566			
South Coast	2026	SBUS	Aggregate	Aggregate	Gasoline	2859.470681	11437.88272	0	13.96502478	13965.02478	41288.84431	125429.044	270519.1537	**6.55**	**SBUS**
South Coast	2026	SBUS	Aggregate	Aggregate	Diesel	3069.620153	44448.09982	0	8.356963071	8356.963071		61684.67939			
South Coast	2026	SBUS	Aggregate	Aggregate	Electricity	80.42870332	920.4792925	2842.019937	0	0		2457.85405			
South Coast	2026	SBUS	Aggregate	Aggregate	Natural Gas	3324.894418	48144.47117	0	18.96685646	18966.85646		80947.57625			
South Coast	2026	UBUS	Aggregate	Aggregate	Gasoline	893.8375958	3575.350383	0	13.78048566	13780.48566	197989.9042	96943.51406	699028.0473	**3.53**	**UBUS**
South Coast	2026	UBUS	Aggregate	Aggregate	Diesel	11.14254485	44.57017938	0	0.207035957	207.0359572		1412.946963			
South Coast	2026	UBUS	Aggregate	Aggregate	Electricity	188.9556535	755.822614	40048.57494	0	0		19186.0799			
South Coast	2026	UBUS	Aggregate	Aggregate	Natural Gas	4866.60233	19466.40932	0	184.0023825	184002.3825		581485.5063			



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Appendix B General Biological Assessment dated January 18, 2024

NATURAL RESOURCES ASSESSMENT, INC.

General Biological Assessment
Single-family Residential Subdivision
Tentative Tract Map - TTM 23-0001 (TTM38636)
Environmental Assessment – EA 23-0003
APN 685-080-002
Rancho Mirage, California

Prepared for:

72094 Ginger Rogers LLC
c/o Farhad Zomorodi
PO Box 10544
Beverly Hills, CA 90213

Prepared by:

Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, California 92507

January 18, 2024

Project Number: FAZ23-10

3415 Valencia Hill Drive, Riverside, California 92507 Telephone 951 686 4483 Fax 951 686 8418

www.naturalresourcesassessment.com

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1.0 Introduction

72094 Ginger Rogers LLC, contracted with Natural Resources Assessment, Inc. (NRAI) to conduct a biological assessment for a project in the City of Rancho Mirage, California**.** The assessment was needed to fulfill the requirements of the California Environmental Quality Act (CEQA) for project processing.

2.0 Site Location and Project Description

The property is located on the southeast corner of Ginger Rogers Street and Landy Lane in Rancho Mirage (Figures 1 and 2). The project is a 9-lot single-family residential subdivision (Tentative Tract Map 23-0001 [TTM 38636]) on 5.04 gross acres (APN 685-080-002) (Figure 3).

3.0 Methods

3.1 Data Review

NRAI conducted a data search for information on plant and wildlife species known occurrences within the vicinity of the project. This review included biological texts on general and specific biological resources, and those resources considered to be sensitive by various wildlife agencies, local governmental agencies and interest groups. Information sources included but are not limited to the following:

- Information provided by the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) for the project site.
- Data from Calflora, California Native Plant Society (CNPS) Inventory; the California Consortium of Herbaria; the Information, Planning, and Conservation System (IPaC); the Biogeographic Information & Observation System (BIOS); and the California Natural Diversity Data Base (CNDDB).
- U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers (Corps), Santa Ana Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW) regulations on sensitive biological resources and jurisdictional waters.
- Other texts relevant to this area of Riverside County and information from regional experts and previous studies for this area.

NRAI used the information as part of our field survey. Please see Section 6.0 for a complete listing of documents reviewed.

3.2 Field Surveys

Ms. Karen Kirtland of NRAI and Mr. Ricardo Montijo (subcontractor to NRAI) conducted the field survey on 12 October 2023. The field team surveyed on foot following standard survey techniques for biological assessment work, walking transects across the site from north to south and searching for evidence of sensitive resources.

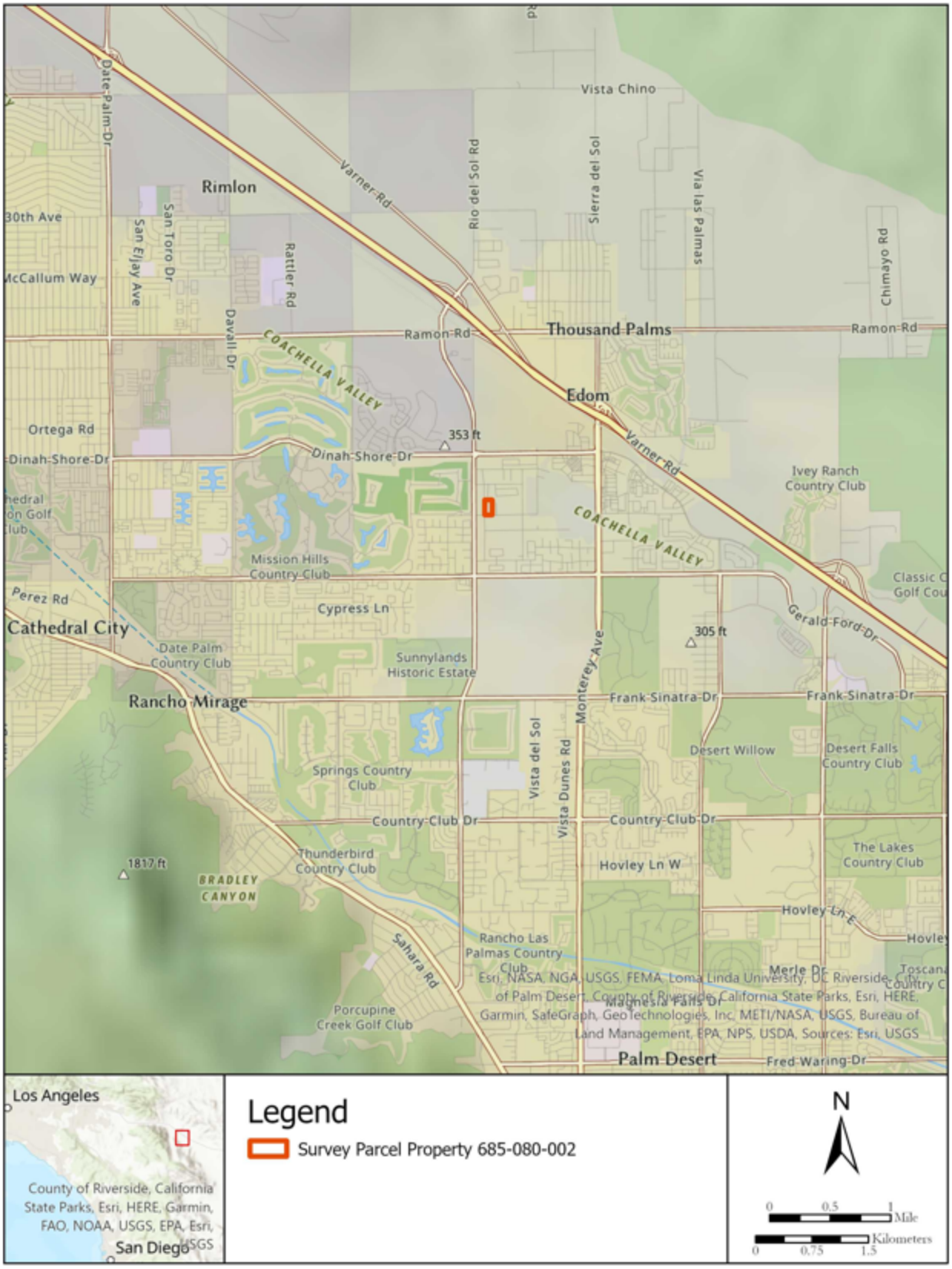


Figure 1. Regional Project Location.

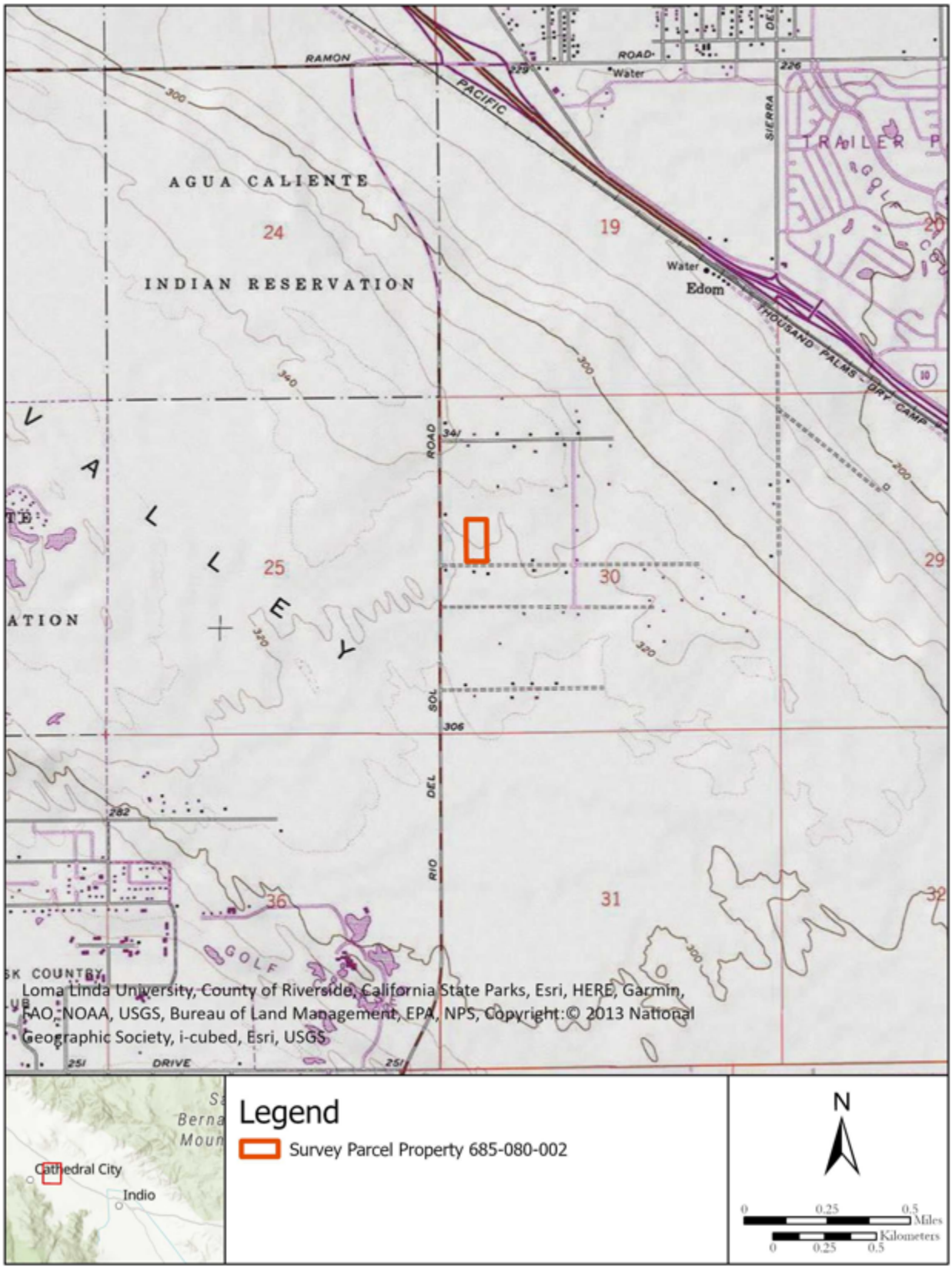


Figure 2. Regional Project Topography.

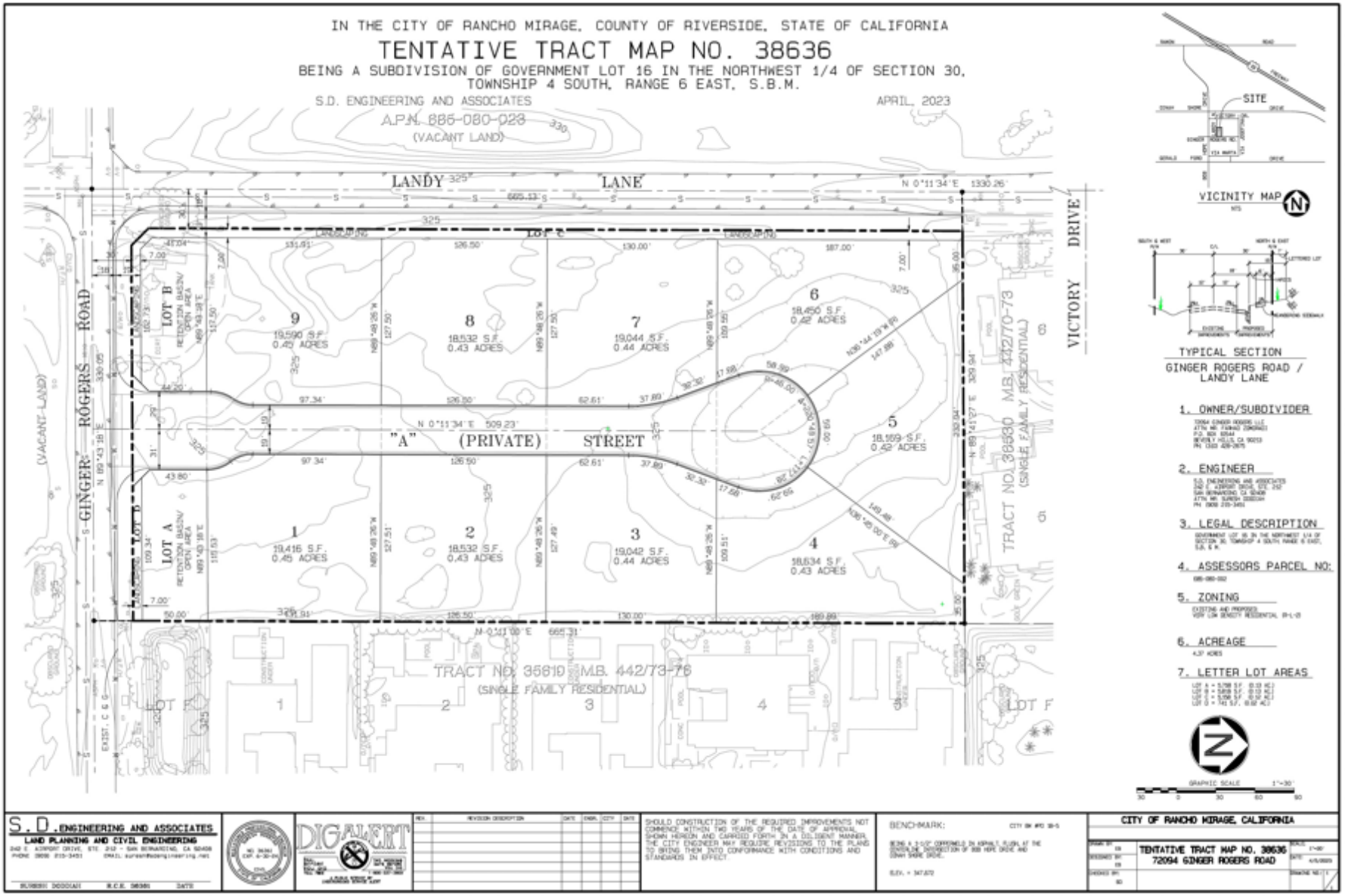


Figure 3. Project Layout

The team took notes of soil conditions, plant cover, species mix, and species sighted. Sign surveyed for included nests, tracks, scat, burrows, skeletal remains, whitewash (bird scat), and visual sightings. Field surveyors used binoculars to aid in the identification of wildlife. All species identified by sight, call or sign (burrows, scat, tracks, etc.) were recorded.

4.0 Results

4.1 Weather, Topography and Soils

The temperature at the beginning of the survey was 76 degrees Fahrenheit. The skies were clear with six mile per hour (mph) winds from the west northwest. At the end of the survey, the temperature was 78 degrees Fahrenheit, with clear skies and six mph winds from the northeast.

The site topography is sandy soils with some minor dune formation (Figure 4, Photos 1 and 2).

There is one soil on site (Figure 5). Myoma fine sand (MaB) is a fine sand that occurs on 0 to 5 percent slopes on alluvial fans. This soil is formed from windy blown sand alluvium. Myoma fine sand is a somewhat excessively drained soil that is non-hydric. It never floods or ponds.

4.2 Disturbances

Disturbances in the survey area include occasional hikers and trash dumping. The trash on site includes windblown material. There is one dwelling on site that was occupied at the time of the survey (Photo 3).

4.3 Plant Communities

The dominant plant community is a very sparse creosote bush scrub, dominated by creosote bush (*Larrea tridentata*) (Photo 3 and 4). Other shrub species include Emory's indigo bush (*Psorothamnus emoryi*) and desert globemallow (*Sphaeralcea ambigua*). Annual flowering species observed include fanleaf crinklemat (*Tiquiila plicata*), Booth's desert primrose (*Eremothera boothii*), desert lantern (*Oenothera deltoides*) and desert needlegrass (*Pallafoxia arida* var. *arida*).

Non-native species included a mix of weedy plant species such as Sahara mustard (*Brassica tournefortii*) and Mediterranean grass (*Schismus barbatus*) found scattered throughout the site. Landscape species such as oleander (*Nerium oleander*) and European olive (*Oleo europea*) grow along the margins of the property and are self-seeded individuals from adjacent development.

A list of plant species observed is provided in Appendix A.

4.4 Wildlife

No amphibians or reptiles were observed during the survey. Bird species were observed during the field surveys included horned lark (*Eremophila alpestris*) and common raven (*Corvus corax*).

No mammal sign was observed except for some small mammal burrows that were not definitive as to species.



Figure 4. Project Site Aerial



Photo 1. Soils on the project site. Looking southwest from the center of the property.



Photo 2. Sandy soils and scrub cover. Looking west toward the San Jacinto Mountains.



Figure 5. Soils.



Photo 3. Occupied residence, southwest corner.



Photo 4. Creosote bush scrub. Looking south from the northern border of the property.



Photo 5. Scrub cover. Looking west from the northeast corner.

4.5 Sensitive Biological Resources

The Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) has already identified the areas of concern in the Coachella Valley and has established the locations and boundaries of these areas. The nearest Conservation Areas to the project are the Thousand Palms Conservation Area to the north and the Santa Rosa and San Jacinto Mountain Conservation Area to the south.

The Thousand Palms Conservation Area was created to protect the following resources (Figure 6):

- Mecca aster (*Xylorhiza cognata*)
- Coachella Valley milkvetch (*Astragalus lentiginosus* var. *coachellae*)
- Coachella Valley fringe-toed lizard (*Uma inornata*)
- Flat-tailed horned lizard (*Phrynosoma mcallii*),
- Burrowing Owl (*Athene cunicularia*)
- Le Conte's thrasher (*Toxostoma lecontei*)
- Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*),
- Palm Springs pocket mouse (*Perognathus longimembris bangsi*),
- Coachella Valley giant sand treader cricket (*Macrobaenetes valgum*)

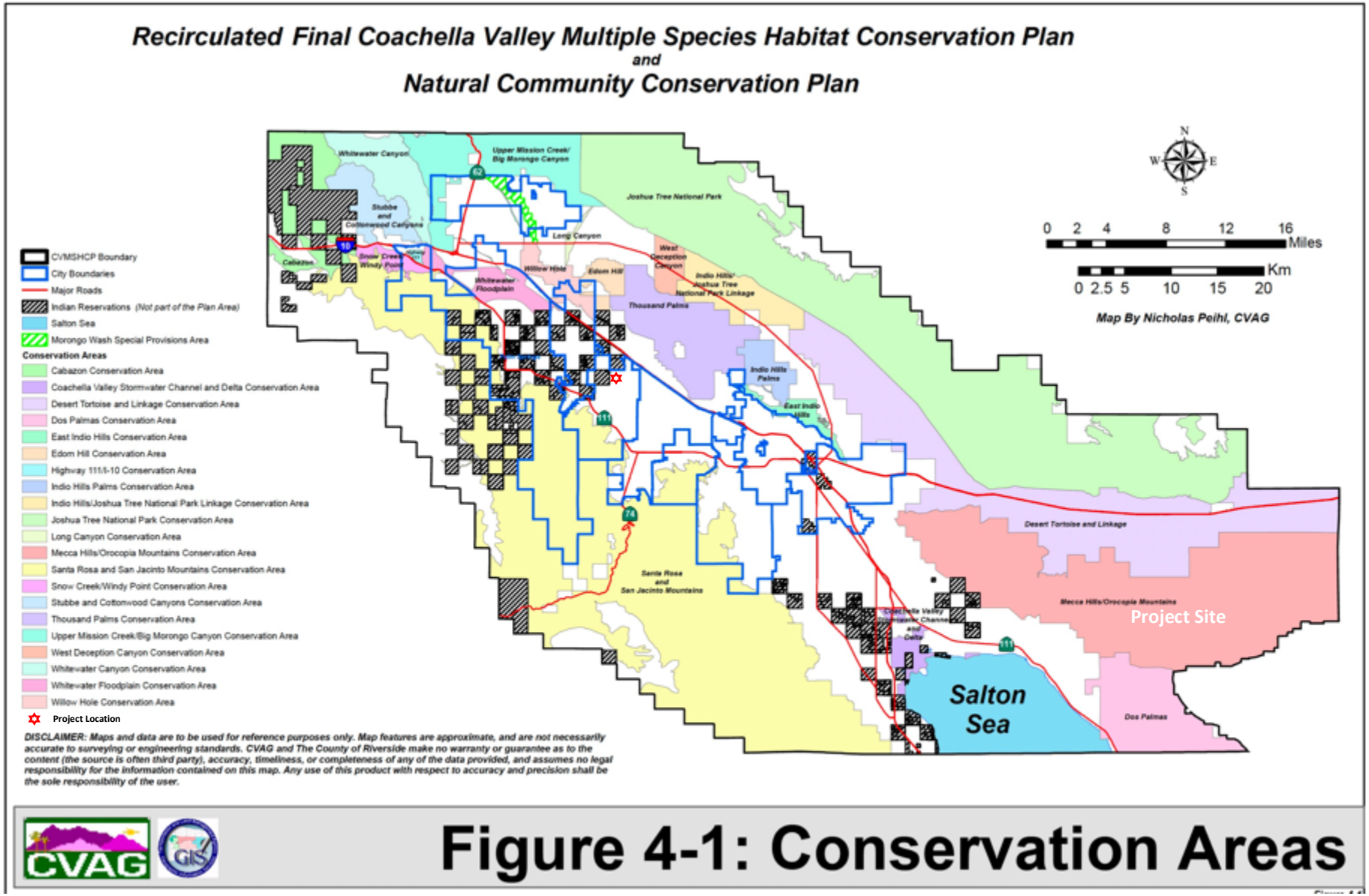


Figure 6. Coachella Valley Multiple Species Habitat Conservation Area in relation to the project site.

The Santa Rosa and San Jacinto Mountains Conservation Area was created to protect the following resources:

- Le Conte's thrasher (*Toxostoma lecontei*)
- Gray vireo (*Vireo vicinior*)
- Peninsular bighorn sheep (*Ovis canadensis nelsoni*, Distinct Population Segment)

The project is outside the boundaries of the two conservation areas and does not have any CVMSHCP linkages. NRAI's assessment included an evaluation of the habitats on site and in surrounding areas to determine whether there are other sensitive resources of concern in this area of Rancho Mirage that may be present on site.

In addition to those resources identified by the CVMSHCP, the field team focused on evaluating habitat for these sensitive resources potentially both on and in the surrounding area (Photos 5 and 6), including but not limited to those listed, or candidates for listing by the USFWS, California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS).

4.5.1 Thousand Palms Conservation Area Species

4.5.1.1 Coachella Valley Milkvetch

The Coachella Valley milkvetch (*Astragalus lentiginosus* var. *coachellae*) is a winter annual and sometimes short-lived biennial found only in the Coachella Valley. It is found in sandy places, such as sand dunes and sand sheets, below 1200 feet in elevation. It grows in creosote bush scrub, desert wash and sand dune communities.

The historical distribution of this species included most of the Coachella Valley and parts of the Imperial Valley. Its distribution has been severely restricted due to agricultural developments in Imperial County and residential and commercial development in the Coachella Valley south of Interstate 10.

The milkvetch is currently listed as endangered by the USFWS and as a List 1B.2 plant by the California Native Plant Society. The CDFW does not currently list this species.

IPaC lists the Coachella Valley milkvetch as one of the species of concern that are expected to be present in the vicinity of the project (Appendix C). BIOS does not identify habitat for this species in the vicinity of the project.

The sand sheets and sand dunes (minor) preferred by the Coachella Valley milkvetch exist on site and in the surrounding areas. This species could be present in and around the property. The CVMSHCP has not identified the project area as required for protection of this species and no mitigation for impacts is required.

4.5.1.2 Mecca Aster

Mecca aster (*Xylorhiza cognata*) is a perennial subshrub native to California. it is found only in the Coachella Valley. It preferentially grows on bajadas and alluvial fans in arid canyons below 1300 feet. Mecca aster grows in creosote bush scrub communities, flowering from January through June.



Photo 6. Open habitat in the surrounding area to the west (beyond the road).



Photo 7. Open habitat surrounding area to the south (beyond the road,

Historically, Mecca aster was known from Baja California (Munz 1974). Those populations have apparently been extirpated or found to belong to a different genus. The current distribution of Mecca aster is limited to California.

The Mecca aster is currently listed as a List 1B.2 plant by the California Native Plant Society. The CDFW and the USFWS do not currently list this species.

IPaC does not list the Mecca aster as one of the species of concern for the project. BIOS does not identify any habitat for this species in the vicinity of the project.

The bajadas and alluvial fans preferred by the Mecca aster do not exist on the project site or in the immediate vicinity. This species is not present. The CVMSHCP has not identified the project area as required for protection of this species.

4.5.1.3 Coachella Valley Fringe-toed Lizard

The Coachella Valley fringe-toed lizard (*Uma inornata*) is restricted to fine, wind-blown sand of dunes, flats, riverbanks and washes in the Coachella Valley. This species is found in creosote bush scrub and other sparse scrub habitats with suitable sandy soils. They occur from near sea level up to 1600 feet elevation in suitable habitat. This species is active at temperatures between 95° to 110° F.

The Coachella Valley fringe-toed lizard is especially adapted to live in sand dunes. It has fringes on the rear toes that enable it to move easily and swiftly on loose sand. In addition, the Coachella Valley fringe-toed lizard hides from predators by "swimming" or rapidly digging down and through loose sand to bury itself. It has a countersunk jaw to prevent sand from entering its mouth when it burrows.

This historical distribution of this species includes the former sand dunes in the Coachella Valley. This distribution has been contracted due to residential and commercial development in the Valley areas below the Pass. This species is now found only in the non-developed sand dunes of the upper Coachella Valley south of Interstate 10, and sand dunes north of the Interstate 10 freeway.

Loss of habitat to development and fragmentation of large dune areas have severely restricted the range and population numbers of this species. The Coachella Valley fringe-toed lizard is listed as threatened by the USFWS and endangered by the CDFW.

IPaC lists the Coachella Valley fringe-toed lizard as one of the species of concern for the project. BIOS shows the project as within the predicted habitat (high probability) for this species, but not within Critical Habitat.

The sand sheets and sand dunes (minor) preferred by the Coachella Valley fringe-toed lizard occur on the property and in the vicinity. This species may be present on site. The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts.

4.5.1.4 Flat-tailed Horned Lizard

Flat-tailed horned lizard (*Phrynosoma mcallii*) is restricted to windblown sand. It is found only on dunes and sandy flats in the lower deserts, from the Coachella Valley south to the head of the Gulf of California

and into extreme northeastern Baja and southeastern Arizona. The flat-tailed horned lizard is described as being found from below sea level up to around 600 feet elevation.

The flat-tailed horned lizard prefers fine sand areas with sparse vegetation cover in desert washes and desert flats. The habitats of the flat-tailed horned lizard and the Coachella Valley fringe toed lizard frequently overlap, although the flat-tailed horned lizard has a wider distribution.

This historical range of this species extended from central Riverside County to San Diego and Imperial counties. This habitat has become restricted, mostly in the Imperial and Riverside County areas. Substantial populations now are found primarily in undeveloped areas north of Interstate 10, eastern San Diego County and Imperial County outside of agricultural areas.

Impacts to this species include agricultural, residential, and commercial development, as well as recreational uses. The flat-tailed lizard is listed as a Species of Special Concern (SSC) by the CDFW. It is not listed by the USFWS.

IPaC does not list the flat-tailed horned lizard as one of the species of concern for the project. BIOS identifies the project as within the predicted habitat for this species.

Minor sand dunes and sandy soil occur on site and in the surrounding area. However, xthinner windblown sand and sandy flats are absent, and shrub cover is almost non-existent. Based on the lack of habitat complexity on site, it is unlikely the flat-tailed horned lizard occurs on the property. This species may be present in the vicinity. The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts.

4.5.1.5 Desert Tortoise

The desert tortoise is a desert-dwelling reptile that occurs throughout the Mojave and Sonoran deserts (Stebbins 1985, Berry 1984). It is found in California, Nevada and Utah, occurring in almost every type of habitat except dry lakes or playas, sand dunes, sand sheets and rocky slopes (German, et. al 1994).

Tortoises construct underground deep burrows as living quarters where they can avoid adverse weather. They also excavate temporary and smaller shelters for various purposes. These include small excavations under shrubs or into the side of a dirt bank to provide temporary shade during hot periods for their head and shoulders, shallow burrows that are sufficient to provide temporary escape from heat or cold during the day when the individual animal is not near deeper burrows, burrows of other animals such as coyote dens, and even naturally created caves that develop when there is differential erosion in desert soils.

For example, calcite (the most stable polymorph of calcium carbonate) has an unusual characteristic called retrograde solubility, becoming less soluble in water as the temperature increases. Under suitable conditions, calcite forms mineral coatings that cement the existing rock grains together. Softer soils below the calcite layer erode away, leaving openings that can sometimes mimic burrows used by various wildlife.

Because of these distinct types of shelter, all openings used or potentially usable by the desert tortoise are now classified as “coversites”.

Tortoises emerge to forage in the early spring (February and March) and usually remain active above ground during the day until early June, when they retreat to their deeper burrows for most of the summer, fall and winter months. They will emerge and be active during the fall months of September and October, depending upon late summer weather conditions. Although they stay underground for most of the year, tortoises can be found active above ground at all times of the year (Stebbins 1954 and 1985).

Tortoises forage on spring annual wildflowers and grasses (Luckenbach 1982). During the foraging season, they also breed and lay eggs in buried nests. Young tortoise hatch and emerge from the buried nest in the fall (September to October) to find deep burrows for shelter through the winter.

The desert tortoise hibernates or estivates underground for much of the year as an adaptation to the extreme temperature changes characteristic of desert winters and summers. As a result, determining whether desert tortoises are present in a particular area is generally restricted to locating sign, or evidence, of recent activity (Germano et. al 1994).

The tortoise has been undergoing a decline in population due to a number of factors. These include loss or destruction of habitat, killing or harming of animals in the wild, collection of individual animals, raven predation and disease (Luckenbach 1982).

The CDFW listed the tortoise as threatened on June 22, 1989. The tortoise was emergency listed as endangered by the USFWS on August 4, 1989. The USFWS listing was later changed to threatened. Both listings were made based on populations declining due to the factors listed above. The discovery that the tortoise was rapidly disappearing throughout its range as a result of a disease known as Upper Respiratory Disease Syndrome (URDS) was a critical part of the listing decisions.

IPaC lists the desert tortoise as one of the species of concern for the project. BIOS shows the project as within the predicted habitat (low probability) for this species, but not within Critical Habitat.

No burrows, scat or other sign of desert tortoise was observed. The lack of sign and habitat within the project area would indicate that desert tortoises were not resident in the area or the surrounding areas at the time of the survey.

4.5.1.6 Burrowing Owl

The Burrowing Owl is a resident species in lowland areas of southern California (Garrett & Dunn 1981). It prefers open areas for foraging and burrowing and is found widely scattered in open desert scrub. This species is scarce in coastal areas, being found mainly in agricultural and grassland habitats. The largest remaining numbers are in the Imperial Valley, where it is common in suitable habitat adjacent to the agricultural fields.

The Burrowing Owl prefers large flat open areas for nesting and hunting (Garrett & Dunn 1981). This species lives in burrows mostly constructed by other ground-dwelling species in grassy or sparse shrubby habitat. Burrowing Owls also take over other types of burrows, including manufactured objects such as pipes. This species forages low over the ground surface for insect prey, and seldom flies high in the air.

The CDFW has designated the Burrowing Owl as a Special Animal (SA). These species are so designated because "declining population levels, limited ranges and/or continuing threats have made them vulnerable to extinction." (CDFW 2019).

IPaC does not list the Burrowing Owl as one of the species of concern for the project. BIOS shows the project and the surrounding area as within the predicted habitat (high probability) for this species, but not within Critical Habitat. BIOS also identifies the property and the vicinity as providing patchy connectivity and linkages for the Burrowing Owl.

No sign of active Burrowing Owl use was observed (burrows, feathers, whitewash, etc.), but suitable nesting habitat exists. NRAI recommends that the project proponent conduct a take avoidance survey no less than 14 days prior to initiating construction1 on the project area to determine if Burrowing Owl are nesting on site (California Department of Fish and Game 2012).

If Burrowing Owls are found nesting on site, the following measures shall be implemented:

- Occupied burrows will not be disturbed unless a qualified biologist approved by the CDFW verifies through non-invasive methods that either (a) the adult birds have not begun egg-laying and incubation; or (b) the juveniles from the occupied burrows are foraging independently and are capable of independent survival.
- If the biologist is not able to verify one of the above conditions, then no disturbance shall occur within 500 meters of a Burrowing Owl nest during the breeding season to avoid abandonment of the young (California Department of Fish and Wildlife 2012).

If Burrowing Owls are observed during the preconstruction survey, CDFW will be contacted to discuss protective measures.

4.5.1.7 Palm Springs Round-tailed Ground Squirrel

The Palm Springs round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*) prefers sandy arid sites in low flat desert areas (Hall 1981). This animal is often found on sand dunes and will also dig into fine sand collected on banks and around shrubs. Typical habitat sites include floodplains and alluvial fans.

The Palm Springs round-tailed ground squirrel is found in creosote bush scrub, mesquite shrub, saltbush scrub and palo verde wherever sandy soils accumulate. It is typically found along floodplains and alluvial fans (Zeiner et al. 1990).

Impacts to the Palm Springs round-tailed ground squirrel are primarily residential and commercial development of its preferred habitat. Most of the populations south of Interstate 10 have been affected by

[1] "Construction" includes selection of staging areas, demolition, tree, trash and debris removal, placement of equipment and machinery on to the site preparatory to grading, and any other project-related activity that increases noise and human activity on the project site beyond existing levels. Emergency measures are exempt from this definition.

the increase in growth of the Coachella Valley area. The ground squirrel is currently listed as a candidate species by the USFWS and as an SSC by the CDFW.

IPaC does not list the Palm Springs round-tailed ground squirrel as one of the species of concern for the project. BIOS does not identify the property or the surrounding area as habitat for the Palm Springs round-tailed ground squirrel.

The site and surrounding area support the sand dunes found in Palm Springs ground squirrel habitat but lacks the flats and sandy mounds also preferred by this species. No ground squirrel burrows or other sign were observed on site. Based on the lack of habitat complexity (no flats or sandy mounds) and the lack of sign, the Palm Springs ground squirrel does not appear to be present on site. It may be present in the surrounding area.

The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts.

4.5.1.8 Palm Springs Pocket Mouse

The Palm Springs pocket mouse (*Perognathus longimembris bangsi*) prefers dense sandy soil formed into mounds for burrowing. It is found in creosote bush scrub and Joshua tree woodland (Hall 1981). This species occurs throughout the upper Coachella Valley in suitable habitat. This species is active primarily at night from late spring to late summer.

The Palm Springs pocket mouse is part of the little pocket mouse (*Perognathus longimembris*) subspecies complex (Zeiner et. al 1990). All the member subspecies seem to prefer open, sandy areas with sparse vegetative cover. This historical range of the Palm Springs pocket mouse is confined to the Coachella Valley area.

Impacts to the Palm Springs pocket mouse include residential and commercial development of its preferred habitat, as well as increasing recreational use. Most of the populations south of Interstate 10 have been affected by the increase in growth and development of the Coachella Valley area. The Palm Springs pocket mouse is currently listed as an SSC by the CDFW.

IPaC does not list the Palm Springs pocket mouse as one of the species of concern for the project. BIOS does not identify the property or the surrounding area as habitat for this species.

No burrows belonging to a pocket mouse species were observed, and suitably sandy soil mounds are not present. This species is not expected to be present on site.

The site and surrounding area support loose sand dunes, not the dense sandy soil that forms mounds necessary for excavating burrows by the Palm Springs pocket mouse. Based on the lack of suitable somewhat stabilized sandy soil mounds, habitat complexity and the lack of sign, the Palm Springs pocket mouse does not appear to be present on site. It may be present in the surrounding area.

The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts.

4.5.1.9 Coachella Valley Giant Sand Treader Cricket

The Coachella Valley giant sand treader cricket (*Macrobaenetes valgum*) is known from sand dune ridges in the Coachella Valley. The population size is regulated by the amount of rainfall. The habitat requirements for this species seem to include areas where springs dampen the sand year-round.

Impacts to this species include the loss of habitat from development and destruction of habitat from recreational use. This species is not currently listed by the CDFW or the USFWS.

IPaC does not list the Coachella Valley giant sand treader cricket as one of the species of concern for the project. BIOS does not identify the property or the surrounding area as habitat for this species.

Although sandy soils and sand dunes are present on site and in the surrounding area, they do not form the more stable dune ridges required by the Coachella Valley giant sand treader cricket, and the property lacks springs or other areas that dampen the spring year-round. This species is not expected to be present on site.

The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts.

4.5.2 Santa Rosa and San Jacinto Mountains Conservation Area Species

4.5.2.1 Least Bell's Vireo

The Least Bell's Vireo (*Vireo bellii pusillus*) prefers riparian forest and willows thickets. In the U.S. it is restricted to southwestern California where it breeds and nests from April through September. This species winters in Baja California, where documented animals have been found in a variety of habitats, including mesquite scrub within arroyos, palm groves, and hedgerows along agricultural and residential areas.

The Least Bell's Vireo used to be a common to locally abundant species in its lowland riparian habitat, and was known to occupy suitable areas from coastal southern California through the Sacramento and San Joaquin Valleys, with populations found as far north as Red Bluff in Tehama County. Some populations were found in the foothill streams Nevada and Coast Ranges, and in Owens Valley, Death Valley, and scattered locations in the Mojave Desert.

Least Bell's Vireo has since been extirpated from the majority of its historic range. Due to extensive conservation efforts, it has slowly been expanding back into its historic range.

Impacts are due almost entirely to the loss of riparian habitats throughout California and the encroachment of non-native riparian species such as tamarisk (*Tamarix* spp.) into waterways.

The USFWS and the CDFW both list the Least Bell's Vireo as endangered.

IPaC does not list the Least Bell's Vireo as one of the species of concern for the project. BIOS shows the project and the surrounding area as within the predicted habitat (high probability) and range (also high probability) for this species. BIOS also identifies the property and the vicinity as providing patchy connectivity and linkages for the Least Bell's Vireo.

The site and surrounding area do not have any riparian habitat and this species is not expected to be use the property or the surrounding areas. The CVMSHCP has not identified the project area as required for protection of this species and does not require mitigation for any impacts

4.5.2.2 Gray Vireo

The Gray Vireo (*Vireo vicinior*) occupies a wide variety of habitats. Adults inhabit desert habitats such as creosote bush and mesquite scrub. This species also inhabits oak scrub, chaparral, chamise and pinyon pine–juniper, up to approximately 7800 feet elevation. Migrants and wintering birds also occupy these habitats, as well as desert streambeds.

Gray Vireos eat mostly insects gleaned from leaves and twigs in dense vegetation. Foraging takes place anywhere from near the ground up to twelve feet and sometimes higher. Mexican populations have been recorded eating fruits. Nesting takes place in dense scrub or brush from near ground level to about six feet.

The range of the Gray Vireo extends from the desert portions of the Mojave, Sonoran and Chihuahuan Deserts, including into Mexico. Destruction, degradation and removal of desert scrub habitat is the major threat for this species. It is not currently listed by the USFWS or the CDFW.

IPaC does not list the Gray Vireo as one of the species of concern for the project. BIOS does not identify the property as providing habitat.

There is no scrubby shrub habitat on site, only isolated individual scrub species. This species is not expected to occupy or use the property or the surrounding areas. The CVMSHCP has not identified the project area as required for protection of the Gray Vireo and does not require mitigation for any impacts.

4.5.2.3 Peninsular Bighorn Sheep

Peninsular bighorn sheep are classified as a Distinct Population Segment of the Nelson's bighorn sheep (*Ovis canadensis nelsoni*). They have the same habitat requirements as the Nelson's bighorn sheep, but they are limited to the desert slopes of the Peninsular Ranges in San Diego, Riverside, and Imperial Counties and the southern extension of those ranges into Mexico.

Bighorn sheep prefer rugged terrain. Their hooves are elastic and uniquely shaped to allow them to climb the steep, rocky terrain of the desert mountains, and use their agility and climbing ability to escape predators.

Both males and females develop horns, and horn growth continues more or less their entire life span. Both genders use their horns as offensive and defensive weapons. The young are born in lambing areas on steep, rugged slopes and in canyons.

Bighorn sheep forage primarily on green grasses and forbs. Feeding generally takes place in open areas with low-growing vegetation, located near rocky, steep terrain. The presence of surface water, natural or manufactured, is critical for survival.

Bighorn sheep are active during the day. Diurnal movement occurs in response to daily temperature shifts as well as the presence of predators (including humans). On hot days they stay close to water sources. They are less active at night, spending the night in bedding areas.

There is also seasonal movement to upper or lower elevations depending upon the time of year and the weather. Generally, migration shifts between summer ranges at the higher elevations to lower elevations in winter. During the hottest summer months, bighorn sheep stay near water sources. In cooler periods, they disperse over a wider area.

The historical range of the species *O. canadensis* extended throughout the southwestern U.S. east to Texas, as well as in the Canadian Rockies. The Nelson's subspecies is found in desert ranges from the White Mountains south to Mexico. They are also in the San Bernardino Mountains, and there is an isolated population in the San Gabriel Mountains.

The Distinct Population Segment of the Peninsular bighorn sheep are listed as endangered by the USFWS. The Nelson's bighorn sheep (including local populations) is listed as threatened by the CDFW, and the subspecies is also a California Fully Protected Species (CFP).

IPaC lists the Peninsular bighorn sheep population as one of the species of concern for the project. BIOS identifies patches of bighorn sheep range on the adjacent properties, but not the subject property. BIOS does identify the general area including the property as providing habitat (moderate probability), but no connectivity areas.

The property is composed of sandy soils and dunes without any rocky terrain. It is physically isolated from open terrain that may be used by bighorn sheep in seasonal migration. The Peninsular bighorn sheep population is not expected to occupy, cross or use the property or the surrounding areas. The CVMSHCP has not identified the project area as required for protection of the Peninsular bighorn sheep population and does not require mitigation for any impacts.

4.5.2.4 Other Species and Resources

IPaC, CNDDB and other research sources list a variety of species of concern for which habitat does not exist on site. The IPaC report identifies the following specific migratory bird species as of concern: Clark's Grebe, Western Grebe, Costa's hummingbird, Lawrence's goldfinch, and Monarch's butterfly as all species of concern for the property. The IPaC report does not identify bald and golden eagles as of concern for this project but recommends these species be considered in the findings.

Migratory birds and raptors, including the two eagle species, are discussed under Section 4.7. Specific information on the species identified by IPaC, as well as other sensitive resources, is provided in Table 1 in Appendix B.

There are no CVMSHCP linkages that will be affected or occupied by project development.

4.6 Jurisdictional Drainages and Wetlands

4.6.1 Army Corps of Engineers

The Corps regulates discharges of dredged or fill material into waters of the United States. These waters include wetlands and non-wetland bodies of water that meet specific criteria. The lateral limit of Corps jurisdiction extends to the Ordinary High-Water Mark (OHWM) and to any wetland areas extending beyond the OHWM; thus, the maximum jurisdictional area is represented by the OHWM or wetland limit, whichever is greater.

Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate (waterway) commerce. This connection may be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations.

4.6.2 State Water Resources Control Board

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the State Water Resources Control Board (SWRCB) under Section 401 of the Clean Water Act regulations. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices known as Regional Water Quality Control Boards (RWQCB).

Under the Porter-Cologne Act of 2003, the SWRCB has extended its responsibilities to include impacts to water quality from non-point source pollution. In addition, the SWRCB has the responsibility to require that projects address ground water and water quality issues, which would be evaluated as part of the geotechnical and hydrology studies. Their authority extends to all waters of the State (of California).

4.6.3 California Department of Fish and Wildlife

The CDFW through provisions of the State of California Administrative Code is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. Lateral limits of jurisdiction are not clearly defined, but generally include any riparian resources associated with a stream or lake, CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFW.

Findings

The site lacks evidence of hydrological flow such as debris lines, soil deposits, defined erosion, evidence of and restricted or confined flow. There is no riparian vegetation typical of desert washes, drainages or other confined channels such as can be found along some alluvial fans. 'The soils do not show typical color changes representative of deposition of exotic (not found in the local area) soil material.

In the professional judgment of NRAI, the project site does not support jurisdictional waters for any of the three jurisdictional agencies.

4.7 Raptors, Migratory Birds, and Habitat

Most of the raptor species (eagles, hawks, falcons and owls) are experiencing population declines because of habitat loss. Some, such as the peregrine falcon, have also experienced population losses because of environmental toxins affecting reproductive success, animals destroyed as pests or collected for falconry, and other direct impacts on individuals. Only a few species, such as the red-tailed hawk and barn owl, have expanded their range despite or a result of human modifications to the environment. As a group, raptors are of concern to state and federal agencies.

Raptors and all migratory bird species, whether listed or not, also receive protection under the Migratory Bird Treaty Act (MBTA) of 1918[2]. The MBTA prohibits individuals to kill, take, possess or sell any migratory bird, bird parts (including nests and eggs) except per regulations prescribed by the Secretary of the Department (16 U. S. Code 70[3]).

Additional protection is provided to all bald and golden eagles under the Bald and Golden Eagle Protection Act of 1940, as amended[4]. State protection is extended to all birds of prey by the California Fish and Game Code, Section 2503.5[5]. No take is allowed under these provisions except through the approval of the agencies or their designated representatives.

At the time of the survey, the parcel had nesting habitat for ground-nesting bird species, and suitable scrub habitat in the surrounding neighborhood. A breeding bird survey following the recommended guidelines of the MBTA will be required to determine if nesting is occurring in this area.

1. A qualified biologist shall conduct a breeding bird survey no more than three days prior to the start of construction to determine if nesting is occurring. "Construction' includes selection of staging areas, demolition, tree, trash and debris removal, placement of equipment and machinery on to the site preparatory to grading, and any other project-related activity that increases noise and human activity on the project site beyond existing levels. Emergency measures are exempt from this definition.
2. If occupied nests are found, they shall not be disturbed unless the qualified biologist verifies through non-invasive methods that either (a) the adult birds have not begun egg-laying and incubation; or (b) the juveniles from the occupied nests are capable of independent survival. The biologist will ensure their survey work does not disrupt nesting or nesting attempts.
3. If the biologist is not able to verify one of the above conditions, then no disturbance shall occur within a distance specified by the qualified biologist for each nest or nesting site. The qualified biologist will determine the appropriate distance in consultation with the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service.

2 https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php

3 https://www.fws.gov/le/USStatutes/MBTA.pdf

4 https://www.fws.gov/le/USStatutes/BEPA.pdf

5 https://law.justia.com/codes/california/2015/code-fgc/division-4/part-2/chapter-1/section-3513

4. All established buffer areas around nest will be monitored on a weekly basis until nesting by all species is complete.
5. The biologist retains the authority to direct construction activity, including stopping the project.

4.8 Protected Desert Native Plant Species

The California Desert Native Plants Act regulates the taking of plant species for commercial purposes. It also regulates the permitting process for the taking of desert plant species, making it unlawful for "any Person to destroy, dig up, mutilate or harvest any living native plant, or the living or dead parts of any native plant, except its fruit, without obtaining written permission from the landowner and a permit . . .." (State of California 1982, Division 23, Chapter 5, Section 80111[6]). This Section states:

"This division does not prevent any of the following: The clearing or removal of native plants from a canal, lateral ditch, survey line, **building site [emphasis added]** or road or other right-of-way **by the landowner or his or her agent, [emphasis added]** if the native plants **are not to be transported from the land or [emphasis added] offered for sale** [emphasis added] **and if the commissioner is given at least 10 days' notice of any such activity [emphasis added]."**

Findings

No protected desert native plant species were found.

4.9 Raven Control

Ravens follow human activity in that they are drawn to human-occupied areas for food and nesting sources. Ravens have always been present in the desert, but the extension of several types of development and the accompanying increase of food sources into previous open space areas has resulted in a rapid increase in raven populations. When ravens forage for food, they prey on whatever is available. Construction activity and permanent commercial buildings with food production or preparation facilities can attract ravens if food scraps and other trash are made available by workers.

Increasing the local population of birds by providing attractants such as garbage cans and other waste facilities could impact local wildlife populations.

Findings

Ravens were observed during the survey. The following measures will be implemented during construction and for the life of the facility in order to reduce raven predation on surrounding wildlife populations:

- Control of trash during construction by placing all trash, garbage and other debris into closed waste containers.
- Regular emptying of waste containers to avoid full containers that may spill or blow into the surrounding area and encouraging increased foraging by ravens.

6 https://www.wildlife.ca.gov/Conservation/Plants/CA-Desert-Plant-Act

4.10 Worker Education Awareness Program

A Worker Education Awareness Program (WEAP) shall be prepared that includes the following:

- General behavior and ecology of all sensitive that may be present, including the identification of animals, burrows, nest sites and other evidence of wildlife occupation.
- Regional distribution of the species of concern
- Sensitivity to human activities
- Status under state and federal regulations
- Basis for protection requirements and the need to avoid harming species and habitats
- Restrictions on activity in areas occupied by the sensitive resources
- Clear identification of all work areas including location and storage of equipment and supplies to avoid impacts to species and habitat
- Information to control trash, contamination, landscape materials and other physical materials and activities through implementation of standard measures to protect species, habitat and prevent the introduction of opportunistic or invasive species.
- Penalties and fines for failure to abide by the regulations and requirements
- Reporting requirements
- Project protective mitigation measures

The WEAP training will be given by a qualified biologist. Non-English speakers will be provided with appropriate translations. WEAP training will be provided as appropriate at every safety meeting to reinforce the information and so that new workers will be trained.

5.0 Local Development Mitigation Fee

Prior to construction and issuance of any grading permit, the City of Rancho Mirage shall ensure compliance with the CVMSHCP and its associated Implementing Agreement. The City shall also ensure that payment of the CVMSHCP Local Development Mitigation Fee for the proposed Project is remitted to the Coachella Valley Conservation Commission.

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Appendix A. Plant and Wildlife Species Observed

PLANTS	
SCIENTIFIC NAME	**COMMON NAME**
DICOTYLEDONS	**EUDICOTS**
AMARANTHACEAE	**Amaranth Family**
Amaranthus albus	Tumbleweed*
APOCYNACEAE	**Dogbane Family**
Nerium oleander	Oleander*
ASTERACEAE	**Sunflower Family**
Pallafoxia arida var. *arida*	Desert Needle
BRASSICACEAE	**Mustard Family**
Brassica tournefortii	Saharan Mustard*
CHENOPODIACEAE	**Goosefoot Family**
Salsola tragus	Russian Thistle*
EHRETIACEAE	**Coldenia Family**
Tiquilia plicata	Plicate Coldenia
EUPHORBIACEAE	**Euphorb Family**
Croton californicus	Desert Croton
FABACEAE	**Pea Family**
Psorothamnus emoryi	Emory's Indigo Bush
NYCTAGINACEAE	**Four O'clock Family**
Abronia villosa	Hairy Sand Verbena
OLEACEAE	**Olive Family**
Olea europea	European Olive*
ONAGRACEAE	**Willowherb Family**
Chylismia claviformis ssp. *aurantiaca*	Pinnate Leaved Primrose
Oenothera deltoides	Desert Lantern
ZYGOPHYLLACEAE	**Caltrop Family**
Larrea tridentata	Creosotebush
MONOCOTYLEDONS	**MONOCOTS**
POACEAE	**Grass Family**
Pennisetum setaceum	Fountaingrass*
Schismus barbatus	Old Han Schismus*

*non-native species

WiLDLIFE	
SCIENTIFIC NAME	**COMMON NAME**
AVES	**BIRDS**
ALAUDIDAE	**LARKS**
Eremophila alpestris	Horned Lark
CORVIDAE	**CROWS and JAYS**
Corvus corax	Common Raven
FRINGILLIDAE	**FINCHES, EUPHONIAS, AND ALLIES**
Haemorhous mexicanus	House Finch

WiLDLIFE	
SCIENTIFIC NAME	**COMMON NAME**
TROCHILIDAE	**HUMMINGBIRDS**
Calypte costae	Costa's Hummingbird
TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	Black Phoebe

Appendix B. IPaC Report

IPaC Information for Planning and Consultation

U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Riverside County, California



Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Peninsular Bighorn Sheep Ovis canadensis nelsoni There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4970	Endangered

Birds

NAME	STATUS
Least Bell's Vireo Vireo bellii pusillus Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered

Reptiles

NAME	STATUS
Coachella Valley Fringe-toed Lizard Uma inornata Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2069	Threatened
Desert Tortoise Gopherus agassizii There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4481	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Coachella Valley Milk-vetch Astragalus lentiginosus var. coachellae Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/7426	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

There are no documented cases of eagles being present at this location. However, if you believe eagles may be using your site, please reach out to the local Fish and Wildlife Service office.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▥)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▥)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

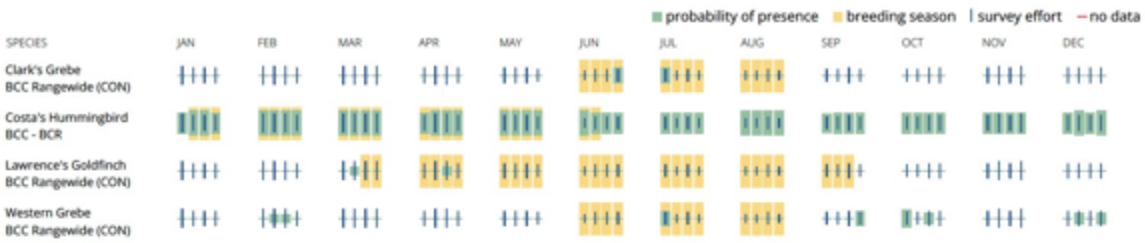
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix C. Sensitive Biological Resources

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Plants				
Singlewhorl burrobrush *Ambrosia monogyra*	Perennial shrub. Found on sandy soils in chaparral and Sonoran desert scrub. Elevation range is from 30 feet to 330 feet. Known from California, Arizona, New Mexico, Nevada and Texas, Baja California and Sonora, Mexico	Aug - Nov flowering period	FED: ND STATE: ND CNPS: 2B.2	None. Species is a shrub and would have been present at the time of the survey,
Deep Canyon snapdragon *Pseudorontium cyathiferum*	Annual herb. Washes and rocky slopes in Sonoran desert scrub. Known only from Riverside, primarily around the Deep Canyon area.	Feb - Apr flowering period	FED: ND STATE: ND CNPS: 2B.3	None. Suitable habitat not present in the project area.
Coachella Valley milk vetch *Astragalus lentiginosus* var. *coachellae*	Annual. Sandy places below 1200 feet. Creosote bush scrub. Coachella Valley, Riverside County.	February - May	FED: END STATE: ND CNPS: 1B.2	High. Site has suitable sandy habitat.
Triple-ribbed milkvetch *Astragalus tricarinatus*	Perennial. Occurs on gravelly soils in creosote bush scrub and Joshua tree woodland plant communities. Historical distribution extends from the head of the Coachella Valley to the Orocopia Mountains. It occurs on exposed, rocky slopes and canyon walls from 450 to 550 meters (1400 to 4000 feet) in elevation.	February - May flowering period	FED: END STATE: ND CNPS: 1B.2	None. Project site lacks exposed rocky slopes and steep canyon habitats occupied by this species.
Ayenia *Ayenia compacta*	Perennial herb. Mojave Desert scrub, Sonoran Desert scrub. rocky and gravelly washes in dry desert canyons. 150 to 1095 meters elevation	March – April flowering period	FED: ND STATE: ND CNPS: 2B.3	None. Project site lacks rocky and gravelly washes found in desert canyons.
Arizona spurge *Euphorbia arizonica*	Perennial herb from a taproot. Found in Sonoran desert scrub on sandy, gravelly soils on alluvial fans. 150 to 4000(?) feet.	March to April	FED: ND STATE: ND CNPS: 2B.3	None. Project site lacks alluvial fan habitat close to mountains All recorded locations are south or east of the project site.
Flat-seeded spurge *Euphorbia platysperma*	Rare annual. On sand dunes and deep sandy soils in desert scrub. North Palms Springs (sand dunes) in Coachella Valley to eastern San Bernardino County and southwest Arizona.	Feb - Sep	FED: C2* STATE: ND CNPS: 1B.2	Unknown. Suitable sandy soils are present on the project site, but site lacks scrub habitats.
White-bracted spineflower *Chorizanthe xanti* var. *leucotheca*	Annual herb. Desert scrub, pinyon juniper woodlands. 300 to 1200 meters in elevation. Variety *leucotheca* is infrequent and localized in the eastern San Bernardino Mountains of San Bernardino County and on the eastern slopes of the San Jacinto Mountains in Riverside County.	April – June	FED: ND STATE: ND CNPS: 1B.2	None. Site does not contain suitable slope habitat for this species.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Slender-horned spineflower *Dodecahema leptoceras*	Sandy and gravelly soils on alluvial fans and old floodplains, chaparral communities, pine-oak woodlands; 500 to 2000 ft. elevation. Los Angeles, Riverside, and San Bernardino Counties.	May - Jun	FED: END STATE: END CNPS: 1B.1	None. This species does not occur in desert habitats. The record for Desert Hot Springs is incorrect.
California ditaxis *Ditaxis serrata* var. *californica*	Sandy washes and alluvial fans of the foothills and lower desert slopes. 30 to 910 meters elevation. Sonoran desert scrub. Riverside and San Diego counties.	Jan - Feb flowering period	FED: C2* STATE: ND CNPS: 3.2	None. Site does not contain suitable foothill and lower desert slopes. All recorded populations are south and east of the project site.
Glandular ditaxis *Ditaxis claryana*	Perennial herb. Dry washes and on rocky hillsides, in sandy soils and sandy flats. Sonoran Desert. 0 to 2500 feet.	April - Sep	FED: ND STATE: ND CNPS: 2B .2	None. All recorded localities are in deep sandy soil habitats in San Bernardino County.
Harwood's eriastrum *Eriastrum harwoodii*	Annual herb. Sand dunes in creosote-bush scrub. Sonoran Desert below 3000 feet.	March - June	FED: ND STATE: ND CNPS: 1B.2	Unknown. Suitable sandy soils are present on the project site, but site lacks scrub habitats.
Cliff spurge *Euphorbia misera*	Shrub. Occasional on sea-bluffs in coastal sage scrub. From Corona del Mar south to San Diego, San Clemente and Santa Catalina Islands. Also found in creosote bush scrub at Whitewater, Riverside County	January – August flowering period	FED: ND STATE: ND CNPS: 2B.2	None. Only recorded inland location is a ecological isolate at Whitewater. Project site lacks bluff or cliff habitat.
Little San Bernardino Mountains linanthus *Linanthus maculatus*	Minute annual. Desert scrub, Joshua tree woodland. Desert dunes, light-colored quartz sand, often in washes or bajadas. Only recoded from sandy places in Riverside and San Bernardino Counties. 500 - 4000 feet. Microhabitat difficult to pin down.	April - May	FED: C2* STATE: ND CNPS: 1B.2	Unknown. Suitable sandy soils are present on the project site, but site lacks scrub habitats.
Parish's desert-thorn *Lycium parishii*	Perennial shrub. Sandy to rocky slopes and canyons below 2000 feet. Possibly coastal sage scrub, definitely In creosote bush scrub. San Bernardino Valley and western Colorado Desert.	March - April flowering period	FED: ND STATE: ND CNPS: 2B.3	None. As a shrub it would have been observable during the survey.
Spiny hair blazing star *Mentzelia tridentata*	Annual. Creosote bush scrub. On talus slopes of mesas and canyons. San Bernardino, Kern and Inyo counties.	March – May	FED: ND STATE: ND CNPS: 2B.1	None. There are no localities recorded in the various databases for Riverside County. It is not clear why this species is included in the Desert Hot Springs quadrangle records. No talus slopes are present in the project site area.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Slender cottonheads *Nemacaulis denudata* var. *gracilis*	Annual species found in dunes or sand from 0 to 560 meters elevation (0 to 1840 feet). Coastal dunes, desert dunes in Sonoran desert scrub. In California, recoded only from San Diego and Riverside counties.	April - May	FED: ND STATE: ND CNPS: 2B.2	High. Sand dune habitat found on the project site.
Desert spike-moss *Selaginella eremophila*	Lycophyte (perennial herb). Gravelly, rocky soils Desert scrub and chaparral	(May)Jun(July)	FED: ND STATE: ND CNPS: 2B.2	None. Site lacks gravelly rocky soils.
Purple stemodia *Stemodia durantifolia*	Perennial herb. Mesic locations/wetland/riparian in sandy soils. Sonoran desert scrub habitat. Elevation 180 – 300 meters (500 to 650 feet).	(Jan)April - Dec	FED: ND STATE: ND CNPS: 2B.1	None. Project site lacks mesic/wetland/riparian habitats.
Jackass-clover *Wislizenia refracta* ssp. *refracta*	Playas, desert dunes, Mojave desert scrub, Sonoran desert scrub. Microhabitat is dunes and playas, alkaline flats. Found from 130 – 800 meters (400 –2500 feet) elevation.	April – November	FED: ND STATE: ND CNPS: 2B.2	None. site lacks suitable alkali sink habitats.
Mecca aster *Xylorhiza cognata*	Species is perennial, found in Sonoran desert scrub on steep canyon slopes. Occurs primarily on sandstone and clay slopes. Known mostly from Indio Hills and Mecca Hills. Endemic to Riverside County. Elevation range 60 to 1000 feet.	Jan - Jun flowering period	FED: C2* STATE: ND CNPS: 1B.2	None. Plant is perennial and would have been observed during the survey. site lacks sandstone and clay slopes.
Fish				
Amphibians				
Reptiles				
Desert tortoise *Gopherus agassizii*	Historically found throughout the Mojave and Sonoran Deserts into Arizona, Nevada, and Utah. Occurs throughout the Mojave Desert in scattered populations. Found in creosote bush scrub, saltbush scrub, thornscrub (in Mexico), and Joshua tree woodland. Found in the open desert as well as in oases, riverbanks, washes, dunes, and occasionally rocky slopes.	February - June, all deserts Aug - Sep primarily eastern deserts. Can be present throughout year	FED: THR STATE: THR	None. No sign was observed during the survey.
Coachella Valley fringe-toed lizard *Uma inornata*	Restricted to fine, windblown sand of dunes, flats, riverbanks and washes in the Coachella Valley. Creosote bush scrub, other sparse scrub habitats with suitable soils. Near sea level to 1600 feet.	Active year round at temperatures 95° to 110° F.	FED: THR STATE: END	Low. Site has deep sandy habitats suitable for this species, but is isolated by development.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Flat-tailed horned lizard *Phrynosoma mcallii*	Restricted to windblown sand. Dunes and sandy flats of low desert, from Coachella Valley to head of the Gulf of California, extreme ne. Baja to se. Arizona. Below sea level to around 600 feet.	Active year round	FED: ND STATE: SSC	Unknown. Site lacks windblown sandy habitats suitable for this species.
Northern red-diamond rattlesnake *Crotalus exsul*	Occurs in rocky areas & dense vegetation. Needs rodent burrows cracks in rocks or other surface material. Chaparral, woodland, grassland and desert areas. Coastal San Diego County to the eastern slopes of the mountains.	Year round	FED: C2* STATE: SSC	None. Site lacks rocky habitats with dense vegetation cover.
Birds				
Clark's grebe *Aechmophorus clarkii*	Found on open water. Forages on fish. Nest is a floating platform on water.	Present in open sea during the non-breeding season. Inland on large water bodies during breeding season.	FED: ND STATE: BCC	None. No suitable open water habitat present.
Western grebe	Found on large freshwater lakes and marshes with reeds and rushes. After the annual molt found in migrate to saltwater or brackish habitat. Smaller groups winter inland on lakes and rivers.	Year round, but seasonal movement from freshwater to saltwater.	FED: ND STATE: BCC	None. No suitable open water habitat present
Great blue heron *Ardea herodias*	Fairly common resident in most of southern California, becoming more numerous in warmer areas in winter. Found in a variety of aquatic habitats. Peak abundance in coastal estuaries. In the desert, mostly seen during migrations; winters locally in suitable habitats.	Year round	FED: ND STATE: ND	None. Aquatic habitats lacking on site. May cross over site in flight
Great egret *Casmerodius albus*	Fairly common winter visitor along the coast, commonly resident and a breeder at the Salton Sea and the Colorado River. An uncommon transient in the rest of southern California.	Year round in the desert; seasonal in other areas.	FED: ND STATE: ND	None. Aquatic habitats lacking on site. May cross over site in flight
Snowy egret *Egretta thula*	Common winter visitor along the coast, occasionally remaining throughout the summer. Common resident at the Salton Sea and the Colorado River. Uncommon transient elsewhere in southern California.	Year round in the desert; seasonal in other areas	FED: ND STATE: ND	None. Aquatic habitats lacking on site. May cross over site in flight.
Black-crowned night heron *Nycticorax nicticorax*	Common but local resident along the coastal and the Salton Sea. Uncommon transient and rare winter visitor in the desert.	Year round on the coast and along the Salton Sea. Winters in the desert.		None. Aquatic habitats lacking on site. May cross over site in flight.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
White-faced ibis *Plegadis chihi*	Fairly common transient and summer visitor at the Salton Sea. Irregular and local breeder. Uncommon in winter. Primarily transient throughout the rest of southern California, as well as a local visitor along the coast.	Most spring and summer in the desert; winter along the coast	FED: ND STATE: WL	None. Aquatic habitats lacking on site. May cross over site in flight
Brown pelican *Pelecanus occidentalis*	Common along the coast, with breeding colonies on Anacapa, Santa Barbara and Santa Cruz Islands. Regular post-breeding visitor to the Salton Sea, sometimes in numbers. Rare elsewhere in the interior areas of California.	Year-round coast; summer inland	FED: END STATE: END (nesting colonies), CFP	None. Aquatic habitats lacking on site. May cross over site in flight
Aleutian Canada goose *Branta canadensis leucoparaeia*	The Canada goose is a common winter visitant throughout southern California; the Aleutian is recoded only from the Salton Sea area.	Winter	FED: THR	None. Aquatic habitats lacking on site. May cross over site in flight.
Northern harrier *Circus cyaneus*	Grassland and marshy habitats in Southern California. Uncommon in open desert and brushlands.	Year round	FED: ND STATE: SSC	Low. May fly over site, but no nesting habitat exists on site.
Cooper's hawk *Accipiter cooperiii*	Woodland and semi-open habitats, riparian groves and mountain canyons. Uncommon permanent resident in coastal, mountains, and deserts of Southern California. Transients are fairly common on coast in fall.	Year round; predominant in summer	FED: ND STATE: WL	Low. May forage over site, but no nesting habitat exists on site.
Golden eagle *Aquila chrysaetos*	Grasslands, brushlands, deserts, oak savannas, open coniferous forests and montane valleys. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: SSC (nesting and wintering). CFP	Low. Not observed during the surveys. Foraging habitat for this species exists over the entire property. No suitable nesting habitat occurs on site.
Ferruginous hawk *Buteo regalis*	Fairly common in winter in open grassland and agricultural regions in the interior, as well as some valleys along the coast.Rare and uncommon along the coast and in the desert.	Winter	FED: C2* STATE: WL	Low. Not observed during the surveys. Poor quality foraging habitat for this species exists on site. No suitable nesting habitat occurs on site.
Merlin *Falco columbarius*	Frequents several habitats including coastal sage scrub and annual grassland. Forages along the coast, and in montane valleys and open deserts with scattered clumps of trees. Rare fall migrant and winter visitor to Southern California.	Fall & winter	FED: ND STATE: SSC	Low. Not observed during the surveys. Can be expected to forage over the site during migration and in winter. They are expected to use the area very infrequently.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Prairie falcon *Falco mexicanus*	Nest in cliffs or rocky outcrops; forage in open arid valleys, agricultural fields. Throughout the desert and arid interior portions of coastal counties. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: SSC	Low. Not observed during the surveys. Foraging habitat exists for this species over the property and surrounding areas, but there is no suitable nesting habitat.
Western snowy plover *Charadrius alexandrinus nivosus*	Nests on sandy beaches along the coast and gravelly beaches at the Salton Sea. Also nests on sinks, playas, and old shorelines in the desert. Forages on alkali flats. Nesting sites need protection.	Year round	FED: THR (coastal populations) STATE: SSC	Low. Not observed during the surveys. Foraging habitat exists for this species over the property, but there is no suitable nesting habitat.
Gull-billed tern *Sterna nilotica*	Fairly common summer resident at the Salton Sea. Unknown away from the Salton Sea.	Summer; rarely in fall and early winter	FED: ND STATE: SSC	Low. Not observed during the surveys. May fly over the property, but there is no suitable nesting habitat.
Black skimmer *Rynchops niger*	Fairly common summer resident at the Salton Sea. Sporadic visitor to the coast; some resident at the San Diego Bay.	Summer; possibly resident in San Diego Bay	FED: ND STATE: SSC	Low. Not observed during the surveys. May fly over the property, but there is no suitable nesting habitat.
Burrowing owl *Athene cunicularia hypugea*	Grasslands and rangelands, usually occupying ground squirrel burrows. Resident over most of Southern California. Found in agricultural areas.	Year round	FED: ND STATE: SSC	Unknown. No sign was observed on site.
Long-eared owl *Asio otus*	Rare resident in coastal Southern California and uncommon resident in desert areas. Dense willow-riparian woodland and oak woodland. Breeds from valley foothill hardwood up to ponderosa pine habitat.	Nocturnal year round	FED: ND STATE: SSC	Unknown. Foraging habitat may exist on the property, but no nesting habitat.
Short-eared owl *Asio flammenus*	Primarily a rare and local winter visitant to the coast, and a rare fall transient and winter visitant in the desert, including the Salton Sea and the Colorado River. Also recorded at Mystic Lake in the San Jacinto Valley, Riverside County, in summer 1992, and Harper Dry Lake, San Bernardino County, summer 1993.	Fall - Winter	FED: ND STATE: SSC	Unknown. Available information states that short-eared owls are rare fall transients in the desert and, therefore, may forage on the property. No nesting habitat present.
Vermilion flycatcher *Pyrocephalus rubinus*	Rare and local resident along Colorado River and Morongo Valley. Rare fall and winter visitor to lowlands in the coast and desert areas, including the Salton Sea. Breeds near water in both riparian groves and mesquite thickets.	April to May breeding	FED: ND STATE: ND	None. No suitable nesting or foraging habitat exists on site.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Brown-crested flycatcher *Myiarchus tyrannulus*	Occurs in riparian woodland and adjacent desert scrub. Fairly common summer resident along the Colorado River. Breeds in Morongo Valley. Unrecorded west of the deserts.	April to May breeding	FED: ND STATE: ND	None. No suitable nesting or foraging habitat exists on site.
Costa's hummingbird *Calypte costa*	Common in coastal sage scrub and desert scrub, mostly away from the coast in more arid regions.	Year-round Jan 15 to Jun 10 breeding period.	FED: BCC in particular Bird Conservation Regions. STATE: ND	None. No suitable scrub foraging habitat present.
Coastal cactus wren *Campylorhynchus brunneicapillus couesi*	Tall *Opuntia* required for nesting and roosting. Coastal sage scrub. Southern California.	Year round	FED: ND STATE: SSC	None. No tall opuntia present on site. The property is outside the range of the coastal population of the cactus wren.
Black-tailed gnatcatcher *Polioptila melanura*	Resident in wooded desert wash and desert scrub habitats. Nests in desert wash with mesquite, paloverde, ironwood, and acacia species; absent from areas with salt cedar. Fairly common resident on the Colorado Desert; extending into the eastern Mojave Desert.	Year round	FED: ND STATE: ND	None. site lacks wooded desert wash and adjacent desert scrub habitats.
Crissal thrasher *Toxostoma crissale*	Resident in the southeastern deserts in desert riparian and wash habitats. Nests in dense vegetation along streams and washes. Plant species found in the preferred habitat include mesquite, screwbean mesquite, ironwood, catclaw, acacia, arrowweed and willow. A common resident along the river, somewhat uncommon to the west. Resident in the higher northern deserts of eastern San Bernardino and southeastern Inyo counties.	Year round	FED: ND STATE: SSC	None. Site lacks desert riparian and wash habitats. Project site outside known range.
Le Conte's thrasher *Toxostoma lecontei*	Uncommon and local resident in low desert scrub throughout most of the Mojave Desert, extending up into the southwestern corner of the San Joaquin Valley. Breeding range extends from these areas into eastern Mojave, north into the Owens Valley and south into the lower Colorado Desert, and eastern Mojave. Also recorded from southern Nevada and Utah, as well as western Arizona and New Mexico.	Year round	FED: ND STATE: SSC	Low. No suitable nesting or foraging habitat present on site.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Lawrence's goldfinch *Spinus lawrencei*	Dry woodlands and brushy areas near areas with some water and riparian habitats.	Year-round Mar 20 to Sep 20 breeding period	FED: BCC throughout its range STATE: ND	None. No suitable habitat.
Mammals				
California leaf-nosed bat *Macrotus californicus*	In California, these bats primarily occupy low-lying desert areas, where they roost in caves, mines, and old buildings. Historic records extend west to near Chatsworth, Los Angeles County, but most populations from the California coastal basins are believed to have disappeared. Occurs from northern Nevada, Southern California, and western Arizona south to southern Baja California and Sonora.	Year round nocturnal	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Townsend's big-eared bat *Corynorhinus townsendii*	Requires caves, mines, tunnels, buildings or other similar structures for roosting. May use separate sites for night, day, hibernation or maternity roosts. Found in all but subalpine and alpine habitats throughout California.	Year round Nocturnal	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains
Pallid bat *Antrozous pallidus*	Day roosts in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings. Hibernation sites are probably rock crevices. Grasslands, shrublands, woodlands and forest from sea level through to mixed conifer. Throughout Southern California.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Spotted bat *Euderma maculatum*	Found in the western North America from southern British Columbia to the Mexican border, at a small number of widely scattered localities. Habitats range from arid deserts and grasslands through mixed conifer forest up to 10,600 feet elevation. Prefers rock crevices in cliffs, also uses caves and buildings.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Western yellow bat *Lasiurus xanthinus*	Found in valley foothill riparian, desert riparian, desert palm oasis and desert wash. Roosts in trees, particularly palms. This species forages over water and among trees.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: ND	None. Foraging and nesting habitat not present.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
California mastiff bat *Eumops perotis californicus*	Historically from north-central California south to northern Baja California, eastward across the southwestern United States, and northwestern Mexico to west Texas and Coahuila (Hall, 1981; Williams, 1986). In California, most records are from rocky areas at low elevations where roosting occurs primarily in crevices.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as caves in the nearby mountains.
Pocketed free-tailed bat *Nyctinomops femorasaccus*	Spotty distribution in California, ranging from Southern California south to the Baja Peninsula, and through southwestern Arizona to at least central Mexico (Williams, 1986). In California, pocketed free-tailed bats are typically found in rocky, desert areas with relatively high cliffs.	Warmer months. Nocturnal	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as crevices in the nearby mountains.
Big free-tailed bat *Nyctinomops macrotis*	Found from northern South America and the Caribbean Islands northward to the western United States (Williams, 1986). In the southwestern U.S., populations appear to be scattered. Recoded breeding localities are in parts of Arizona, New Mexico, and Texas. Prefers rocky, rugged terrain. Roosts in crevices in high cliffs or rocky outcrops. Ranges up to 8000 feet elevation.	Nocturnal spring - fall Hibernates in Winters	FED: ND STATE: SSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property if there are roosting sites such as crevices in the nearby mountains.
San Diego black-tailed jackrabbit *Lepus californicus bennettii*	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino and Santa Rosa mountain ranges.	Year round, diurnal and Crepuscular activity	FED: ND STATE: SSC	None. Jackrabbits were observed during the field surveys, but the geographic location of the property indicates that the individuals observed belonged to the desert race, and not the coastal race.
American badger *Taxidea taxus*	Most abundant in drier, open stages of most shrub, forest and herbaceous habitats. Friable soil for digging, food for foraging and uncultivated ground.	More active in spring and summer	FED: ND STATE: SSC	None. No sign was observed.

Table 1. Sensitive Biological Resources Potentially Present

Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
Palm Springs round-tailed ground squirrel *Spermophilus tereticaudus chlorus*	Prefers sandy arid sites, in low flat desert areas. Often found on sand dune, and will dig in fine sand on banks and around shrubs. Creosote bush scrub, mesquite shrub, saltbush scrub and palo verde, typical floodplain and alluvial fan species.	Year round	FED: C STATE: SSC	None. Suitable sandy mound and open flat habitats not present
Palm Springs pocket mouse *Perognathus longimembris bangsi*	Prefers sandy soil for burrowing. Found in creosote bush scrub, Joshua tree woodland. Coachella Valley.	Nocturnal; active late spring to early fall.	FED: ND STATE: SSC	None. Sandy mounded soils do exist on site, and no pocket mouse burrows were seen.
Pallid San Diego pocket mouse *Chaetodipus fallax pallidus*	Desert border areas in western Riverside County and eastern San Diego County. Desert wash, desert scrub, desert succulent scrub, pinyon juniper, etc. Sandy herbaceous areas, usually in association with rocks or coarse gravel.	Nocturnal; active year-round	FED: ND STATE: SSC	None. This species is found only in the desert slopes and washes. Suitable washes, fans and other areas not found on site.
San Diego desert woodrat *Neotoma lepida intermedia*	Moderate to dense canopies, particularly in rocky areas. Coastal sage scrub and chaparral. Coastal southern California.	Nocturnal; active year-round	FED: ND STATE: SSC	None. Site lacks suitable coastal sage scrub and chaparral habitats.
Grasshopper mouse *Onychomys torridus ramona*	In the more arid regions of southern California. Especially prefer sandy areas of the Mojave and Sonoran deserts, especially friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.	Year round	FED: ND STATE: SSC	None. While sandy habitats are present, the site lacks shrub cover.
Peninsular (Nelson's) bighorn sheep *Ovis canadensis nelsoni*	Prefers rugged terrain and can be found from near the valley floor to the tops of desert mountain ranges. This particular race is found in desert ranges from the White Mountains south to Mexico. They are also in the San Bernardino Mtns., and there is an isolated population in the San Gabriel Mountains.	Year round, seasonal elevation movement.	FED: END, DPS* STATE: THR. CFP *A Distinct Population Segment in the Santa Rosa and San Jacinto Mtns.	None. Local bighorn sheep from the north or from the Santa Rosa and San Jacinto Mountains are not expected to move through the site on a regular basis due to human activity in the local area.
Invertebrates				
Coachella Valley sand treader cricket *Macrobaenetes valgum*	Known from sand dunes ridges in the vicinity of the Coachella Valley. The population size is regulated by the amount of rainfall; some areas favor permanent habitation where springs dampen the sand year-round.	Year round?	FED: ND STATE: ND	None. Sand dune ridges and sand dune habitats are not present.

Table 1. Sensitive Biological Resources Potentially Present

Resource	**Habitat And Distribution**	**Activity Period**	**Status Designation**	**Occurrence Probability**
Coachella Valley Jerusalem cricket *Stenopelmatus cahuilaensis*	Known from a small segment of the sand and dune areas of the Coachella Valley, in the vicinity of Palm Springs. Found in large, undulating dunes piled up at the north base of the San Jacinto Mountains.	Year round?	FED: ND STATE: ND	None. Sand dune ridges and suitable sand dune habitat are not present. Project site is outside the recorded range.
Sensitive Habitats and Plant Communities				
Mesquite Bosque	Present primarily in built-up, stabilized sand dunes.	Year round	Declining habitat	None. Mesquite bosques are not present on site.
Desert fan palm oasis woodland	Found where springs occur or water table is very shallow.	Year round	FED: ND STATE: ND	None. Not present on site.
Joshua tree woodland	Most of the Mojave Desert and parts of the Colorado Desert.	Year round	Protected by local ordinance	None. No Joshua trees or woodlands present on site.

Legend

FED: Federal Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
PE	Taxa proposed to be listed as endangered
PT	Taxa proposed to be listed as threatened
C2*	The U.S. Fish and Wildlife Service (USFWS) revised its classifications of candidate taxa (species, subspecies, and other taxonomic designations). Species formerly designated as "Category 1 Candidate for listing" are now known simply as "Candidate". The former designation of "Category 2 Candidate for listing" has been discontinued. The USFWS will continue to assess the need for protection of these taxa and may, in the future, designate such taxa as Candidates. NRAI has noted the change in species status by marking with an asterisk (*) those C2 candidates that were removed from the list.
C	Candidate for listing. Refers to taxa for which the USFWS has sufficient information to support a proposal to list as Endangered or Threatened and issuance of the proposal is anticipated but precluded at this time.
BCC	Bird of Conservation Concern due to declines in populations from habitat degradation, destruction and negative human interactions (illegal collection, accidental injury or kill, unintentional entrapment in fishing or hunting gear).
ND	Not designated as a sensitive species

STATE: State Classifications

END	Taxa listed as endangered
THR	Taxa listed as threatened
CE	Candidate for endangered listing
CT	Candidate for threatened listing
CFP	California Fully Protected. Species legally protected under special legislation enacted prior to the California Endangered Species Act.
SSC	Species of Special Concern. Taxa with populations declining seriously or that are otherwise highly vulnerable to human development.
SA	Special Animal. Taxa of concern to the California Natural Diversity Data Base regardless of their current legal or protected status.
WL	Watch list.
ND	Not designated as a sensitive species

CNPS: California Native Plant Society Classifications

1A	Plants presumed by CNPS to be extinct in California
1B	Plants considered by CNPS to be rare or endangered in California and elsewhere
2B	Plants considered by CNPS to be rare, threatened or endangered in California, but which are more common elsewhere.
3	Review list of plants suggested by CNPS for consideration as endangered but about which more information is needed.
4	Watch list of plants of limited distribution whose status should be monitored

CNPS: Threat Codes (new as of 2006)

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Fairly endangered in California (20-80% occurrences threatened)

.3 Not very endangered in California (<20% of occurrences threatened, or no current threats known)

Occurrence Probabilities

Occurs	Observed on the site during this study or recorded on site by other qualified biologists.
Expected	Not observed or recorded on site, but likely to be present at least during a portion of the year.
High	Known to occur in the vicinity of the project site. Suitable habitat exists on site.
Moderate	Known to occur in the vicinity of the project site. Small areas or marginally suitable habitat exist on site.
Low	No reported sightings within the vicinity of the project. Available habitat limited and rarely used.
None	Focused surveys did not locate the species, or suitable habitat does not exist on site.
Unknown	No data is available on whether species is on or in the vicinity of the site, and information about the species is insufficient to make an accurate assessment of probability occurrence.

Appendix C Phase I Archaeological and Paleontological Resources Assessment dated January 2024

ArchaeoPaleo Resource Management, Inc.
A full-service Archaeology and Paleontology company
SBE/WBE/WOSB/DBE/UDBE/EBE/LBE/SLBE/CBE/VSBE/MicroBE Certified

Phase I Archaeological and Paleontological Resources Assessment for the Rancho Mirage 9 Lot Subdivision Project, City of Rancho Mirage, Riverside County, California

Prepared for:

72094 Ginger Rogers Road LLC
Mr. Farhad Zomorodi
PO Box 1054
Beverly Hills CA 90213

Authors:

Robin Turner, M.A.
Sam Parekh, B.A.
Skyland Dallal Rice, B.A.

Edited by:

Robin Turner, M.A.

Date: January 2024

Key Word(s): CEQA, City of Rancho Mirage, Riverside County, Single Family Homes, Archaeological Resource Assessment, USGS 7.5' Topographic Quadrangle: Cathedral City, CA 2023

CONFIDENTIALITY NOTE: This document contains sensitive or confidential information regarding the location of archaeological sites which should not be disclosed to the general public or other unauthorized persons. Archaeological and other heritage resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. Therefore, information regarding the location, character, or ownership of archaeological or other heritage resources is exempt from the Freedom of Information Act pursuant to 16 USC 470w-3 (National Historic Preservation Act) and 16 USC Section 470(h) (Archaeological Resources Protections Act). This report and records that relate to archaeological sites information maintained by the Department of Parks and Recreation, the State Historical Resources Commission, or the State Lands Commission are exempt from the California Public Records Act (Government Code Section 6250 et seq., see Government Code Section 6254.19). In addition, Government Code Section 6254 explicitly authorizes public agencies to withhold information from the public relating to Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.

EXECUTIVE SUMMARY

ArchaeoPaleo Resource Management, Inc. (APRMI) was contracted by 72094 Ginger Rogers Road LLC to perform a Phase I Archaeological and Paleontological Assessment of the Tentative Tract Map (TTM) 23-001 (TTM 38636) Rancho Mirage 9 Lot Subdivision Project. The Project proponents plan to subdivide 5.04 acres into nine lots, plus a private road, for the development of single-family homes located on the north side of Ginger Rogers Road and east side of Landy Lane within the City of Rancho Mirage, Riverside County. Township and Range address for the Project location is Township 4 South, Range 6 East, Section 30, as denoted on the 7.5' United States Geological Survey Topographic Map of the Cathedral City Quadrangle. Currently, the Project site is vacant, excepting one existing single-family home along Ginger Rogers Road. The Project is located on loose fine sand, which has been blown by prevailing winds over the older alluvial gravel and sand. These geologic sediments date back to the Pleistocene Epoch during the most recent Ice Age.

APRMI requested a paleontological records check on September 14, 2023, from the Western Science Center located in the City of Hemet, California. This records check is intended to identify any subsurface paleontological deposits that have been previously recorded directly on the Project site or surrounding area. APRMI received the records check results on December 28, 2023, and the Collections Manager for the Western Science Center has determined the sedimentary units as loose fine sands from the Holocene Epoch. Deeper excavation in the early Holocene and Pleistocene Epochs could contain fossil remains, but shallow excavation in the site would unlikely contain fossil materials. No known fossil localities were identified within the immediate Project area or a 1-mile radius from the site.

On September 14, 2023, APRMI requested a cultural records search by the Eastern Information Center to identify the presence of any previously recorded cultural resources within the Project area or within a one-mile radius. APRMI received the results of the cultural records search on November 27, 2023. The records indicate that there are no previously known cultural resources within the Project area, but multiple historic and prehistoric sites, including two cremations, are present within a 1-mile radius of the Project area.

In accordance with Assembly Bill 52 APRMI staff also requested a Sacred Lands File Search and a Native American Contacts list for the proposed Project from the Native American Heritage Commission (NAHC) on September 14, 2023 (see Regulatory Setting). The NAHC's search of the Sacred Lands File and a Native American Contacts list was received by APRMI on November 17, 2023. APRMI contacted the relevant tribes and interested parties telephonically the same day and mailed letters with details of the Project on November 22, 2023. APRMI was contacted telephonically on November 20, 2023, by Patricia Garcia of the Agua Caliente Band of Cahuilla Indians, who expressed concern over the uncovering of cremations near to the Project site. Another member of the Agua Caliente Band of Cahuilla Indians, Xitaly Madrigal, followed up on December 5, 2023, and requested by email AB 52 consultation and the employment of a tribal monitor during construction activities.

A field reconnaissance survey was conducted on September 28, 2023, to identify the presence of any surficial archaeological or paleontological resources on the site of the Project and assist in determining if the Project will have any significant adverse effects on such resources. The Project site consists of sparse vegetation and loose fine sand over quaternary alluvium. A pre-existing

single-family home was present on the site. Once on site, APRMI surveyors noted evidence that the undeveloped land appeared to have previously been utilized as an illegal refuse dump. Some of the material observed appears to be of historic value. No paleontological resources were observed during the survey.

Because to the high sensitivity for the uncovering of cultural and/or tribal resources during ground-disturbing activities, including human remains, APRMI recommends that in addition to the tribal monitor requested by the Agua Caliente Band of Cahuilla Indians, a qualified archaeologist is present on-site during any ground-disturbing activities. Because of the relatively low paleontological sensitivity of the Project excavation for tract housing, APRMI recommends that a qualified paleontologist be retained to conduct a Worker's Environmental Awareness Program training session so that Project personnel can recognize paleontological resources if they are uncovered during construction. A full list of recommendations can be viewed in Section 9.0.

ACRONYMS

AB	Assembly Bill
AF	Artificial Fill
AMSL	Above Mean Sea Level
APRMI	ArchaeoPaleo Resource Management, Inc.
BCE	Before Common Era
BP	Before Present
bgs	Below Ground Surface
CCR	California Code of Regulations
CE	Common Era
CEQA	California Environmental Quality Act
CHL	California Historic Landmarks
CHRIS	California Historical Resources Information System
CPHI	California Points of Historical Interest
CRHR	California Register of Historical Resources
CRM	Cultural Resource Management
CPR	Common Pool Resource
GIS	Geographic Information Systems
GBCBP	Great Basin Concave Base Point
HCM	Historic Cultural Monument
HRI	Historic Resources Inventory
HSC	California Health and Safety Code
HTMC	Historic Topographic Map Collection
IP	Invertebrate Paleontology
MM-CR	Mitigation Measure-Cultural Resource
MM-PAL	Mitigation Measure-Paleontology
mya	Million Years Ago
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NHMLA	Natural History Museum of Los Angeles County
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
Qa	Quaternary Alluvium
PMTP	Paleontological Management Treatment Plan
PRC	Public Resources Code
RPA	Registered Professional Archaeologist
SOI	Secretary of the Interior
EIC	Eastern Information Center
SVP	Society for Vertebrate Paleontology
USGS	United States Geologic Service
VP	Vertebrate Paleontology

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1.0 INTRODUCTION

1.1 Project Description

The Tentative Tract Map (TTM) 23-001 (TTM 38636 Rancho Mirage 9 Lot Subdivision project (Project) proposes to develop a predominately vacant 5.04-acre plot within the City of Rancho Mirage, Riverside County, California, into nine individual lots with a private road and landscaping along road frontage. These individual lots range from 0.42 to 0.45 acres and will be used for the construction of single-family homes. Currently, the Project area is zoned as R-L-2, which under the 2017 City of Rancho Mirage General Plan is designated Very Low Density Residential, intended for individual lots of approximately 0.5 acres.

The Project owner, 72094 Ginger Rogers Road LLC, contracted ArchaeoPaleo Resource Management, Inc. (APRMI) to perform a Phase 1 Archaeological and Paleontological Resources Assessment of the Project area. The purpose of this assessment is to determine the archaeological and paleontological sensitivity within the Project area. As part of this assessment, APRMI conducted a pedestrian field survey to identify the presence of any paleontological, archaeological, and/or tribal resources that may be within the Project boundaries. Other data collection methods included a paleontological records check, a cultural resource record search, a Scared Lands File records check, additional research, and Native American correspondence. This Phase 1 Archaeological and Paleontological Assessment report outlines the methods, results, and mitigation recommendations in further detail in the following sections.

1.2 Project Location

The Project site is located on the north side of Ginger Rogers Road and east side of Landy Lane within the City of Rancho Mirage, Riverside County (see Figures 1-3). Township and Range address for the Project location is Township 4 South, Range 6 East, Section 30, as denoted on the 7.5' United States Geological Society Topographic Map of the Cathedral City Quadrangle.

1.3 Natural Setting

The City of Rancho Mirage is located on the floor of the Coachella Valley to the east of the San Jacinto Mountains, the west of Joshua Tree National Park, and northwest of the Salton Sea. The city is largely built on either the alluvial sand and gravel of the valley floor, or the loose fine sand which had been blown over the valley by prevailing winds, although much of the city southwestern portion is next to the foothills of the San Jacinto Mountains and is part of the Magnesia Springs Ecological Reserve. Whitewater River's channel, which has been altered by a concrete structure by the Army Corps of Engineers, passes through the middle of the city. Native flora largely consists of cacti and shrubs, with mesquite, Creosote bushes, and Palo Verde being common plants. Native fauna include Peninsular Bighorn sheep, the Southwestern Willow Flycatcher, Prairie Falcon, Antelope Ground Squirrel, Roadrunners, the Desert Tortoise, and a variety of reptiles and insects. Desert Iguanas and evidence of ground squirrel activity were observed at the site during APRMI's field reconnaissance
.

1.4 Project Personnel

Robin Turner, M.A. is the Principal Investigator and President for APRMI. She holds a Master of Arts degree in Anthropology, with an emphasis on Public Archaeology, from California State University, Northridge. Ms. Turner has over 30 years of experience in the Cultural Resource Management (CRM) and the paleontological fields and has conducted major field and technical investigations throughout southern California. She meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology and is a qualified professional paleontologist per the Society of Vertebrate Paleontology's guidelines. Ms. Turner is a Research Associate at the Natural History Museum of Los Angeles County and at the George C. Page Museum of La Brea Discoveries, as well as a Scientific Advisor to the Buena Vista Museum of Natural History and Sciences in Bakersfield. She is also a past Planning Commissioner for the City of Culver City and is a past museum chair for the Culver City Historical Society. Ms. Turner served as the Principal Investigator for this project and is the final editor of this report.

Sam Parekh, B.A., is a Staff Historian for APRMI. He has a Bachelor of Arts in History and a second B.A. in Government & Politics from the University of Maryland, College Park, and a commission from the California Army National Guard. He has four years of experience cataloguing and inventorying artifacts for both the Wende Museum in Culver City, California and the Garstang Museum in Liverpool, England, and has assisted in conducting site surveys and testing for APRMI. He is experienced with historical research, computer data entry and formatting, and the preparation of OHP/DPR forms. Sam Parekh performed field reconnaissance and contributed to the writing for this report.

Skyland Dallal Rice, B.A. is a Staff Archeologist for APRMI. He holds a Bachelor of Arts in Anthropology from Reed College where he worked as research assistant for Professor Betsey Brada, for the Reed College Library assisting in the organization of Cultural Resources and wrote his senior thesis about Arab Jewish Identity in the US. He has since worked as a researcher for the HBO documentary, *Hostages* and worked on several other documentaries. Skyland has extensive experience conducting historical and anthropological research, writing, computer data entry and formatting. Skyland Dallal Rice performed field reconnaissance and contributed to the writing for this report.



Figure 1. Topographic regional overview of the Project area that is marked in red. Source: Esri, 2013 United States Geological Survey, National Geographic

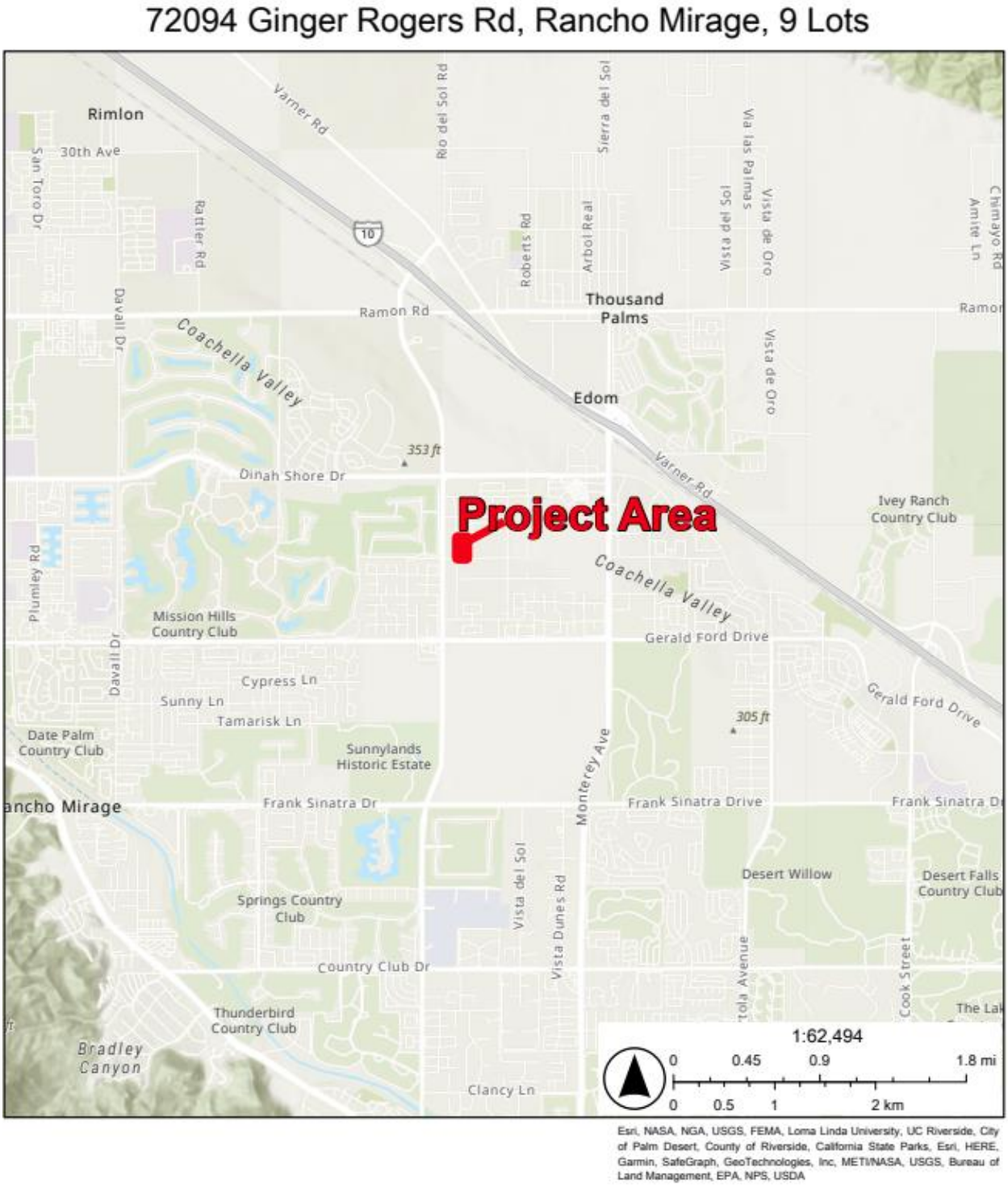


Figure 2. Topographic overview of the Project area that is highlighted in red. Source: Esri, 2013 United States Geological Survey, National Geographic



Figure 3. Satellite overview of Project area that is highlighted in red. Source: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

2.0 REGULATORY SETTING

While many of the stated Federal laws below do not apply to this Project, we have added them for continuity in Cultural Resources laws, as well as in case the City of Rancho Mirage deems them to be required at a later date if the Project requirements change prior to or during construction.

2.1 Federal Laws

2.1.1 Antiquities Act of 1906

The Antiquities Act of 1906 (16 USC § 431 *et seq*.) provides for the establishment and preservation of national monuments, historic landmarks, and historic or prehistoric structures, or other items of interest on federally owned lands. Additionally, Section 433 of this act prohibits the purposeful taking, excavation, damage, and destruction of historic or prehistoric ruins, monuments, or other objects of antiquity on federally owned lands. Other "objects of antiquity" are interpreted to include paleontological remains.

2.1.2 National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) of 1969, specifically P.L. 91-190, 83 Stat. 852, 42 USC §§ 4321-4327, mandates the preservation of "important historic, cultural, and natural aspects of our national heritage" (§101.b4). In addition, NEPA is interpreted as providing for the protection and preservation of paleontological remains.

2.1.3 Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) mandates the following:

> The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register [of Historic Places (NRHP)]. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation [The Council], established under Title II of this Act, reasonable opportunity to comment with regard to such an undertaking. [16 U.S.C. § 470f]

An effect, or "adverse effect," as defined by 36 CFR § 800.5 (a)(1), occurs

> when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register [NRHP] in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

To further clarify the meaning of what constitutes an adverse effect, 36 CFR § 800.5 (a)(2) identifies the following: physical destruction, alteration that is not in keeping with the *Secretary of the Interiors Standards for the Treatment of Historic Properties* per 36 CFR §68, removal, change of use, alteration of property setting, relocation, application of intrusive elements, neglect, and change

of ownership (federal to non-federal).

The NHPA (16 U.S.C. § *et seq.*) defines a historic resource as significant if eligible for inclusion in the NRHP as defined by one of four eligibility criteria set forth in 36 CFR § 60.4A. Determination of historic resource significance is carried out via implementation of the Section 106 process of the NHPA, as set forth by the Council per 36 CFR § 800 "Protection of Historic Properties." Such significant historic resources can include archaeological sites of pre-historic or historic context, historic buildings, structures, or objects of state, local, or federal importance that retain integrity of location, design, setting, feeling, association, material, and/or workmanship and

(A) Are associated with events which have made a significant contribution to the broad patterns of our history, or
(B) Are associated with the lives of persons significant in our past, or
(C) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or are representative of significant and distinguishable entity of which the component may lack individual distinction, or
(D) Yield, or are likely to yield, data important to our understanding of prehistory and/or history.

2.1.4 Native American Graves Protection and Repatriation Act (25 USC Section 3001 et seq.)

The discovery of human remains is always a possibility during construction-related disturbances. The Native American Graves Protection and Repatriation Act, or NAGPRA, was enacted November 16, 1990. It states that the "ownership or control of Native American cultural items," which include human remains, funerary objects, sacred objects, and objects of cultural patrimony, that are "excavated or discovered on Federal or tribal lands" after the law went into effect is held by the lineal descendants of the Native American (or Hawaiian) to whom the objects originally belonged. If the lineal descendants cannot be found then their ownership is conferred to the "Indian" tribe or Native Hawaiian organization on whose land the objects or remains were discovered or that has the closest cultural affiliation.

2.2 State Laws

2.2.1 California Register of Historical Resources (PRC §5024.1)

The California State Historical Resources Commission enacted Public Resources Code §5024.1, which established the California Register of Historical Resources (CRHR). The statute encourages public recognition and protection of resources of architectural, historical, archaeological, and cultural significance. The register itself is a listing of all properties considered to be significant historical resources in the state. Resources are considered significant (and thus eligible for the register) if they retain integrity and meet one of the following criteria:

1) Associated with events which have made a significant contribution to the broad patterns of California's history and historical heritage
2) Associated with the lives of persons significant in California's past
3) Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or
4) Yield, or are likely to yield, information important in prehistory or history.

The California Register specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources, which must be given consideration under CEQA (see below). Other resources, such as resources listed on local registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register is not automatic.

According to the federal laws to which the State of California defers when its own laws do not apply to a situation, historical resources are evaluated if they are 50 years or older, unless they are exceptional according to a set of criteria considerations. The Instructions for Recording Historical Resources (California Office of Historic Preservation [OHP] 1995:2) states that "[a]ny physical evidence of human activities over 45 years old may be recorded for purposes of inclusion in the OHP's filing system." This five-year difference is to compensate for the amount of time that usually occurs between a resource's discovery and its official documentation as well as the implementation of any mitigation procedures.

2.2.2 California Environmental Quality Act

The California Environmental Quality Act (CEQA) is a statute that requires state and local agencies to identify significant environmental impacts of their actions, including damages to cultural or historical resources, in order to avoid or mitigate those adverse impacts or changes. §5020.1 of CEQA establishes "substantial adverse change" as the "demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired" (see below for the definition of *historical resource*). The "threshold of significance" is the level at which a lead agency finds the effects of a Project to be significant.

The destruction of unique, non-renewable cultural resources is a significant impact on the environment that requires mitigation of the impact. Construction excavation in archaeologically sensitive deposits that underlie a Project Area is a significant impact that could be prevented, minimized, or mitigated through the development of project alternatives (e.g., avoidance of the cultural resource) or mitigation measures for the purpose of recovering data that might otherwise be destroyed (e.g. archaeological excavation prior to construction excavation and archaeological monitoring of construction excavation of a known site; or archaeological monitoring of construction excavation of an archaeologically sensitive area). Even if a historical resource, an archaeological site, or human remains cannot be identified within a project area before project implementation (i.e., if the resources are not visible on the surface during a Phase I survey, or if Extended Phase II testing does not reveal subsurface archaeological material), the area may still be archaeologically sensitive, based on the characteristics of the environmental background of the area or its current environmental setting, and that said resources are predicted to exist within the project area/remains could be present within the project area. Mitigation measures to avoid project impacts to as-yet undiscovered historical resources or human remains may be employed by the Lead Agency, even if these resources have not been identified within or adjacent to the project area. A study must consider a project's current baseline environmental setting and physical conditions so that the lead agency can determine whether project impacts would cause a significant change to that environment.

§15091(a) and (d) of the CEQA Guidelines require the Lead Agency to adopt a program for

reporting on or monitoring the changes—that it has either required for the project or has made a condition of approval—in order to avoid or substantially lessen significant environmental effects. A Mitigation Monitoring and Reporting Program (MMRP) provides for the monitoring of mitigation measures that may be required by a project's Environmental Impact Report (EIR), if the EIR identifies potentially significant adverse impacts and mitigation measures to reduce those impacts to a less-than-significant level. An archaeological resources/built environment data recovery or monitoring plan may be part of an MMRP if archaeological resources/built environment will be affected.

A significant historical resource, as defined by CEQA, is referred to as a "Historical Resource." Such Historical Resources have been determined eligible for inclusion in the CRHR per Title 14, California Code of Regulations (CCR), §15064.5(a)(3), and include historic properties eligible for inclusion on the National Register of Historic Places (NRHP) per PRC §5024.1, or are historically significant at a local level, such as a city, town, community, or county.

Paleontological resources are protected by Appendix G (Part V) of CEQA, which indicates that the destruction of unique, non-renewable paleontological resources is a significant impact on the environment that requires mitigation of the impact. It specifically asks whether a project would "directly or indirectly destroy a unique paleontological resource or site or unique geological feature." Excavations in paleontologically sensitive deposits that underlie a project area is a significant impact that can be mitigated via the salvage and identification of excavated fossils from the deposit.

2.2.3 California Administrative Code

Title 14, Section 4307 of the California Administrative Code states that "no person shall remove, injure, deface, or destroy any object of paleontological, archaeological, or historical interest or value."

2.2.4 Public Resources Code

Section 5097.5 and Section 30244. of the California Public Resources Code (PRC) protects both cultural and paleontological resources. Section 5097.5 states that

> "a person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands."

Section 5097.5 also states that "a violation of this section is a misdemeanor, punishable by a fine not exceeding ten thousand dollars ($10,000), or by imprisonment in a county jail not to exceed one year, or by both that fine and imprisonment." This section defines public lands as "lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof."

Section 30244 states that "where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable

mitigation measures shall be required."

2.2.5 Native American Heritage Act

The Native American Heritage Act, passed by California in 1976, established the Native American Heritage Commission (NAHC) for the purpose of protecting Native American religious values on state property (PRC §5097.9). The NAHC not only protects the heritage of California Native Americans, but also ensures their participation in matters concerning heritage sites. The commission's duty is to assist both federal and state agencies in protecting Native American sacred places and provide recommendations concerning Native American heritage in accordance with environmental law and policy. As required by Government Codes §65352.3 and §65562.5, for purposes of consultation with California Native American Tribes, the NAHC maintains a list of California Native American Tribes with whom local governments and public agencies must consult.

The act also protects burials from disturbance, vandalism, and accidental destruction. It stipulates what specific procedures, laid out in the California Health and Safety Code (HSC), must be implemented if a Native American burial is uncovered during project construction or archaeological data recovery.

2.2.6 Assembly Bill 52

Assembly Bill (AB) 52, was approved and passed on September 25, 2014, by California State Governor Gerry "Jerry" Brown, Jr. The act has amended California PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3, relating to California's Native American populations. Assembly Bill 52 applies to projects in which a Notice of Preparation (NOP) or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) would be filed on or after July 1, 2015. This bill recognizes California Native American tribes' expertise regarding cultural resources and provides a method for agencies to incorporate tribal knowledge into their CEQA environmental review and decision-making processes. California Native American tribes can now establish a standing request to consult with a lead agency regarding any proposed project subject to CEQA in the geographic area with which the tribe is traditionally and culturally affiliated. The definition of tribal cultural resources, as per PRC Section 21074(a)(1) and (2), are considered as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources. A tribal cultural resource may also be determined by a lead agency, in its discretion and supported by substantial evidence. PRC section 21080.3.1(a-e) outlines and defines the initial consultation process required from the lead agency as follows:

21080.3.1(a): The Legislature finds and declares that California Native American tribes traditionally and culturally affiliated with a geographic area have expertise concerning their tribal cultural resources.

21080.3.1(b): Prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report for a project, the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

(1) The California Native American tribe requested to the lead agency, in writing, to be

informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe, and

(2) The California Native American tribe responds, in writing, within 30 days of receipt of the formal notification, and requests the consultation. When responding to the lead agency, the California Native American tribe shall designate a lead contact person. If the California Native American tribe does not designate a lead contact person, or designates multiple lead contact people, the lead agency shall defer to the individual listed on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004. For purposes of this section and Section 21080.3.2, "consultation" shall have the same meaning as provided in Section 65352.4 of the Government Code.

21080.3.1(c): To expedite the requirements of this section, the Native American Heritage Commission shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the project area.

21080.3.1(d): Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

21080.3.1(e): The lead agency shall begin the consultation process within 30 days of receiving a California Native American tribe's request for consultation.

Under PRC section 21080.3.2 (a) the following topics are potential consultation discussions:

- The type of environmental review necessary
- The significance of tribal cultural resources
- The significance of the project's impacts on the tribal cultural resources
- Project alternatives
- Appropriate measures for preservation
- Mitigation measures

Consultation is considered complete if the parties agree to measure(s) to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or if a party acting in good faith and after reasonable effort, concludes that a mutual agreement cannot be reached (PRC 2108.3.2(b) (1-2)). This section does not limit the ability of a California Native American tribe or the public to submit information to the lead agency regarding the significance of the tribal cultural resources, the significance of the project's impact on tribal cultural resources, or any appropriate measures to mitigate the impact. This section also does not limit the ability of the lead agency or project proponent to incorporate changes and additions to the project as a result of the consultation, even if not legally required. If the project proponent or its consultants participate in the consultation, those parties shall respect the principles set forth in this section.

PRC section 21082.3(a)(b) requires any mitigation measures agreed upon in the consultation conducted pursuant to PRC section 21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact of tribal cultural resources. If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following: (1) Whether the proposed project has a significant impact on an identified tribal cultural resource. (2) Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource.

Any information including, but not limited to, the location, description, and the use of the tribal cultural resources, that is submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the tribe that provided the information. If the lead agency publishes any information submitted by a California Native American tribe during the consultation or environmental review process, that information shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public (PRC section 21082.3(c). If a California Native American tribe has requested consultation pursuant to PRC section 21080.3.1 and has failed to provide comments to the lead agency, failed to engage in the consultation process, or if the lead agency has complied with PRC section 21080.3.1(d) and the California Native American tribe has failed to request consultation within 30 days, the lead agency may certify an Environmental Impact Report or adopt a Mitigated Negative Declaration.

Suggested mitigation measures after lead agencies determine that a project may cause a substantial adverse change to tribal cultural resources are outlined under PRC section 21084.3 as follows:

- Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
- Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
- Protecting the cultural character and integrity of the resource.
- Protecting the traditional use of the resource.
- Protecting the confidentiality of the resource.
- Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
- Protecting the resource.

2.2.7 California Health and Safety Code

Section 7050.5 of the HSC states that if human remains are found, construction and/or excavation must cease within the general vicinity, and the remains must be inspected by the county coroner. If the coroner determines that they are Native American in origin, then the coroner must contact the NAHC. The NAHC will then determine and notify a Most Likely Descendant (MLD). The MLD

must complete inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Sections 8010-8011 of the HSC establish a state repatriation policy that is consistent with and facilitates implementation of NAGPRA. NAGPRA was passed in 1990 and required that museums and federal agencies document all Native American human remains within their collections, or uncovered on projects, as well as their cultural ties. These agencies must then notify any tribe that may be affiliated with the remains and provide the opportunity for their repatriation along with any associated cultural items (grave goods). The California state version (Cal NAGPRA) mandates publicly funded agencies (state and local government agencies) and museums to repatriate human remains and associated cultural items to California Native American Tribes, not just federally recognized tribes within California, and establishes penalties for noncompliance.

2.3 Local Laws

2.3.1 City of Rancho Mirage General Plan

The City is obligated to assure that every reasonable effort is made to locate, identify, and evaluate archaeological, historical, and cultural sites within its jurisdiction. As time passes and the community continues to develop, opportunities for documenting and preserving archaeological and historic sites and artifacts will decrease. The City must determine what actions or development activities have the potential to adversely affect known or suspected sites of historic or cultural significance. The City should encourage research, documentation, and recordation to register appropriate sites and structures in the community and vicinity.

GOAL COS 8 The preservation, maintenance, continuity, and enhancement of cultural heritage and resources in Rancho Mirage, including historic and prehistoric sites, objects, landscapes, and structures.

POLICY COS 8.1 The City shall exercise its responsibility to preserve archaeological, historical, and cultural sites.

PROGRAM COS 8.1A Establish and maintain an archaeological and historical resources database.

PROGRAM COS 8.1B Maintain a preservation ordinance to provide for the designation and protection of historic resources.

PROGRAM COS 8.1C Continue to promote historic preservation incentives, such as enabling the use of Mills Act contracts to lower property taxes on designated resources.

PROGRAM COS 8.1D Develop an education program to familiarize residents and visitors alike with the city’s architectural and historical heritage.

POLICY COS 8.2 Development or land use proposals that have the potential to disturb or destroy sensitive cultural resources shall be evaluated by a qualified professional and appropriate mitigation measures shall be incorporated into project approvals, if necessary.

PROGRAM COS 8.2A Encourage in-place preservation or the recovery and preservation of materials for later study and display when reviewing development proposals and cultural surveys that identify sensitive resources.

PROGRAM COS 8.2B Perform an annual records search in the Native American Heritage Commission and California Historic Resources Information System databases to determine the presence of potential cultural resources in the boundaries of the city and the SOI.

PROGRAM COS 8.2C Continue to adhere to the requirements of SB 18 of 2004 and AB 52 of 2014, as applicable, by consulting with local Native American tribes on potential disturbance, recovery, and preservation of tribal cultural resources.

POLICY COS 8.3 The City shall ensure the protection of sensitive archaeological and historic resources from vandalism and illegal collection.

PROGRAM COS 8.3A Maintain mapping information and similar location oriented resources in a confidential manner and assure that only those with appropriate professional and organizational ties are provided access to these sensitive records.

POLICY COS 8.4 The City shall support the listing of eligible properties, structures, or sites as potential historic landmarks and their inclusion in the National Register of Historic Places.

PROGRAM COS 8.4A Periodically review the historical and archaeological resources of the area in cooperation with local historical associations for possible application for status as a historical landmark or inclusion in the National Register of Historic Places.

PROGRAM COS 8.4B Conduct meetings with City staff and elected officials to prioritize and propose action on the preservation and registration of important archaeological and historical resources in the community and vicinity.

3.0 CULTURAL SETTING

3.1 Pre-History (circa 6000 B.C. to 1774 A.D.)

Prehistoric period divisions are generally taken from Warren's "The Desert Region" in *California Archaeology* (1984).

3.1.1 Archaic Period (circa 6000 B.C. to circa 800 A.D.)

The earliest evidence of human occupation of the Colorado Desert comes from the San Dieguito period and is typified by cleared circles on desert pavement surfaces and the tops of mesas and terraces. This identification is highly tentative, however, and precise dating is virtually impossible, although it is generally agreed to have been in excess of 6000 B.C. The first solid date of human activity at 2080 ± 100 B.C. comes from the radiocarbon dating of an inhumation found at the Indian Hill Rockshelter (Schaefer 1994). This places it squarely during the transition from the Pinto Period to the Gypsum Period. The Pinto Period is typically dated by its projectile point types, which are characterized by indented or bifurcate bases and robust basal ears, and were manufactured through soft hammer percussion of bifaces, slabs, and flake blanks followed by varying degrees pressure

flaking (Justice 2002, 126). Some examples possess either horizontal or downwards-projecting shoulders, but continual resharpening often wore these away either completely or into a variety of other forms (Justice 2002). Population density during this period was extremely low, and the small groups present in the area likely practiced a residential foraging strategy (Schaefer 1994). The Gypsum Period is also typically dated by its projectile points, although in the Colorado Desert specifically these are likely not Gypsum points, but Elko Eared points (Warren 1984). These are corner-notched points made from trianguloid pre-forms, an indented or concave base, and basal ears. They often have wide shoulders and were manufactured through an initial percussion shaping followed by substantial amounts of pressure flaking (Justice 2002, 298-9). The Colorado Desert during the Gypsum Period saw a moderate population increase and the adoption of a more mobile and flexible hunting and gathering strategy, including the adoption of seed- and mesquite-pod processing techniques and the use of the bow and arrow (Warren 1984). Notably, the Indian Hill Rockshelter site does show evidence of at least semi-permanent occupation (Schaefer 1994).

3.1.2 Late Prehistoric Period (circa 800 A.D. to circa 1200 A.D.)

While in the wider Southwest the Late Prehistoric or Saratoga Springs Period is generally considered as beginning in 500 A.D., the techniques of creating pottery (of the Lower Colorado Buff and Tizon Brown types) and the Cottonwood Triangular and Desert Side-Notched points reached the Colorado Desert only in circa 800 A.D (Warren 1984). Cottonwood Triangulars are small, unnotched, lightweight, triangular points intended for use on arrows. There is a wide variety within this type of point, and it is possible that some "Cottonwood Triangulars" are merely Desert Side-Notched pre-forms which were left unfinished (Justice 2002, 367). As may be inferred by this fact, Desert Side-Notched points are similar to Cottonwood Triangulars, with the addition of two typically narrow and deep side notches which are placed towards the basal edge of the blade, leaving angular ears. The pre-forms are manufactured through percussion, and then finished with extensive pressure flaking (Justice 2002, 379). Lower Colorado Buff Ware is a broad category, with five or more subtypes, and is characterized by its light color and the use of paddle-and-anvil shaping and sedimentary clays. Tizon Brown Ware is an even broader category, with up to 16 subtypes, and is characterized by its brown color and use of paddle-and-anvil shaping (Society for California Archaeology 2023). Whether several specific subtypes (including Salton Ware, which is most likely possible to find within a Rancho Mirage site) should be classified as either Lower Colorado Buff or Tizon Brown is an object of contention within the archaeological community. Lake Cahuilla was once fed by the Colorado River and was likely filled from approximately 900 A.D. to 1200 A.D., although the exact dates for this, and whether or not it was interrupted by dry periods, is still under debate (Rockwell et al. 2022) It is during this period that the ancestors of the Cahuilla people can first be definitively identified as living in the area. They adapted their lifeways from the Hakataya (also known as the Patayan) culture on the Colorado River to the shores of Lake Cahuilla, which included dispersed seasonal settlements, stone food caches, lacustrine and riparian food sources, and perhaps a limited reliance on agriculture (Schaeffer 1994). The old shoreline of Lake Cahuilla, which extended approximately 35 kilometers to northwest of the current Salton Sea, has been found to have a high concentration of artifacts and village sites due to the availability of fresh water and lacustrine food sources. The Rancho Mirage site is approximately 10 kilometers further northwest. Notably, adoption of Hakataya lifeways did not include complete language or cultural replacement, as the Cahuilla still speak a Takic language and share elements of their cosmology and myths with other Takic groups (Bean 1978).

3.1.3 Protohistoric Period (circa 1200 A.D. to 1774 A.D.)

Material culture remained largely unchanged between the Late Prehistoric and Protohistoric Periods, although an increase in the frequency of trade led to some Hohokam art forms being introduced to the area from the east, along with greater production from the turquoise mines which lie to the north of the Colorado Desert (Warren 1998). Lake Cahuilla filled again for portions of this period, although dry spells were frequent, and the final desiccation occurred circa 1600 A.D (Schaeffer 1998). The Cahuilla people continued to largely live in seasonal settlements, adjusting the frequency and length of their visits to the environmental conditions, though the young, the weak, and the old likely were left behind in a clan's permanent village year-round (see Figure 4). During dry periods, or when fresh water was not available on the surface, the Cahuilla would utilize walk-in wells, tunnels into the earth where the water-table was relatively high, often with steps at the bottom into the pool (James 1960). From the desert floor, Cahuilla gathered or grew cacti, palm, mesquite pods, Mohave yucca, screwbean, catsclaw, Mariposa lily, desert lily, ephedra, corn, beans, squash, and melons, and hunted deer, rabbits, antelopes, mice, rats, mountain sheep, reptiles, insects, fish, quail, doves, ducks, and roadrunners. From the desert foothills, they gathered or grew cacti, agave, mushrooms, yucca, oak acorns, juniper, manzanita, sugar bush, tule, various grass seeds, chia, cat-tails, wild onion, and wild roses. They hunted the same animals as on the desert floor, with the exception of antelopes, which were not present in that location. In the lower reaches of the mountains themselves, they gathered oak acorns, elderberries, service berries, manzanita, wild cherries, yucca, tule, various grass seeds, chia, and cat-tail, and hunted mountain sheep, deer, pack rats, squirrels, mice, chipmunks, and fish (Bean, 1978, 576). Houses were constructed of arrow weed, willow, or palm, and were generally squatly conical, built over a depression in the ground with a hole in the center of the roof to let smoke escape (James 1960). Raised granaries, sweat houses, and meeting buildings, constructed of the same materials, were established within the permanent villages. The largest Cahuilla political unit was a clan, which was generally composed of three to ten familial lineages, controlled a permanent village site, and was led by a *Nét*, a leadership position generally inherited under a primogeniture system, although if the eldest son was deemed unfit to be a leader other sons could be chosen (Strong 1929). Second to the *Nét* was the *páxa?,* who arranged the details of rituals and punished those who failed to obey the ritual strictures. This office was also generally inherited, under the same rules (Bean 1978). Various rituals, including mourning ceremonies, eagle ceremonies, rites of passage, and consecration of resources, provided much of the social structure for Cahuilla people.

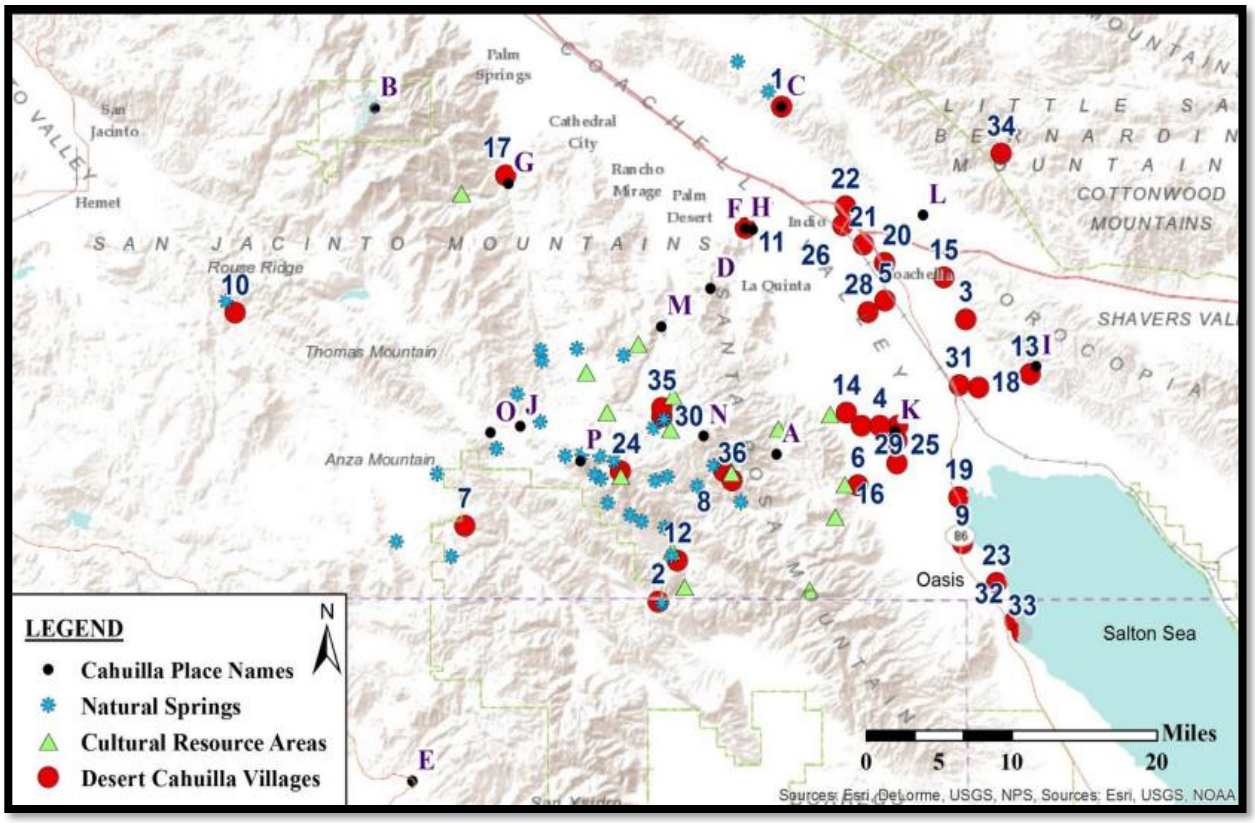


Figure 4. A map of Cahuilla villages and other landmarks in the area. From "The Desert Cahuilla: A Study of Cultural Landscapes and Historic Settlements" by Laurea Lewis.

3.2 Historic Period (1774 A.D. to 1973 A.D.)

3.2.1 Cahuilla Interactions with the Spanish and Mexicans (1774 A.D. to 1848 A.D.)

The Cahuilla's first known direct contact with Europeans resulted from the 1774 Juan Bautista de Anza expedition, although word of Spanish activities in Mexico had likely reached them long before then (Bean 1978). They reacted hostilely to the intrusion on the land, and in combination with the revolt of the Yuma to south which precluded land travel from Mexico and the relatively inhospitable nature of their territory in comparison to the Californian coast, kept Spanish presence in the area at a minimum. While the Cahuilla did adopt cattle ranching as a supplement to their other sources of food and began constructing square buildings, sometimes made out of adobe, there was relatively little disruption to their lifeways, although some Cahuilla did work seasonally for Spanish or Mexican employers (James 1960). Notably, Native American refugees from areas conquered by the Spanish often chose to flee to Cahuilla territory, and this period likely saw the adoption of some of the loanwords and cultural markers from coastal California tribes which are still visible in Cahuilla today (James 1960). As settlement of California continued, certain clans of the Cahuilla became more closely tied with Mexican elites, and sometimes served in conflicts against other Native American tribes as auxiliary units (Lech 2004). The Cahuilla often adopted Spanish names during this period

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3.2.2 American Invasion and Settlement (1848 A.D. to 1900 A.D.)

The Treaty of Guadelupe Hidalgo formally transferred control of California from Mexico to the United States in 1848, although the first formal interaction between the Cahuilla and American government (a treaty which went unratified) only occurred in 1851. By this point, the Cahuilla were one of the few Native American tribes in California which had survived the years of Spanish and Mexican rule largely unscathed. Throughout most of the period immediately following the accession of California into the Union, while governmental surveys in order to determine the suitability of lands for railroad placement and colonization were carried out, actual governmental action was relatively limited due to the distraction of the upcoming Civil War (Lech 2004). A combination of the Cahuilla's strength and the relative undesirability of their territory again served to keep their lands and social structure largely intact from "wildcat" settlers until 1863, when a devastating smallpox epidemic swept through many of the tribes, killing two-thirds or more of its population (Bean 1978). This was likely brought to them by miners from Los Angeles who were traveling southwards through the valley in order to reach the gold mines in La Paz, Arizona (Lech 2004). This route, known as Bradshaw's Road, also brought the first permanent white settlement to the Coachella Valley, with the establishment of two small ranches and water stations in order to supply those traveling the route. Non-indigenous men continued to pass through the valley, rather than settle there, until 1876, with the construction of the Southern Pacific Railroad. The American government incentivized the construction of railroads with the grant of twenty square miles of land for every one mile of track laid. In order to fulfill this grant, the Cahuilla were relegated to a reservation in 1876, constructed out of a checkerboard of one square-mile plots, interspersed with railroad land (Lech 2004). Even these plots were slowly reduced in size over time through the later allotment system, eventually making it impossible to feasibly use the land for subsistence agriculture or hunting purposes (Nuttall 2019; Bean 1978). The first large-scale settlement project in the Coachella Valley began with the purchase of land in what is now Palm Springs by John McCallum, a Bay Area lawyer who had moved to the area for the beneficial properties the arid desert air was supposed to provide to his son who had contracted tuberculosis (Lech 2004). He, in concert with other investors, built a canal from the Whitewater River to area in order to irrigate various fruit orchards, then auctioned off plots to investors and settlers in 1887. This proved profitable enough for a time that two other settlement ventures, named Palmdale and the Garden of Eden, began in the same area, but a flood in 1893 severely damaged the canal and was then immediately followed by a drought. This, along with a revocation of the Garden of Eden's water rights in favor of the Cahuilla Native Americans, completely ended the latter two settlements and caused an exodus from Palm Springs (Lech 2004). The town of Indio began in 1876 as a station and temporary terminus for the Southern Pacific Railway, and at first grew slowly. The passage of the 1885 Desert Lands Act, which opened the land around Indio for homesteading, did little to encourage settlement. Until the 20th century, much of the town's population was still temporary railroad employees (Lech 2004). The towns now known today as Coachella and Mecca similarly began as railroad stations, and were called Walters and Woodspur, respectively. The discovery of a highly productive artesian well in Mecca in 1894 spurred the further development of railroad infrastructure, and a limited amount of agriculture in the surrounding areas (Lech 2004), but again population remained fairly limited.

3.2.3 "People of the Right Kind" – The Coachella Valley as a Desert Resort (1900 to 1973 A.D.)

While much of the Coachella Valley was originally settled for agricultural or infrastructure purposes, tourism has long been its primary industry. Palm Springs was the first city in the Coachella Valley to actively bill itself as a desert resort town, an effort that formally began in 1920

with the publication of the promotional book *Our Araby: Palm Springs and the Garden of the Sun* by J. Smeaton Chase. Chase made it clear that Palm Springs was intended only for wealthy whites, calling it "a region that is meant for… people of the right kind… the discerning few" (Chase 1920, 7). Newly wealthy Hollywood personalities provided much of the clientele. Desert resorts and country clubs sprang up across the valley, including in the area that would later be incorporated as Rancho Mirage. This area provided the location for the Coachella Valley's first 18-hole golf course. The construction of the Sunnylands Estate in 1966 by businessman and diplomat Walter Annenberg attracted numerous United States Presidents and dignitaries to the area, and Sunnylands provided a venue for several high-level summits between world leaders (Sunnylands Trust). The Cahuilla Native Americans continued to be driven off their land into the 1960s, when the City of Palm Springs took issue to them living on a plot of reservation land located in the city's downtown area referred to as Section 14. Prior to 1955, the federal government restricted Native Americans from leasing areas of the reservation to five or ten years, a short enough period it discouraged outside commercial development. In 1959, with the passage of the Indian Leasing Act, the maximum lease was extended to 99 years, making the Cahuilla land in downtown Palm Springs much more valuable (Nuttal 2019). When many of the Native American and black residents who had built houses there refused to move, the City of Palm Springs condemned the houses as unsafe due to lack of public utilities and usually bulldozed or burned them down the same day a condemnation was issued, without waiting the 30 days required by law. Notably, connections to public utilities had previously been repeatedly requested by Section 14's residents and refused by the City on the basis that its residents did not pay property taxes, which was in fact untrue (Nuttal 2019). This dispersed minority groups to the edge of the city, or out of the Coachella Valley altogether, as was consciously intended by the city elite (Kray 2004). The regular presence of wealthy Hollywood tourists in the valley, and their desire for convenience and privacy, also spurred the development of a significant healthcare industry, including several drug rehabilitation centers.

3.3 Current Period (1973 A.D. to Present)

The Coachella Valley economy continues to be primarily tourism-based, producing approximately $8 billion annually, with some significant agricultural production as well (CVEP 2022). Large events, including the famous Coachella Valley Music and Arts Festival, bring in much of this money. The opening of the Agua Caliente Casino Resort in 2001 provided a further boost to the tourism and hospitality business. New construction of residences and land sales also form a large part of the economy. The original city boosters' vision of a playground and vacation residence location for wealthy white tourists continues to hold true for much of the area, with an average income well above the national average in several cities, and whites forming as much as 88% of the population in Indian Wells and 79% in Rancho Mirage. These are primarily vacation and retirement residences. Cities with the least-white populations, such as Cathedral City and Indio, are also the poorest (CVEP 2022). These are primarily the residences of Hispanic workers employed by the hospitality and construction industries within the valley. Palm Springs is primarily notable for becoming a center of LGBT life in recent decades, with 40-50% of the population identifying as LGBT (Rae 2022).

4.0 GEOLOGIC SETTING

4.1 Geologic Time

Stratigraphic divisions found in rock sequences reflect geologic changes, and thus have provided the basis for determining geologic time scales. Geologic eons are divided into eras, which are divided into periods, which are divided into series or epochs. Table 2 outlines the geologic eras, periods, and series discussed in this report and is based on a table created by the U.S. Geological Survey (USGS) Geologic Names Committee (2018). Geologic eras occurring before those discussed in this report are not included in the table.

Table 1. Divisions of Recent Geologic Time, *Changes to time scale since 2007 (USGS Names Committee 2018).

EONOTHEM / EON	ERATHEM / ERA	SYSTEM,SUBSYSTEM / PERIOD,SUBPERIOD		SERIES / EPOCH	Age estimates of boundaries in mega-annum (Ma) unless otherwise noted
Phanerozoic	Cenozoic (Cz)	Quaternary (Q)		Holocene	11,700 ±99 yr*
				Pleistocene	2.588*
		Tertiary (T)	Neogene (N)	Pliocene	5.332 ±0.005
				Miocene	23.03 ±0.05
			Paleogene (Pg)	Oligocene	33.9 ±0.1
				Eocene	55.8 ±0.2
				Paleocene	65.5 ±0.3

4.2 Regional Geology

The Project site is located within the City of Rancho Mirage, within the Coachella Valley, which lies between the Peninsular Range to the west and the Indio Hills to the east. The Peninsular Ranges consist of various mountains including the Santa Ana Mountains, Temescal Mountains, the San

Jacinto Mountains. This group of mountains stretches approximately 900-miles-long extending north-south from Southern California to Baja California in Mexico. The bedrock in this region includes predominantly granitic and related sediments that are part of the southern and lower California batholith and smaller amounts of Paleozoic and Mesozoic metamorphic materials. In some areas of the Peninsular Ranges, thin sedimentary and volcanic units cover the crystalline materials. Paleontological evidence suggests these thin sediments date back to the Pliocene (Woodford et al 1971).

As most of the granite and metamorphic rocks erode, the valleys and basins are comprised of these eroded deposits carried by streams or other forms of erosion. Some of these valleys and basins consist of thick layers of these sedimentary deposits reaching almost 22,000 feet with sediments dating back to the Cretaceous period (Jahns 1954). Geologic faulting heavily influences this area since it is bounded by the San Jacinto Fault, the Elsinore Fault, Chino Fault zone, and the Cucamonga Fault zone. This faulting activity causes rapid erosion to continue to feed the valley and basins with sedimentary deposits.

4.3 Project Area Geology

The Project site, excepting a few small areas around the existing family home, is covered by Holocene eolian sand eroded from the neighboring Peninsular Range and blown by prevailing winds into the valley. It is primarily clean to slightly silty, fine to medium sand (City of Rancho Mirage 2019). This overlays the quaternary alluvium, composed of Holocene and possibly Pleistocene sand and gravel (Dibblee 1954).

5.0 METHODOLOGY

5.1 Archival Research

Archival research was conducted through different inventory databases, including the National Geologic Map Database, and/or historic societies to acquire more information or knowledge of the history of the Coachella Valley. In addition to resources publicly available online, and in the libraries of the University of Maryland and the University of California, Los Angeles, APRMI personnel viewed material located within the Special Collections of the Young Research Library at the University of California, Los Angeles.

5.2 Paleontological Record Search

On September 14, 2023, APRMI requested a paleontological resource records search from the Western Science Center (WSC) in Hemet, California, to identify any known paleontological resources on or near the Project site.

5.3 Cultural Records Search

On September 14, 2023, APRMI requested a cultural resource records search from the Eastern Information Center (EIC) in Riverside, California to identify any known cultural resources on or near the Project site. In accordance with Assembly Bill 52, APRMI also requested a sacred lands file

and Native American contact list request with Native American Heritage Commission (NAHC) in West Sacramento, California on September 14, 2023.

5.4 Field Reconnaissance

On September 28, 2023, Ms. Robin Turner, Mr. Sam Parekh, and Mr. Skyland Rice conducted a field reconnaissance of the Project area to evaluate the presence of any archaeological or paleontological resources to determine if the development of the Project might have significant direct or indirect adverse impacts on such resources. The survey began near the southeastern most boundary of the Project area on Ginger Rogers Road and towards the northeastern boundary of the project area for further evaluation. Pedestrian survey methods were conducted on undeveloped areas with clear brush access and high ground visibility. The Project area was surveyed in transects approximately 10 feet (3 m) apart towards an east direction. Vegetation, topography, and fauna observations were photographed and noted. All photos, and field notes are stored in the APRMI office.

6.0 RESULTS OF RECORDS SEARCHES

6.1 Paleontological Resources Records Check

The results of the paleontological resources records search, conducted by Collections Manager Brittney Stoneburg of the Western Science Center (see Appendix A), states that there are no known vertebrate fossil localities within one mile of the Project area. The geologic unit underlying the Project area consists of relatively modern loose fine sand dating to the Holocene epoch, and such sedimentary units are unlikely to contain fossils. However, if excavation disturbs deeper sedimentary units dating to the earliest Holocene or Pleistocene epochs, there would be high paleontological sensitivity.

6.2 Cultural Resources Records Search Results

Results of the cultural records search were received on November 27, 2023. These results are discussed in full detail below (see Sections 6.2.1-3) and referenced as catalog numbers assigned by the EIC. National, State, and local designation criterion requirements may be viewed in 2.0 Regulatory Setting section. The results provided by the EIC include primary records such as Department of Parks and Recreation (DPR) forms, assessment reports, and maps. Letter request and results can be viewed in Appendix B.

6.2.1 Prehistoric Sites and Isolate(s)

Four prehistoric sites and one prehistoric isolate have been recorded with primary record forms within a 1-mile radius of the Project site. Of particular note are the two cremations, which indicate a higher possibility for the discovery of human remains during ground-disturbing activities. Multiple other prehistoric isolates were recorded by survey reports provided to APRMI by the EIC (see Section 6.2.3).

Table 2. Evaluated Prehistoric Sites and Isolates in Project Area or 1-Mile Radius

Primary Number	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR Status	Location
33-17007	Site	Two metates, two handstones	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius
33-17009	Site	Cremation	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius
33-17010	Site	Cremations and stone artifacts	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius
33-17011	Site	Temporary processing site, 3-4 stone tools	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius
33-17012	Isolate	Pottery sherd	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius

6.2.2 Historic Sites and Isolate(s)

Six historic sites and four historic isolates have been recorded with primary record forms within a 1-mile radius of the Project site. These primarily consist of historic refuse dating to late 1800s to early 1900s. As the field survey discovered, historic refuse is present on the Project property.

Table 3. Evaluated Historic Sites and Isolates in Project Area or 1-Mile Radius

Primary Number	Resource Type	Description	Recorder(s) and Year(s)	NRHP/CRHR Status	Location
33-003440	Site	Remains of railroad siding station and historic refuse	R.M. Apple, T. Wahoff, K. Norwood, 1988; Brooke Arkush, 1990; S. Ashkar, E. Prendergast, 1999; Daniel Ballester, 2017	Not Evaluated	Within 1-mile radius
33-009498	Site	Railroad line	S. Ashkar, 1999; Christeen Taniguchi, 2005; S. Wilson, K. Chimel, 2009; Scott Kremkau, 2012; T. Baurley, J.M. Sanka, 2015; Carrie Chasteen, 2003; Daneil Leonard, 2016; P. Moloney, R. Elder, W. Blodgett, 2017	Not Evaluated	Within 1-mile radius

33-009748	Site	Road and historic refuse	Beth Padon, 2007; J. Underwood, 2004; David Ferraro, 2000	Not Evaluated	Within 1-mile radius
33-10953	Isolate	Two historic cans	T. Wahoff, J. Dellert, S. Diaz, B. Fitzsimmons, 2000	Not Evaluated	Within 1-mile radius
33-10954	Isolate	Historic can	T. Wahoff, J. Dellert, S. Diaz, B. Fitzsimmons, 2000	Not Evaluated	Within 1-mile radius
33-10955	Isolate	Historic can	T. Wahoff, J. Dellert, S. Diaz, B. Fitzsimmons, 2000	Not Evaluated	Within 1-mile radius
33-10956	Isolate	Historic can	T. Wahoff, J. Dellert, S. Diaz, B. Fitzsimmons, 2000	Not Evaluated	Within 1-mile radius
33-17005	Site	Burnt slag and charcoal, metal pieces	Beth Padon, Keith Hamm, Doug McIntosh, 2007	Not Evaluated	Within 1-mile radius
33-017008	Site	Remains of a shed	Beth Padon, Keith Hamm, Doug McIntosh, 2007; Daniel Ballester, 2017	Not Evaluated	Within 1-mile radius
33-26824	Site	Historic refuse	Daniel Ballester, Ben Kerridge, 2017	Not Evaluated	Within 1-mile radius

6.2.3 Previous Cultural Reports and Studies

27 previous cultural reports have been conducted within a 1-mile radius. One survey recorded prehistoric isolates not reported elsewhere.

Table 4. List of EIC Cultural Reports and Studies Identified Within a ½ Mile Radius

Report Number	Author(s)	Year	Title	Affiliation	Location	Artifacts Found
RI-1122	Christopher Drover	1981	Environmental Impact Evaluation: Archaeological Assessment of the Proposed Extensions of Monterey and 34th Avenues Near Thousand Palms, California	Riverside County Road Department	Within a 1-mile radius	None
RI-1271	James Swenson	1981	Environmental Impact Evaluation: An Archaeological Assessment of a Portion of the N ½ of Section 29, T4S R6E, SBBM, Coachella Valley, Riverside County,	Archaeological Research Unit University of California Riverside	Within a 1-mile radius	None

			California			
RI-1871	Beth Padon	1984	Archaeological Resource Assessment 130-Acre Parcel Along Bob Hope Drive Riverside County, California	LSA, Inc.	Within a 1-mile radius	None
RI-2350	Rebecca McCorkle Apple and Jan Wooley	1988	MCI Rialto to El Paso Fiber Optics Project Intensive Cultural Resource Survey San Bernardino and Riverside Counties, California	Dames & Moore	Within a 1-mile radius	Historic site (33-003440)
RI-2765	Brooke Arkush	1990	Environmental Impact Evaluation: An Archaeological Assessment of the Proposed Mid-Valley Stormwater Channel Located in the Coachella Valley of Central Riverside County, California	Archaeological Research Unit University of California Riverside	Within a 1-mile radius	Historic site (33-003440)
RI-3284	John Torres, Joan Schneider, Bruce Love	1991	Cultural Resources Assessment Tentative Tract 26763 (APN 618-540-014, -015) Thousand Palms Area of Riverside County, California	Archaeological Research Unit University of California Riverside	Within a 1-mile radius	None
RI-4117	Roger Mason, Philippe Lapin, Brant Brechbiel	1998	Cultural Resources Records Search and Survey Report for a Pacific Bell Mobile Services Telecommunications Facility: CM 204-02 in the City of Rancho Mirage, California	Chambers Group, Inc.	Within a 1-mile radius	None
RI-4547	Joan Brown	2001	A Cultural Resources Reconnaissance for the Widening of Bob Hope and Dinah Shore Drives, Located in Riverside County, California	RMW Paleo Associates, Inc.	Within a 1-mile radius	None
RI-5329	Adrianna Jackson	2001	Records Search Results for Sprint PCS Facility RV35XC091T (Miss Flo Site), Rancho Mirage, Riverside County, California	Michael Brandman Associates	Within a 1-mile radius	None
RI-5374	Bruce Love, Bai “Tom” Tang, Michael	2001	Identification and Evaluation of Historic Properties Relocation of Five Outdoor Advertising	CRM Tech	Within a 1-mile radius	None

	Hogan, Daniel Ballester		Signboards on Bob Hope Drive, City of Rancho Mirage, Riverside County, California			
RI-6372	Bai Tang, Michael Hogan, Matthew Wetherbee, Daniel Ballester, Laura Hensley Shaker	2005	Historical/Archaeological Resources Survey Report Annenberg Center Project, City of Rancho Mirage, Riverside County, California	CRM Tech	Within a 1-mile radius	None
RI-6854	Joan Brown	2000	A Cultural Resources Reconnaissance for the Widening of Bob Hope Drive, Located in Riverside County, California	RMW Paleo Associates, Inc.	Within a 1-mile radius	None
RI-7004	Tanya Wahoff and Rebecca Apple	2001	Cultural Resource Survey for the Proposed Golden Ridge Resort and Spa Project Riverside County, California	EDAW, Inc.	Within a 1-mile radius	Multiple previously recorded historic sites and isolates
RI-7304	Wayne Bonner	2006	Cultural Resource Records Search and Site Visit Results for Sprint Nextel Telecommunications Facility Candidate CA5319B (U.U.), 72425 Via Vail, Rancho Mirage, Riverside County, California	Michael Brandman Associates	Within a 1-mile radius	None
RI-11067	Bai "Tom" Tang, Michael Hogan	2017	Phase I Historical/Archaeological Resources Survey Key Largo Project, Assessor's Parcel Nos. 685-010-004 and -005, City of Palm Desert, Riverside County, California	CRM Tech	Within a 1-mile radius	None
RI-7720	Beth Padon	2007	Cultural Resources Assessment for the Section 19 Specific Plan Area (268 Acres) City of Rancho Mirage, Riverside County, California	Discovery Works, Inc.	Within a 1-mile radius	Multiple previously recorded prehistoric sites
RI-7756	Joan George	2008	Phase-I Cultural Resources Survey, Well 4615-1 Project, Rancho Mirage,	Applied EarthWorks, Inc.	Within a 1-mile radius	None

			California			
RI-9016	Bai "Tom" Tang	2013	Historic Property Survey Report	CRM Tech	Within a 1-mile radius	Multiple historic properties
RI-9366	Bai "Tom" Tang, Michael Hogan	2015	Phase I Historical/Archaeological Resources Survey, Rancho Mirage Dog Park Project, City of Rancho Mirage, California	CRM Tech	Within a 1-mile radius	None
RI-9382	Bai "Tom" Tang	2015	Update to Historical/Archaeological Resources Survey Sunnylands Expansion Project, APN 674-610-005, City of Rancho Mirage, Riverside County, California	CRM Tech	Within a 1-mile radius	None
RI-9870	Bai "Tom" Tang, Michael Hogan	2016	Phase I Historical/Archaeological Resources Survey, Assessor's Parcel Numbers 694-130-016 and -021, City of Palm Desert, Riverside County, California	CRM Tech	Within a 1-mile radius	None
RI-9874	Bai "Tom" Tang, Michael Hogan	2016	Phase I Historical/Archaeological Resources Survey Monterey Medical Center Project, Tentative Tract Map No. 37003, City of Rancho Mirage, Riverside County, California	CRM Tech	Within a 1-mile radius	None
RI-10248	Curt Duke	2016	Historic Property Survey Report, Rancho Mirage Resignalization Project, Highway 111/Bob Hope Drive, Country Club Drive	Duke Cultural Resources Management	Within a 1-mile radius	None
RI-10249	Nicolas Hearth	2017	Archaeological Survey Report, Rancho Mirage Resignalization Project, Highway 111/Bob Hope Drive/Country Club Drive	Duke Cultural Resources Management	Within a 1-mile radius	Multiple prehistoric sites – not within radius
RI-10299	Bai "Tom" Tang, Michael Hogan	2015	Identification and Evaluation of Historic Properties, Chromium-6 Water Treatment Facilities Project, Coachella Valley, Riverside County, California	CRM Tech	Within a 1-mile radius	Multiple historic sites

RI-10550	Bai "Tom" Tang, Michael Hogan, Terri Jacqueman	2018	Attachment B Archaeological Survey Report/Historical Resources Evaluation Report, Congestion Mitigation and Sand Fence Project Ramon Road and Dinah Shore Drive	CRM Tech	Within a 1-mile radius	None
RI-10551	Michael Hogan, Terri Jacqueman	2018	Attachment E Post-Review Discovery and Monitoring Plan, Congestion Mitigation and Sand Fence Project, Ramon Road and Dinah Shore Drive	CRM Tech	Within a 1-mile radius	Multiple prehistoric isolates

6.3 Archival Research

Resources at the libraries of University of California, Los Angeles, the University of Maryland, College Park, and the National Geographic Database were consulted by APRMI staff. A building is recorded as standing on the Project site on the 1958 USGS Topographic map, which likely represents the single-family home still standing on Project site today.

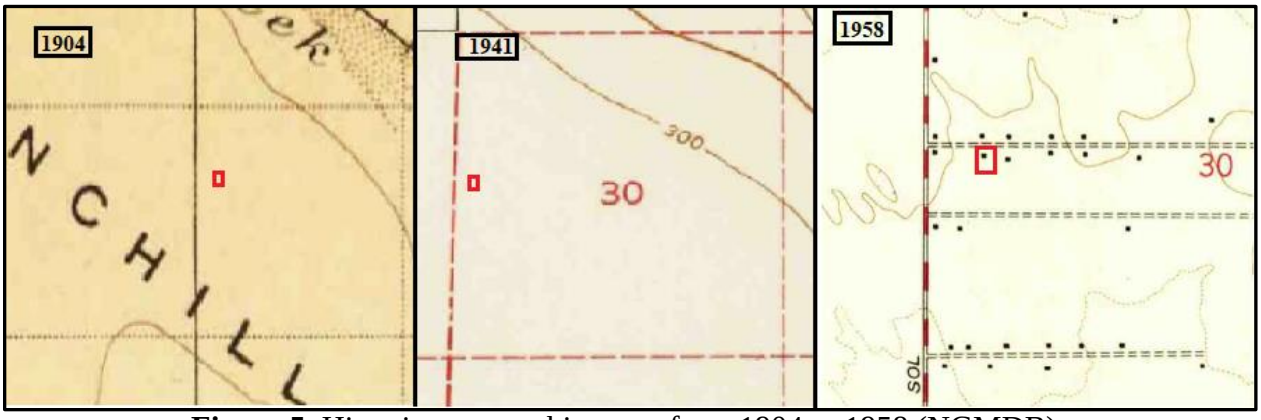


Figure 5. Historic topographic maps from 1904 to 1958 (NGMDB).

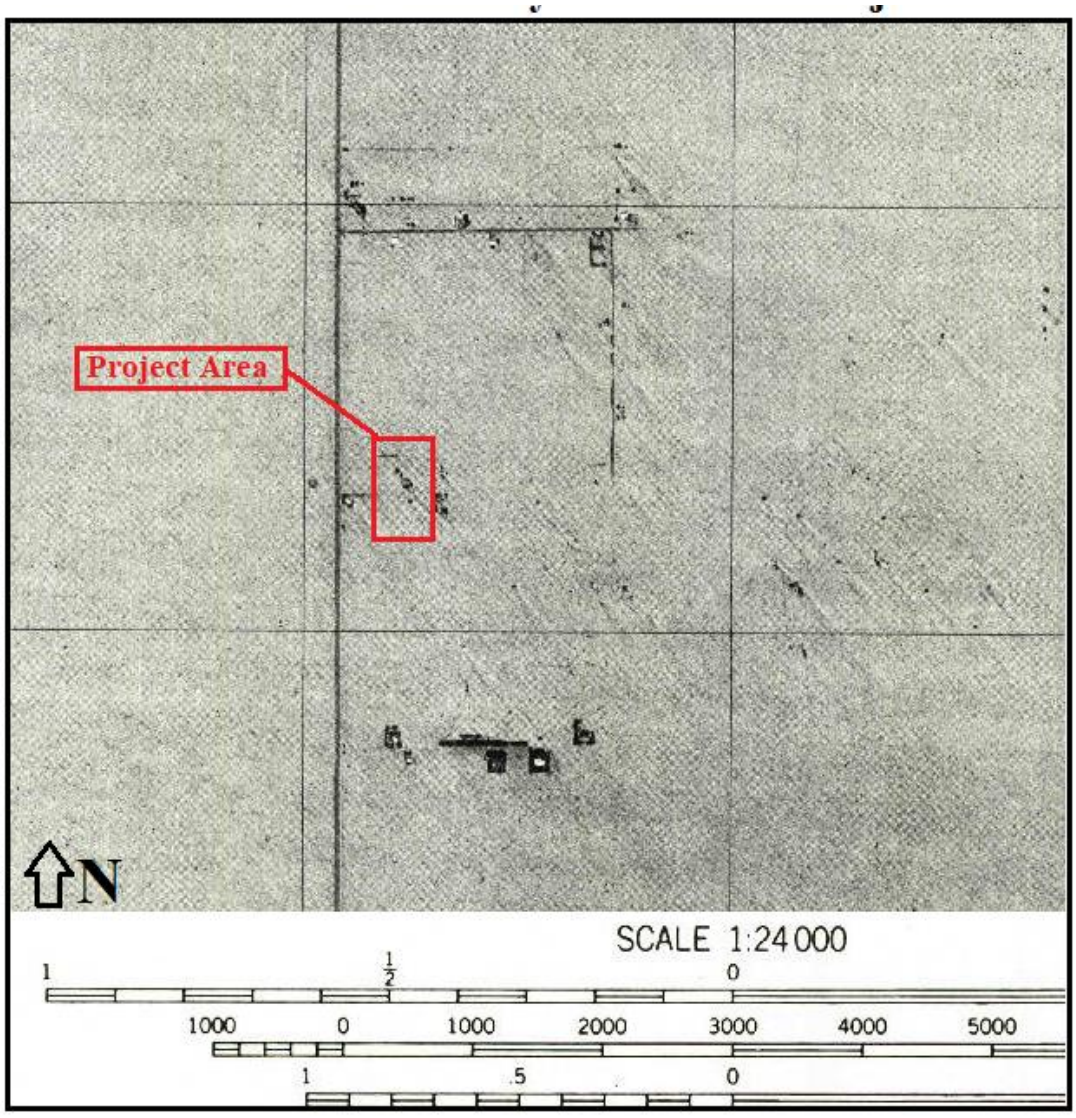


Figure 6. Aerial survey photo from 1975 (USGS).

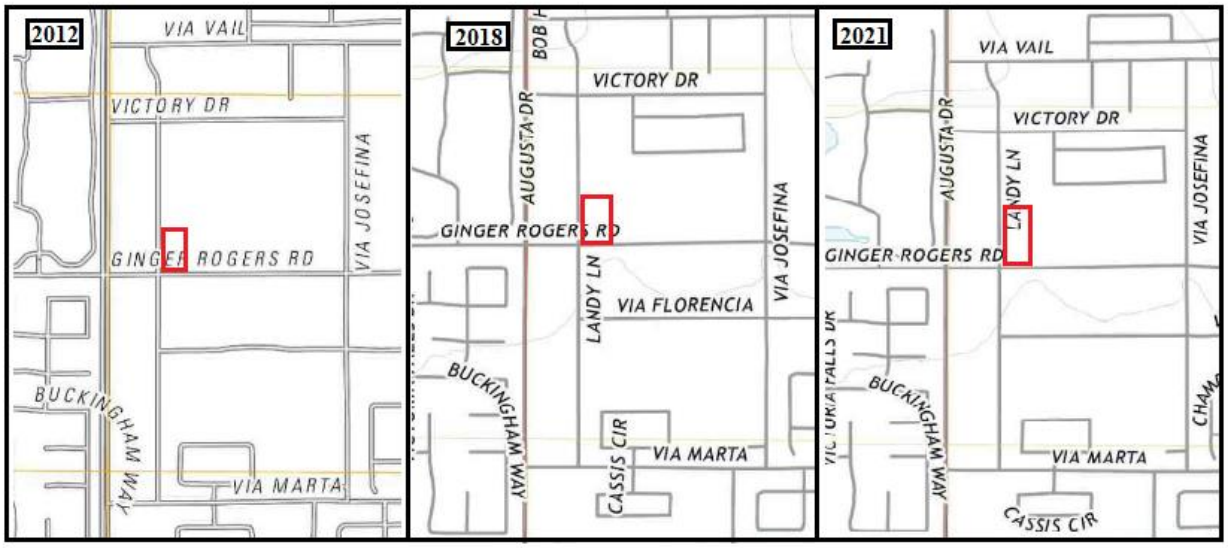


Figure 7. Topographic maps from 2012 to 2021 (NGMDB).

7.0 RESULTS OF FIELD RECONNAISSANCE

The field reconnaissance has determined the area to be relatively flat terrain with sparse vegetation and trees. The Project area was accessible and observable, excepting the area surrounding the existing single-family home. Project site ground surface was primarily loose fine sand, which has been blown by prevailing winds over the older alluvial gravel and sand, although in areas around the single-family home a concrete pad and mulch were observed, and hay was observed in the south-east corner (see Figure 5). Evidence that the Project area has also previously been used as an illegal dumping site was observed during the field reconnaissance. It is possible that some of the material possesses historic informational value. No known paleontological sites were located during the field reconnaissance process.



Figure 8. View of Site facing north from the south-east corner.



Figure 9. View of Site facing northwest from the south-east corner.



Figure 10. View of site facing west from the south-east corner.



Figure 11. View of north-west corner of site facing north.



Figure 12. Potentially historic machine parts observed in the south-center of the site.



Figure 13. Potentially historic oil or gas canister observed in the south-center of the site.

8.0 NATIVE AMERICAN CONTACT

APRMI staff requested a Sacred Lands File Search and a Native American Contacts list for the Project from the Native American Heritage Commission (NAHC) on September 14, 2023. The NAHC's search of the Sacred Lands Files, received on November 15, 2023, provided APRMI with a Native American Contacts list. APRMI contacted the tribes, individuals, and organizations listed by phone on November 17th to ensure that the mailing information is correct and to let them know that an informational package regarding the Project, including a Project description, was being sent to them by mail. The Project informational package along with an accompanying letter was sent to them by regular mail, on November 22, 2023. Any written responses to APRMI's outreach can be viewed in Appendix C.

On November 20, 2023, Director of Historic Preservation Patricia Garcia for the Agua Caliente Band of Cahuilla Indians, responded to APRMI through email and telephonic communication and stated that the proposed Project falls within a medium to high sensitivity area due to the previous discovery of Native American burials and cremations just to the north of the Project.

On December 5, 2023, Cultural Resources Analyst Xitlaly Madrigal of the Agua Caliente Band of Cahuilla Indians requested in an email communication to APRMI that a cultural resources inventory of the Project area by qualified archaeologist prior to any construction, a copy of any cultural resource documentation generated in connection to this project, a copy of the Information Center records search requested by APRMI, and the presence of an archaeologist and an Agua Caliente-approved Native American Cultural Resource Monitor during any ground-disturbing activities.

A full list of communications from APRMI to Native American tribes can be seen in Table 5.

Table 5. APRMI Communication with Native Americans

Personal Contact	Tribal Affiliation	Communication from APRMI	Responses
Patricia Garcia	Agua Caliente Band of Cahuilla Indians	Physical letter, Telephone	Telephone, email
Xitaly Madrigal	Agua Caliente Band of Cahuilla Indians	None – Letter forwarded by Patricia Garcia	Email letter
Amanda Vance	Augustine Band of Cahuilla Mission Indians	Physical letter, Telephone	No response
Doug Welmas	Cabazon Band of Mission Indians	Physical letter, Telephone	No response
BobbyRay Esaprza	Cahuilla Band of Indians	Physical letter, Telephone	No response
Anthony Madrigal	Cahuilla Band of Indians	Physical letter, Telephone	No response
Daniel Salgado	Cahuilla Band of Indians	Physical letter, Telephone	No response
Ray Chapparosa	Quechan Tribe of the Fort Yuma Reservation	Physical letter, Telephone	No response
Robert Martin	Morongo Band of Mission Indians	Physical letter, Telephone	No response
Ann Brierty	Morongo Band of	Physical letter,	No response

	Mission Indians	Telephone	
Jordan Joaquin	Quechan Tribe of the Fort Yuma Reservation	Physical letter, Telephone	No response
Jill McCormick	Quechan Tribe of the Fort Yuma Reservation	Physical letter, Telephone	No response
Manfred Scott	Quechan Tribe of the Fort Yuma Reservation	Physical letter, Telephone	No response
John Gomez	Ramona Band of Cahuilla	Physical letter, Telephone	No response
Lovina Redner	Santa Rosa Band of Cahuilla Indians	Physical letter, Telephone, Email	No response
Joseph Ontiveros	Soboba Band of Luiseno Indians	Physical letter, Telephone, Email	No response
Alesia Reed	Torres-Martinez Desert Cahuilla Indians	Physical letter, Telephone, Email	No response
Mary Belardo	Torres-Martinez Desert Cahuilla Indians	Physical letter, Telephone, Email	No response
Thomas Tortez	Torres-Martinez Desert Cahuilla Indians	Physical letter, Telephone, Email	No response
Gary Resvaloso	Torres-Martinez Desert Cahuilla Indians	Physical letter, Telephone, Email	No response
Abraham Becerra	Torres-Martinez Desert Cahuilla Indians	Physical letter, Telephone, Email	No response

9.0 RECOMMENDATIONS

Due to the high sensitivity of the Project area for cultural and tribal resources, and at the request of the Agua Caliente Band of Cahuilla Indians, APRMI recommends that both a tribal monitor and a qualified archaeologist be present on site to monitor any ground-disturbing activities. A full list of Mitigation Measures for Cultural and Paleontological Resources can be viewed below.

MM-CR-1. Prior to the start of Project excavation, a qualified archaeologist shall be retained and create a Worker's Environmental Awareness Program (WEAP) pamphlet that will be prepared by the Project Archaeologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of cultural resources. This training class shall include examples of cultural resources to look for during project excavation and the protocols to follow if discoveries are made.

MM-CR-2: Archaeological resources monitoring shall be conducted by a professional archaeological resources monitor during Project related earth-disturbing activities, per OHP standards, under the supervision of a qualified Project Archaeologist. Monitoring

will entail visual inspection of Project related earth-disturbing activities in native soil.

MM-CR-3: As requested by the Agua Caliente Band of Cahuilla Indians, an approved Native American monitor, with documented ancestral ties to the area consistent with the standards of the Native American Heritage Commission (NAHC), shall be present for all ground disturbing activities that involve excavation of previously undisturbed soil, until the archaeologist and Native American monitor deems that they are no longer in soil that may contain prehistoric and/or historic artifacts, sites, or features. Monitoring will entail visual inspection of all Project-related earth-disturbing activities.

MM-CR-4: If an archaeological resource is encountered during excavation when a monitor is not on site, all excavation shall cease within at least 50 feet of the discovery and the Principal Investigator and Lead Archaeologist must be notified. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Archaeologist and indicates that excavation can resume.

MM-CR-5A: If an archaeological discovery cannot be preserved in situ and requires an excavation team or requires additional time to collect cultural resources, a Discovery and Treatment Plan (DTP) will be developed by the Lead Archaeologist, and the area will be cordoned off and secured so that an archaeological resources excavation team, led by the Principal Investigator and Lead Archaeologist, may recover the cultural resources out of that area. Once the Principal Investigator has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area.

MM-CR-5B: If human remains are encountered, work on the project will be suspended and the City of Rancho Mirage will be contacted immediately. The City of Rancho Mirage will contact the Riverside County coroner. If the remains are deemed Native American in origin, the coroner will contact the NAHC, which will identify a most likely descendant in compliance with Public Resources Code Section 5097.98 and California Code of Regulations Section 15064.5. The most likely descendant will have up to 48 hours to visit the site and make recommendations as to the treatment and final deposition of the remains. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded to the satisfaction of the lead agency.

MM-CR-6: All significant cultural resources collected by the archaeologist will be prepared in a properly equipped laboratory to a point ready for curation. All significant artifacts collected will be prepared in a properly equipped archaeological laboratory to a point ready for curation. Artifacts will be identified, photographed, catalogued, analyzed, and delivered to an accredited museum repository for permanent curation and storage or to the appropriate Tribe. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent.

MM-CR-7: At the conclusion of laboratory work but prior to museum curation, a final (negative

or positive) findings report will be prepared describing the results of the cultural mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the cultural background within the project vicinity, a list of cultural resources recovered (if any), an analysis of cultural resources recovered (if any) and their scientific significance, and recommendations. A copy of the report will be prepared for the City of Rancho Mirage, the EIC, and be submitted to the designated museum repository (if applicable).

MM PAL-1: Prior to the commencement of grading or excavation activities, the Lead Paleontologist retained for the construction of Rancho Mirage 9 Lot Subdivision Project, shall create a Worker's Environmental Awareness Program (WEAP) pamphlet that will be prepared and provided by the Project Paleontologist and provided as during the training class to Project personnel, so they understand the regulatory requirements for the protection of paleontological resources. This training class shall include examples of paleontological resources to look for during project excavation and the protocols to follow if discoveries are made.

MM PAL-2: In the event that a paleontological resource is encountered when a monitor is not on site, all construction shall cease within at least 50 feet of the discovery and the Principal Investigator and/or Lead Paleontologist must be notified immediately. If the monitor is present at the time of discovery, then the monitor will have the authority to temporarily divert the construction equipment around the find and notify the Principal Investigator and/or Lead Paleontologist until it is assessed for scientific significance. Work cannot resume in the direct area of the discovery until it is assessed by the Principal Investigator and/or Lead Paleontologist and he/she indicates that construction can resume.

MM PAL-3: In the event that a paleontological resource is encountered, the Lead Paleontologist will implement the Paleontological Management Treatment Plan (PMTP) prepared for Rancho Mirage 9 Lot Subdivision Project. The purpose of the PMTP is to achieve compliance with the California Environmental Quality Act (CEQA), and local governmental agencies concerning the treatment of unexpected paleontological finds which are significant at the federal, state, and/or local level. Based on the sensitivity of the area, APRMI recommends the following monitoring mitigation measures that would comply with the Paleontological Management Treatment Plan and reduce the potential affects to any paleontological resource to a less than significant impact.

MM PAL-4: If a paleontological discovery requires an excavation team or requires additional time to collect specimens, or the size of the discovery is more than a monitor can collect during standard daily monitoring services, a Discovery and Treatment Plan (DTP) will be developed and the area will be cordoned off and secured so that a paleontological resources excavation team, led by the Principal Investigator and/or Lead Paleontologist, may recover the fossilized specimens out of that area once the DTP has been approved. Once the Principal Investigator and/or Lead Paleontologist has determined that the collection process is complete for a given area or locality, construction activity will resume in that localized area.

MM PAL-5: Once construction activities are complete, all significant fossils collected will be prepared in a properly equipped paleontology laboratory to a point ready for curation. Laboratory preparation will include, but not be limited to, the careful removal of excess matrix from fossil remains, stabilizing and repairing specimens, identified to the lowest taxonomic level, analyzed, photographed, and catalogued before they are sent to the local repository for curation and permanent storage. Accompanying notes, maps, and photographs shall also be filed at the repository. The cost of curation is assessed by the repository and is the responsibility of the Project proponent.

MM PAL-6: At the conclusion of laboratory work and museum curation, a final report of findings will be prepared describing the results of the paleontological mitigation monitoring efforts associated with the project. The report will include a summary of the field and laboratory methods, an overview of the geology and paleontology in the project vicinity, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. If the monitoring efforts produced fossils, then a copy of the report will also be submitted to a designated museum repository.

1531 Pontius Ave., Suite 200
Los Angeles, CA 90025

Office: (424) 246-3316
Fax: (424) 248-3417

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APPENDIX A
NHM Paleontological Resources Report

WESTERN SCIENCE CENTER

December 28th, 2023

ArchaeoPaleo Resource Management, Inc.
Robin Turner
1531 Pontius Ave., Suite 200
Los Angeles, CA 90025

Hello,

This letter presents the results of a record search conducted for Rancho Mirage 9 Lots Project located in the City of Rancho Mirage, Riverside County, CA. The project is located at 72094 Ginger Rogers Rd., on Township 4 South, Range 6 East, Section 30 on the *Cathedral City, CA* U.S. Geological Survey 7.5' quadrangle.

The geologic units underlying this project are mapped as units of loose fine sand from the Holocene epoch (Dibblee and Minch 2008). Holocene alluvial units are considered to be of high preservation value, but material found is unlikely to be fossil material due to the relatively modern associated dates of the deposits. The Western Science Center does not have localities within the project area or within a 1 mile radius.

While the presence of any fossil material is unlikely, if excavation activity disturbs deeper sediment dating to the earliest parts of the Holocene or Late Pleistocene periods, the material would be scientifically significant. Excavation activity associated with the development of the project area is unlikely to be paleontologically sensitive, but caution during development should be observed.

If you have any questions, or would like further information, please feel free to contact me at bstoneburg@westerncentermuseum.org.

Sincerely,

Brittney Elizabeth Stoneburg, MSc
Collections Manager

2345 Searl Parkway ♦ Hemet, CA 92543 ♦ phone 951.791.0033 ♦ fax 951.791.0032 ♦ WesternScienceCenter.org

APPENDIX B
EIC Cultural Resources Report

EASTERN INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology, University of California, Riverside, CA 92521-0418
(951) 827-5745 - eickw@ucr.edu
Inyo, Mono, and Riverside Counties

November 20, 2023
CHRIS Access and Use Agreement No.: 107
ST-RIV-7268

Robin Turner
ArchaeoPaleo Resources Management Inc.
1531 Pontius Avenue #200
Los Angeles, CA 90025

Re: Cultural Resources Records Search for the Rancho Mirage 9 Lots Project

Dear Robin Turner:

We received your request on August 21, 2023 for a cultural resources records search for the Rancho Mirage 9 Lots project located in Section 30, T.4S, R 6E, SBBM, in the South Eastern off the Agua Caliente Indian Reservation area in Riverside County. We have reviewed our site records, maps, and manuscripts against the location map you provided.

Our records indicate that 27 cultural resources studies have been conducted within a one-mile radius of your project area. None of these studies involved the project area. PDF copies of these reports are included for your reference. All of these reports are listed on the attachment entitled "Eastern Information Center Report Listing".

Our records indicate that 15 cultural resources properties have been recorded within a one-mile radius of your project area. None of these properties involved the project area. PDF copies of the records are included for your reference. All of these resources are listed on the attachment entitled "Eastern Information Center Resource Detail".

The above information is reflected on the enclosed maps. Areas that have been surveyed are highlighted in yellow. Numbers marked in blue ink refer to the report number (RI#). Cultural resources properties are marked in red; numbers in black refer to Trinomial designations, those in green to Primary Number designations. National Register properties are indicated in light blue.

Additional sources of information consulted are identified below.

National Register of Historic Places: no listed properties are located within the boundaries of the project area.

Office of Historic Preservation (OHP), Archaeological Resource Directory (ARD): One property (P-33-009498 [CA-RIV-006381]) is listed and is determined eligible for inclusion on the National Register of Historic Places. Two properties ((P-33-009498 [CA-RIV-006381] and P-33-017008 [CA-RIV-

008855]) are listed and are ineligible for inclusion on the National Register of Historic Places. The applicable portion of this directory is enclosed for your study needs.

Note: not all properties in the California Historical Resources Information System are listed in the OHP ARD and BERD; the ARD and BERD comprise lists of properties submitted to the OHP for review.

A copy of the relevant portions of the 1904 USGS Indio 7.5' Minute Series, 1944 USGS Edom 15' Minute Series, 1956 USGS Santa Ana 30' Minute Series, 1958 USGS Cathedral City 7.5' Minute Series, 1958 Thousand Palms 15' Minute Series, 1965 USGS Santa Ana 30' Minute Series topographic maps are included for your reference.

As the Information Center for Riverside, Inyo, and Mono Counties, it is necessary that we receive a copy of all cultural resources reports and site information pertaining to these counties in order to maintain our map and manuscript files. Confidential information provided with this records search regarding the location of cultural resources outside the boundaries of your project area should not be included in reports addressing the project area.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by the IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Sincerely,

Kenedy Jacome
Information Officer

Enclosures

APPENDIX C
NAHC Sacred Lands Search

Responses by Native American Tribes

ArchaeoPaleo Resource Management, Inc.
A full-service Archaeology and Paleontology company
SBE/WBE/WOSB/DBE/UDBE/EBE/LBE/SLBE/CBE/VSBE/MicroBE Certified

September 14, 2023

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
nahc@nahc.ca.gov

I would like to request a sacred lands file and Native American contacts list for the Rancho Mirage 9 Lots (Project) listed below. The proposed Project will be located at Assessor Parcel No. 685080002. The project is located at 72094 Ginger Rogers Rd, Ranch Mirage, CA 92270, within the County of Riverside. This lot is approximately 5.04 acres and is located in Township 4 S, Range 6 E, Section 30 within the Cathedral City, CA Quadrangle. There project area is currently occupied by a small single-story house and vacant lot. The land will be used to develop a 9 lot subdivision. Please let me know if you need additional information.

Thanks,



Robin Turner, President/CEO
ArchaeoPaleo Resource Management, Inc.
1531 Pontius Ave., Suite 200
Los Angeles, CA 90025

(424) 248-3316 ph.
(424) 248-3417 fax
rturner@archaeopaleo.com

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

November 15, 2023

Robin Turner
ArchaeoPaleo Resource Management

Via Email to: rturner@archaeopaleo.com

Re: Rancho Mirage 9 Lots Project, Riverside County

Dear Ms. Turner:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-008-2023-008

December 05, 2023

[VIA EMAIL TO:aprmi@archaeopaleo.com]
ArchaeoPaleo Resource Management Inc.
Robin Turner
1531 Pontius Ave., Suite 200
Los Angeles, CA 90025

Re: 72094 Ginger Rogers Rd

Dear Robin Turner,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the 72094 Ginger Rogers Rd project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*A cultural resources inventory of the project area by a qualified archaeologist prior to any development activities in this area.

*Copies of any cultural resource documentation (report and site records) generated in connection with this project.

*A copy of the records search with associated survey reports and site records from the information center.

*The presence of an archaeologist that meets the Secretary of Interior's standards during any ground disturbing activities.

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

Appendix D Preliminary Soils Evaluation dated March 3, 2023

SAMPSON and ASSOCIATES

CONSULTING ENGINEERS

Geotechnical, Structure, Environmental

Project No.: 23-0102S
March 03, 2023

TO: **Mr. Farhad Zomorodi**
9165 Alcott, #203
Los Angeles, Ca.

SUBJECT: Preliminary Soils Evaluation, (9) New Single-Family Residences On TTM NO. 38636 In The City of Rancho Mirage, California.

INTRODUCTION:

We sincerely appreciate the opportunity to be of service to you on this project. The primary purpose of this study was to evaluate the soils conditions as they impact the proposed development and to provide engineering recommendations. Our study has demonstrated that the proposed development is feasible from soils engineering point of view and that no un-mitigatable conditions have been disclosed by our studies provided that our recommendation provided in this report are incorporated fully in the design of the project.

This report presents the findings of our data review, subsurface exploration, laboratory testing, engineering analysis and evaluation, and our conclusions and recommendations.

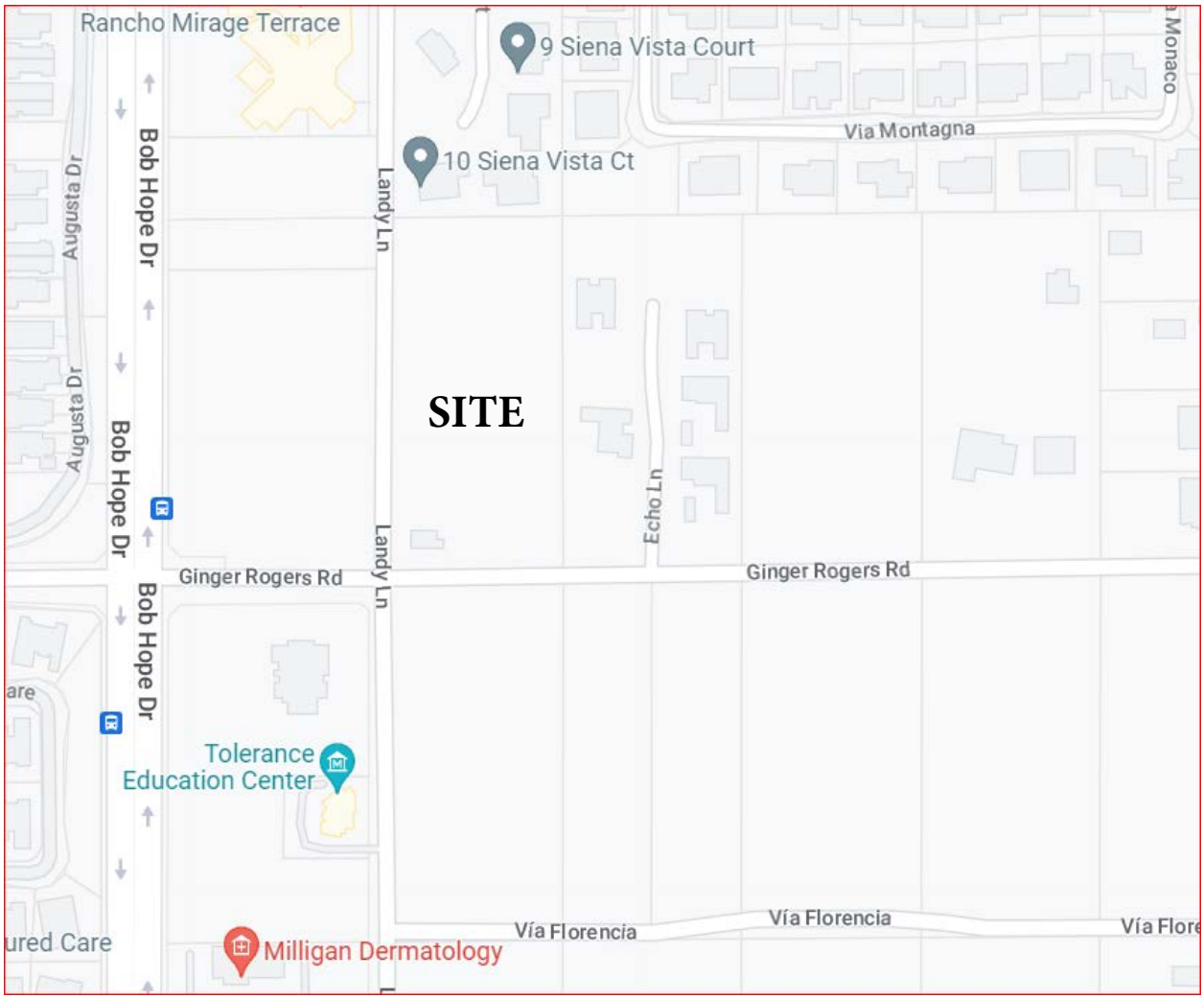
If you have any questions regarding this report please do not hesitate to contact this office at your convenience. We appreciate the opportunity to be of service on this project.

Respectfully Submitted;
SAMPSON and ASSOCIATES

Mohammad. E. Samiee MS, RCE 46172
MS/db
Distribution: (4) Addressee

REGISTERED PROFESSIONAL ENGINEER
M. E. SAMIEE
C46172
Exp. 12/31/24
CIVIL
STATE OF CALIFORNIA

P. O. Box 834, San Dimas, California 91773 Tel.: (909) 522-7067
E-Mail: sampsongeotechnical@gmail.com



Index Map

Of

TTM NO. 38636

N/E Corner Of Landy Lane and

Ginger Rogers Road

City of Rancho Mirage,

California

SCOPE OF STUDY:

The purposes of this study are to identify on-site, near-surface soil conditions that may affect the proposed developments and provide soils engineering recommendations for site preparation, temporary excavations, foundation design, slabs-on-grade, and drainage recommendations.

1. Site visit and review of pertinent documents.
2. Excavation, logging, and sampling of (5) exploratory Boring to a maximum depth of (7) feet for foundation evaluation. Boring locations were covered with asphalt and we had to saw-cut the locations to drill and sample the soils.
3. Laboratory testing of selected samples to determine the engineering characteristics of onsite soils.
4. Engineering analysis of collected data and information obtained from our field study, laboratory testing, and literature review.
5. Development of soils engineering recommendations for site preparation, grading, and Soils engineering design criteria for building foundations, slab-on grade construction, underground utility trenches, temporary excavations, retaining walls, and drainage.
6. Preparation of this report presenting our findings, conclusions, and recommendations Including maps and illustrations.

ACCOMPANYING MAPS, ILLUSTRATIONS, and APPENDICES:

Index Map - Page 2
Plate 1 - Approximate Boring Location Map
Appendix "A" - References
Appendix "B" - Boring Logs
Appendix "C" - Laboratory Test Results
Appendix "D" - General Earthwork and Grading Specification

SITE LOCATION, PROPOSED DEVELOPMENT, and CONDITION:

The proposed development consists of (9) single-family residences with associated parking spaces located on north-east corner of Landy Lane and Ginger Rogers Road, TTM NO. 38636 in the City of Rancho Mirage, California. Access to the site is available via improved Ginger Rodgers Road. The site is occupied with a small residence located on south side of the lot which is proposed to be completely demolished becoming part of new development.

The subject site is flat regular rectangular shape lot bounded by Ginger Rodgers Road on south, by Landy Lane on west, and by developed residential properties on east and north.

Project is covered with native weeds and large bushes. Drainage onsite is uncontrolled by sheet flow towards south.

This office must review the Foundation Plans prior to permit issue. Although building loads were not provided, we would expect the loads to be typical of residential construction. The building will be supported on shallow continuous footings and slab-on-grade. The remaining of the property will be landscaped or paved.

SUBSURFACE INVESTIGATION:

To evaluate the subsurface condition of the subject sites, Five (5) exploratory Borings were drilled to maximum depths of (7) feet as shown on Plate-1. The excavations were then backfilled. The test Pits were logged and sampled. Bulk and relatively undisturbed samples were collected for proper laboratory testing.

SUBSURFACE CONDITIONS:

Soil materials encountered in our borings consisted loose fine sand deposit deposited by prevailing winds, sand and gravel of the valley area. The approximately 24 inches of loose to very loose and dry light greyish alluvial sand with fine silt and gravel of major creeks and stream washes material underlain by loose and dry light greyish sandy fine silt soils to dense and moist sandy silty soils within the depth of our borings.

Field observation, probing, and testing of the subsurface material indicates that approximately upper approximately 4± feet of the onsite soils appears to be loose, dry, and collapsible under proposed structural load.

GROUND WATER:

No Ground water or any perched ground water was observed at our (4) exploratory borings onsite during the course of our investigation.

LABORATORY TEST RESULTS:

Laboratory tests were performed to identify the engineering characteristics of the onsite soils with respect to the proposed development at the site. A description of these test procedures is presented in Appendix "C", along with the results of these tests.

Laboratory testing included in-place moisture/density, maximum dry density/optimum moisture content, and direct shear.

A summary of the test results is presented below:

Based on our visual inspection and testing, the onsite soils are expected to have a very low potential for expansion.

Maximum dry density and Optimum moisture of representative onsite native soils is 125 pcf and 7.0 percent respectively.
The maximum dry density and optimum moisture content of typical onsite soils are determined by ASTM Test Method D1557.

Shear strength test was performed on representative samples for undisturbed conditions. Direct shear test results on native soil sample indicates a cohesion and frictional strength of 50 psf and 28 degrees, respectively.

Soluble sulfates test result is included in Appendix “C”, however, soluble sulfate test must be verified after completion of grading.

CONCLUSIONS and RECOMMENDATIONS

Based on the field, laboratory data, and our analysis, it is our opinion that the proposed developments are feasible, provided that the recommendations in this report are incorporated fully in the design and construction stages of the projects.

FAULTING and SEISMICITY:

The Southern California region is considered to be tectonically active because of its historically high seismic activity. As with most of southern California, the site can be expected to experience moderate to severe ground shaking during the design life.
The effects of seismic shaking can be mitigated through consideration of the parameters and by design in accordance with the latest Uniform Building Code and the Structural Engineers Association.

Seismic Coefficients Per 2022 CBC Code are as follow:

Site Longitude: W **116.4044733**
Site Latitude: N **33.7944302**
Site Class: "D"
Fy: 1.0
Fv: null -See Section 11.4.8

LIQUEFACTION ANALYSIS:

There are some number of factors which affect the liquefaction characteristics of any given sand. It is now recognized that these include: relative density, grain structure or fabric, length of time the sand is subjected to sustain pressures, the value of the lateral earth pressure, coefficient, and prior seismic or other shear strains to which the sand may have been subjected. According to our site visit, soil classification, and, our soils evaluation and laboratory testing for in-place moisture/densities, the onsite soils are primarily dens silty sand/sandy silt. It is our professional opinion that based on the under-laying dense to hard sandy silt/silty sand soils and considering the deep groundwater below grade, the potential for liquefaction is remote.

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

Landy Ln & Ginger Rogers Rd, Rancho Mirage, CA 92270, USA

Latitude, Longitude: 33.7944302, -116.4044733



Date	5/29/2024, 5:25:11 PM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.78	MCE_R ground motion. (for 0.2 second period)
S_1	0.739	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.78	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.187	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.773	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.851	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	2.097	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.343	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.78	Factored deterministic acceleration value. (0.2 second)
S1RT	0.823	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.935	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.739	Factored deterministic acceleration value. (1.0 second)
PGAd	0.773	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.917	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.895	Mapped value of the risk coefficient at short periods
C_{R1}	0.88	Mapped value of the risk coefficient at a period of 1 s
C_V	1.456	Vertical coefficient

RECOMMENDATION

General Site Grading:

All grading shall be performed in accordance with the Local Standards and General-Earthwork/Grading Specifications on this report (Appendix "D") except as modified in the text of this report.

The following soils engineering recommendations for site preparation, foundation, and slabs-on-grade should be incorporated into final design and construction stages of the project and should be in conformance with local governmental regulations contained herein, whichever is more restrictive. All such work and design, and slabs-on-grade should be incorporated into final design and construction practice.

SITE PREPARATION and GRADING:

Removal and Re-Compaction:

Prior to any grading operations, the site must be cleared of all surface and subsurface obstructions including uncertified fill, any existing structure, grass, weeds, large and small tree stumps, debris, trash, and residual topsoil. Any underground obstruction encountered must be located, removed, and backfilled with clean soils under supervision and testing of the soils engineer.

Based on our site observation, testing, and evaluation, the subsurface material at present condition (building area) are damp to moist, loose/soft, and compressible within the upper (4±) feet below existing grade. Following clearing and stripping, grading of the site shall be initiated by removals of upper 4± feet and scarification of approximate (12) inches within building area and 5 feet beyond footprints. Bottom of all excavations to receive fill must be inspected by the soils engineer, scarified 12 inches, moisture-conditioned as-necessary to satisfaction of soils engineer (flooded), and re-compacted to a minimum 90% of relative dry density under supervision and testing of the soils engineer.

After removal of deleterious material and debris, the exposed bottom of building area shall be inspected by the soils engineer to verify the above findings. If conditions differs from those encountered, our conclusions and recommendations may be re-evaluated.

PRELIMINARY FOUNDATION RECOMMENDATIONS:

It is our opinion that the proposed project may be supported on continuous footings. All footings must be designed by structural engineer founded in native or approved compacted certified soils provided by the above recommended over-excavation and re-compaction.
No foundation plan was available to us at the time of our investigation, therefore, the proposed footings shall be designed by the structural engineer and shall be reviewed by this office prior to construction.
Following parameters are preliminary recommendations in design of foundations and are based on a low expansion potential.

CONTINUOUS FOOTINGS:

All foundation system for this project must be designed by the structural engineer. Final foundation design should be reviewed by this office prior to construction.
Following soils parameters may be used in design criteria of the project.

Allowable Bearing Pressure:	1900 psf	Approved Fill or Native
Coefficient of Friction:	0.28	Approved Fill or Native
Passive Lateral Pressure:	250 pcf	Approved Fill or Native

Single-Story:

Footing Depth Min.:	18-Inch Into Approved Soils-To Be Designed By The Structural Engineer- Min 1- #4 rebar @ Top and 1- #4 Rebar @ Bottom
Footing Width Min.:	15-Inch- To Be Designed By The Structural Engineer

Two-Story:

Footing Depth Min.:	24-Inch Into Approved Soils-To Be Designed By The Structural Engineer- Min 2- #4 rebar @ Top and 2- #4 Rebar @ Bottom
Footing Width Min.:	18-Inch- To Be Designed By The Structural Engineer

No Lateral Pressure increase is allowed.
The above foundation parameters shall be superseded by more restrictive design requirements from the architect, structural engineer, and/or governing agency.
For design, resistance to lateral loads can be assumed to be provided by friction along the base of the foundation and by passive earth pressures on the side of the foundation. An allowable friction coefficient of 0.28 may be used with the vertical dead loads, and an allowable lateral passive pressure.
The friction value is for the total of dead and frequently applied live loads and may be increased by one third for short duration loading, which includes the effects of wind or seismic forces.
Resistance to lateral loading may be provided by passive earth pressure within the layer below the base of the excavation.

RETAINING WALL:

Retaining walls should be designed for the following active lateral soil pressure:

Equivalent Fluid Pressure: 35 pcf - Level Backfill
45 pcf - 2:1 Sloping Backfill
70 pcf - At Rest

Any additional surcharge pressure behind the wall should be added to these values. If import soil is used for backfill, other lateral soil pressures may apply and shall be determined by inspection and/or testing. For lateral restraint, the following soil design parameters may be used when all the foundation recommendations are followed:

Passive Lateral Pressure (EFP): 250 pcf
Coefficient-Of- Friction:0.28
Bearing Pressure: Approved Soils 2000 psf
Lateral Soil pressure increase due to
additional width or depth to Max. 1800 psf : 250 psf/1 foot
Minimum Depth of Footing In Approved Soils: 12 Inches

All footings must be embedded in approved soils certified by the soils engineer.

An adequate sub-drain system shall be constructed behind the retaining walls at base to allow adequate drainage and to prevent building of excessive hydrostatic pressures. Typical sub-drains may include weep holes with gravel pockets, perforated pipes surrounded by filter rock**,** or other approved methods. Outlets should pass below the base of the wall at a minimum 2 percent gradient. Backfill directly behind retaining walls may consist of self compacting 3/4" maximum gravel or clean sand water jetted into place to obtain proper compaction. If other types of soil are used for backfill, mechanical compaction method will be necessary to achieve a relative compaction of at least 90% of maximum dry density. Backfill directly behind retaining walls shall not be compacted by wheel track or other rolling method unless the wall is designed for the surcharge loading from the compaction equipment.

If gravel, clean sand, or other imported granular backfill is used behind the retaining wall, the upper 18 inches of backfill shall consist of typical on-site soil to prevent the influx of surface runoff into the granular backfill and into sub-drain system.

All excavations shall be stabilized within 30 days of initial excavation. Water should not be allowed to pond on top of the excavations nor to flow toward it. No vehicular surcharge shall be allowed within 3 feet of the top of the cut. Any fill which is placed shall be approved, tested and verified by registered soils engineer.

Footing excavations shall be inspected by soils engineer prior to the placement of reinforcing steel and concrete to ensure that competent bearing materials have been encountered. The exact required footing depths are not known at this time and will have to be verified by means of a footing inspection.
It should be noted that a large portion of the anticipated settlement will occur during and soon after the actual construction of the structure. However, additional differential settlement will occur over a period of time. For footings thus designed and constructed, total and differential settlement with the above requirements are anticipated to be negligible provided our recommendations are followed.

Contractors should be informed that the use of heavy compaction equipment in close proximity to retaining walls can cause excessive wall movement and/or earth pressure in excess of design values.
For excavations made during dry seasons where rain is not expected, the excavations shall be cut back 1/2:1 (horizontal to vertical). If unseasonal rainfall is encountered excavation shall be cut back to 3/4:1 (horizontal to vertical) and the open cut shall be adequately protected from saturation or erosion.

Footings adjacent to a descending slope which is steeper than 3:1 in gradient shall be located a distance away from the face of the slope as required by Slope Setback Requirements of the latest Uniform Building Code. Where more restrictive, the safety requirements of OSHA regulations shall be followed.

If you have any questions regarding this report please do not hesitate to contact this office at your convenience. We appreciate the opportunity to be of service on this project.

SETBACKS:

All setbacks required by governing agency must be followed.

TEMPORARY EXCAVATION:

Temporary construction excavation shall be made vertically without shoring to a depth of maximum 5 feet below adjacent surrounding grade. For deeper cuts, the slopes should be properly shored or sloped back to at least a 1:1 (horizontal:vertical) ratio or flatter.

SLAB-ON-GRADE:

Concrete floor slabs (if any) should have a minimum thickness of (4) inches and be reinforced with No. 3 bars spaced 18 inches on center, both ways. All slab reinforcement should be supported on chairs or brick to ensure the desired placement near mid depth placed at mid-height in the slab. If moisture sensitive floor covering is to be placed, we recommend that a 6-mil visqueen barrier be placed beneath slabs. A 2-inch sand layer between the slab and barrier is recommended to protect the barrier and aid in concrete curing.

Prior to placing sand and Visqueen, the slab sub-grade shall be moisture-conditioned to a depth of 18 inches to 5 percent above optimum moisture content as approved by the soils engineer.

All slabs intended to carry any concentrated loads should be designed by a structural engineer. Weakened plane joints shall be provided to reduce the probability of cracks.

Additional or heavier reinforcement shall be necessary for structural considerations as determined by the project architect or structural engineer.

Final recommendations for slab and foundation shall be made on the basis of observation and testing of the soils at pad grade upon completion of grading.

FILL PLACEMENT and COMPACTION:

The voids generated from removals of any underground obstructions and any utilities may be backfilled with onsite soils once free of organic material, debris, boulder and rocks larger than 6 inches in size. Bottom of excavation should be inspected by qualified soils engineer, scarified one foot, flooded uniformly, and re-compacted to a minimum 90% of relative dry density.
If the proposed finished grades are established at or above the existing grades, import soils would be required to accomplish the grading work. All import soils must be granular coarse material free of organic and rocks larger than 6 inches in diameter and should be approved by soils engineer prior to import.
All fill soils should be placed in layers not exceeding 6 to 8 inches in loose thickness approved by the soils engineer, and compacted to at least 90 percent of the maximum dry unit weight as determined by ASTM Designation D1557-91 Compaction Method.
In-Place density tests should be made by the required degree of compaction and the proper moisture content. Where compaction of less than 90 percent is indicated, additional compactive effort should be made with adjustment of the moisture content or layer thickness, as necessary, until at least 90 percent compaction is obtained.

SURFACE DRAINAGE:

Surface drainage should be directed away from foundations and slopes toward the streets or approved drainage devices. Ponding of water adjacent to the foundations and retaining walls must be avoided. Planters which are located within the residence should be sealed or sloped away from the structure to drain to a safe point of collection. Planters located adjacent to a raised floor structure should be sealed to the depth of the footings. A program for maintenance of drainage devices should be developed by the owner.

TRENCH BACKFILL:

Trench excavations for utility pipes shall be backfilled with granular soils under the observation of the soils engineer. After the utility pipe has been laid, the space under and around the pipe shall be backfilled with clean, granular soil having a sand equivalent of 30 or greater to a depth of at least one foot over the top of the pipe before the controlled backfilled is placed. The soils material approved by the soils engineer shall be moisture - conditioned and mixed, as necessary, prior to placement in lifts over the sand backfill. The controlled backfill shall be compacted by mechanical methods to a minimum relative compaction of 90 percent of their relative maximum density.
Field density tests and inspection of the backfill procedures shall be made by this firm during backfilling to ensure that proper moisture content and uniform compaction is being maintained.

PRE-JOB CONFERENCE:

It is imperative that no clearing and/or grading operations be performed without the presence of a representative of this firm. An on-site, pre-job meeting with the inspector, developer, contractor, and the soils engineer should occur prior to all grading related operations.

It would be stressed that operations undertaken at the site without the presence of the soils engineer may result in exclusions of affected areas from the final compaction report for the project.

OBSERVATION and TESTING:

The recommendations provided in this report are based on preliminary design information and subsurface conditions as interpreted from limited excavations at the site. Our investigation consisted of a field exploration, laboratory testing of typical soil types, a review of the information obtained in this exploration and testing phases, and preparation of this report.

The conclusions and recommendations presented in this report have been prepared in accordance with generally accepted engineering principals and practices, and have incorporated federal, state and local laws, codes, ordinances and regulations which in our professional opinion are applicable at the time of preparation of this report. The logs show subsurface conditions at the dates and locations indicated, and may not be representative of subsurface conditions at other locations and times. Should soil conditions be encountered during construction that appear different from those shown in this report, this office shall be notified immediately so that our recommendations may be re-evaluated.
Our preliminary conclusions and recommendations shall be reviewed and verified during the site grading, and revised accordingly if exposed condition vary from our preliminary findings and interpretations.
The engineering consultant shall provide observation and testing during grading of the subject site. The consultant shall prepare a final as-graded report summarizing the conditions countered and any field modification to the recommendations provided herein. It is recommended that a representative of this office be present when the excavation is first exposed. Modifications to our recommendations may be necessary if significant variation in the soil conditions are encountered.
It shall be noted that the recommendations presented herein is for use in design and for cost estimating purposes prior to construction. The contractor is solely responsible for safety during construction.
This report is issued and made for sole use and benefit of the client, is not transferable and is valid as of the exploration date.

ADDITIONAL OBSERVATION and TESTING MUST BE PROVIDED:

* After completion of site clearing, prior to grading.

* During removal of any existing underground obstructions (if any).

* After removal of unsuitable soils for bottom inspection and during placement of any fill material for laboratory testing of onsite soil, import soils, and compaction testing.

* After footing excavation, prior to placement of steel and pouring concrete.

* After pre-saturation of the slab sub-grade prior to placement of sand and Visqueen.

* During any additional fill placement and compaction.

* When any unusual conditions are encountered

Any unusual condition encountered during site development not discussed in this report shall be brought to our immediate attention.

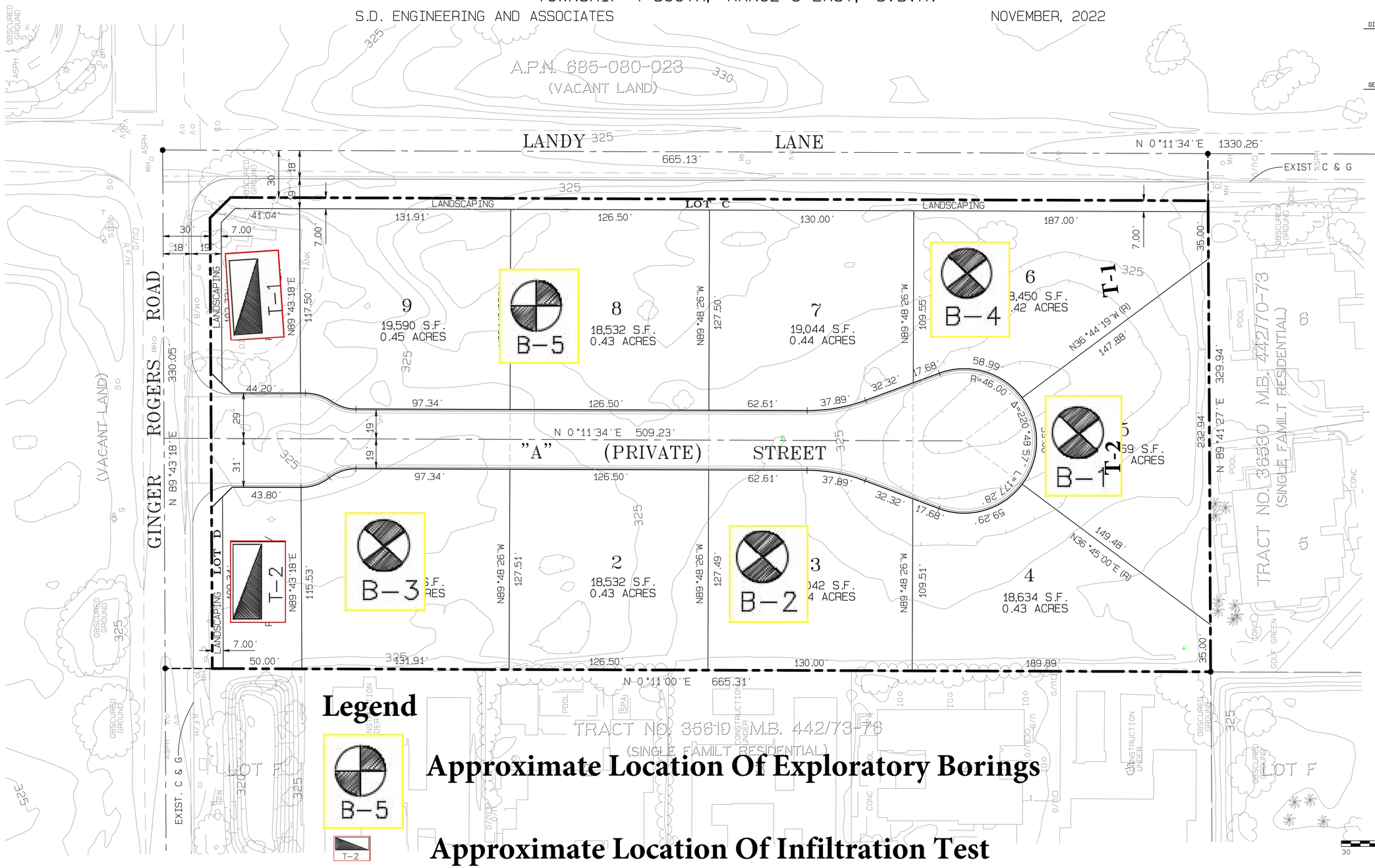
IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

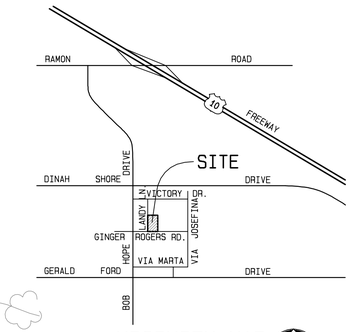
TENTATIVE TRACT MAP NO. 38636

BEING A SUBDIVISION OF GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B.M.

S.D. ENGINEERING AND ASSOCIATES — NOVEMBER, 2022

Plate-1





VICINITY MAP
NTS

Legend

Approximate Location Of Exploratory Borings

B-5

Approximate Location Of Infiltration Test

T-2

GRAPHIC SCALE 1"=30'
30 0 30 60 90

1. OWNER/SUBDIVIDER

72094 GINGER ROGERS LLC
ATTN: MR. FARHAD ZOMORADI
P.O. BOX 10544
BEVERLY HILLS, CA 90213
PH: (310) 428-2875

2. ENGINEER

S.D. ENGINEERING AND ASSOCIATES
242 E. AIRPORT DRIVE, STE. 212
SAN BERNARDINO, CA 92408
ATTN: MR. SURESH DODDIAH
PH: (909) 215-3451

3. LEGAL DESCRIPTION

GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B. & M.

4. ASSESSORS PARCEL NO:

685-080-002

5. ZONING

EXISTING AND PROPOSED:
VERY LOW DENSITY RESIDENTIAL (R-L-2)

6. ACREAGE

4.37 ACRES

7. LETTER LOT AREAS

LOT A = 5,758 S.F. (0.13 AC.)
LOT B = 5,818 S.F. (0.13 AC.)
LOT C = 5,158 S.F. (0.12 AC.)
LOT D = 741 S.F. (0.02 AC.)

S.D. ENGINEERING AND ASSOCIATES
LAND PLANNING AND CIVIL ENGINEERING
242 E. AIRPORT DRIVE, STE. 212 - SAN BERNARDINO, CA 92408
PHONE (909) 215-3451 EMAIL: suresh@sdengineering.net

SURESH DODDIAH R.C.E. 36361 DATE

REGISTERED PROFESSIONAL ENGINEERS — SURESH DODDIAH — NO. 36361 EXP. 6-30-24 — CIVIL — STATE OF CALIFORNIA

DIG ALERT — DIAL BEFORE YOU DIG TOLL FREE 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH CONDITIONS AND STANDARDS IN EFFECT.

BENCHMARK: CITY BM #PD 18-5

BEING A 1-1/2" COPPERWELD IN ASPHALT, FLUSH, AT THE CENTERLINE INTERSECTION OF BOB HOPE DRIVE AND DINAH SHORE DRIVE.

ELEV. = 347.672

CITY OF RANCHO MIRAGE, CALIFORNIA

DRAWN BY: EB	TENTATIVE TRACT MAP NO. 38636	SCALE: 1"=20'
DESIGNED BY: EB	72094 GINGER ROGERS ROAD	DATE: 12/5/2022
CHECKED BY: SD		DRAWING NO.: 1 / 1

Project No.: 23-0102S
March 03, 2023

A P P E N D I X "A"

REFERENCES

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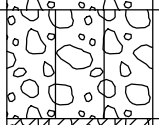
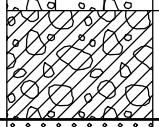
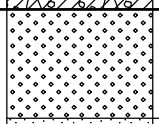
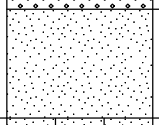
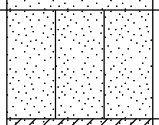
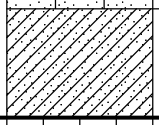
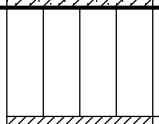
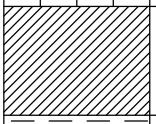
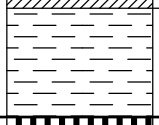
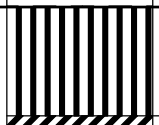
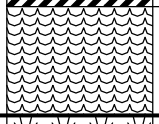
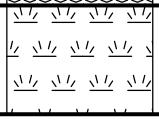
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A P P E N D I X "B"

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Project No.: 23-0101S

BORING LOG
B-1

Sheet 1 of 1

Project: Rancho Mirage

Date 03/01/2023

EQUIPMENT: HOLLOW STEM

Elevation Top of Hole See Plate 1

DEPTH (ft.)	Graphic Symbole	Sample No.	Dry Density (pcf)	Moisture Content (%)	Soil Classification (U.S.C.S.)		Geotechnical Description
							Sampled By MS/TS Logged By MS
0		[1] @ 1'–4'	——	3.2	SM	TOP-SOILS	0–2' DRY WEEDS MIXED WITH SANDY SILT/SILTY FINE SAND WITH TRASH, LOOSE, VERY DRY.
5		(1) @ 4'	DISTURBED	5.3			
		(2) 5'	112.2	5.3	SM	ALLUVIAL	2'–4' SILTY FINE SAND TO SANDY SILT, LOOSE TO DENSE, DRY TO MOD MOIST, LIGHT GREYISH, FINE SANDY, DENSE WITH DEPTH, MORE MOIST.
10							4'–7' BECOMES MORE DENSE, LIGHT GREY SANDY SILTY, FINE, MORE MOIST WITH DEPTH.
15							
20							7'– MORE DENSE WITH DEPTH, DIFFICULT TO EXCAVATE.
25							TOTAL DEPTH = 7 FEET NO GROUND WATER SLIGHT CAVING ON UPPER 4 FEET
30							[1] INDICATE BULK SAMPLE COLLECTED (2) INDICATE UNDISTURBED SAMPLE COLLECTED

Project No.: 23-0101S

BORING LOG
B-2

Sheet 1 of 1

Project: Rancho Mirage

Date 03/01/2023

EQUIPMENT: HOLLOW STEM

Elevation Top of Hole See Plate 1

DEPTH (ft.)	Graphic Symbole	Sample No.	Dry Density (pcf)	Moisture Content (%)	Soil Classification (U.S.C.S.)		Geotechnical Description
							Sampled By MS/TS Logged By MS
0					SM	TOP-SOILS	0-2' DRY WEEDS MIXED WITH SANDY SILT/SILTY FINE SAND WITH TRASH, LOOSE, VERY DRY.
5					SM	ALLUVIAL	2'-4' SILTY FINE SAND TO SANDY SILT, LOOSE TO DENSE, DRY TO MOD MOIST, LIGHT GREYISH, FINE SANDY, DENSE WITH DEPTH, MORE MOIST.
10							4'-7' BECOMES MORE DENSE, LIGHT GREY SANDY SILTY, FINE, MORE MOIST WITH DEPTH.
15							7'- MORE DENSE WITH DEPTH, DIFFICULT TO EXCAVATE.
20							
25							TOTAL DEPTH = 7 FEET NO GROUND WATER SLIGHT CAVING ON UPPER 4 FEET
30							

Project No.: 23-0101S

BORING LOG
B-3

Sheet 1 of 1

Project: Rancho Mirage

Date 03/01/2023

EQUIPMENT: HOLLOW STEM

Elevation Top of Hole See Plate 1

DEPTH (ft.)	Graphic Symbole	Sample No.	Dry Density (pcf)	Moisture Content (%)	Soil Classification (U.S.C.S.)	
0					SM	TOP-SOILS
5					SM	ALLUVIAL
10						
15						
20						
25						
30						

Geotechnical Description

Sampled By MS/TS

Logged By MS

0-2' DRY WEEDS MIXED WITH SANDY SILT/SILTY FINE SAND WITH TRASH, LOOSE, VERY DRY.

2'-4' SILTY FINE SAND TO SANDY SILT, LOOSE TO DENSE, DRY TO MOD MOIST, LIGHT GREYISH, FINE SANDY, DENSE WITH DEPTH, MORE MOIST.

4'-7' BECOMES MORE DENSE, LIGHT GREY SANDY SILTY, FINE, MORE MOIST WITH DEPTH.

7'- MORE DENSE WITH DEPTH, DIFFICULT TO EXCAVATE.

TOTAL DEPTH = 7 FEET

NO GROUND WATER

SLIGHT CAVING ON UPPER 4 FEET

Project No.: 23-0101S

BORING LOG
B-4

Sheet 1 of 1

Project: Rancho Mirage

Date 03/01/2023

EQUIPMENT: HOLLOW STEM

Elevation Top of Hole See Plate 1

DEPTH (ft.)	Graphic Symbole	Sample No.	Dry Density (pcf)	Moisture Content (%)	Soil Classification (U.S.C.S.)	
0					SM	TOP-SOILS
5					SM	ALLUVIAL
10						
15						
20						
25						
30						

Geotechnical Description

Sampled By MS/TS

Logged By MS

0-2' DRY WEEDS MIXED WITH SANDY SILT/SILTY FINE SAND WITH TRASH, LOOSE, VERY DRY.

2'-4' SILTY FINE SAND TO SANDY SILT, LOOSE TO DENSE, DRY TO MOD MOIST, LIGHT GREYISH, FINE SANDY, DENSE WITH DEPTH, MORE MOIST.

4'-7' BECOMES MORE DENSE, LIGHT GREY SANDY SILTY, FINE, MORE MOIST WITH DEPTH.

7'- MORE DENSE WITH DEPTH, DIFFICULT TO EXCAVATE.

TOTAL DEPTH = 7 FEET

NO GROUND WATER

SLIGHT CAVING ON UPPER 4 FEET

Project No.: 23-0101S

BORING LOG
B-5

Sheet 1 of 1

Project: Rancho Mirage

Date 03/01/2023

EQUIPMENT: HOLLOW STEM

Elevation Top of Hole See Plate 1

DEPTH (ft.)	Graphic Symbole	Sample No.	Dry Density (pcf)	Moisture Content (%)	Soil Classification (U.S.C.S.)		Geotechnical Description
							Sampled By MS/TS Logged By MS
0					SM	TOP-SOILS	0-2' DRY WEEDS MIXED WITH SANDY SILT/SILTY FINE SAND WITH TRASH, LOOSE, VERY DRY.
5					SM	ALLUVIAL	2'-4' SILTY FINE SAND TO SANDY SILT, LOOSE TO DENSE, DRY TO MOD MOIST, LIGHT GREYISH, FINE SANDY, DENSE WITH DEPTH, MORE MOIST.
10							4'-7' BECOMES MORE DENSE, LIGHT GREY SANDY SILTY, FINE, MORE MOIST WITH DEPTH.
15							7'- MORE DENSE WITH DEPTH, DIFFICULT TO EXCAVATE.
20							
25							TOTAL DEPTH = 7 FEET NO GROUND WATER SLIGHT CAVING ON UPPER 4 FEET
30							

SAMPLING PROCEDURES

Undisturbed Samples:

Samples of the subsurface materials were obtained from the exploratory borings and/or trenches in a relatively undisturbed condition. The depth at which each "undisturbed" sample was obtained is shown on the boring and/or trench logs.

The sampler used to obtain "undisturbed" samples is generally a split-barrel sampler, or a thin-wall sampler (Shelby tube).

The split-core barrel drive sampler:

The sampler, with an external diameter of 3.0 inches, is lined with 1-inch long thin brass rings with an inside diameter of 2.41 inches. The sample barrel is driven into the ground with an effective weight of the Kelly bar of the boring machine. The Kelly bar is permitted to free-fall. The approximate length of the fall, the weight of the bar, and the number of blows per foot of driving are noted and recorded on the boring logs. Blow counts have been noted in the log of borings as an index to the relative resistance of the sampled materials. The samples are removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

Shelby Tube:

The tube, with an external diameter of 3.0 inches and a length of 2 to 3 feet, is a seamless thin-walled steel tube commonly known as a Shelby tube and has a beveled butting edge at the lower end. The tube is connected to the drill rod and pushed by a static force into the bottom of the hole. When the tube is almost full (avoid over-penetration), it is withdrawn from the hole, removed from the drill rod, sealed at both ends with paraffin, and carefully shipped to the laboratory for testing.

The Standard Penetration Test Spoon:
The spoon is driven into the ground for 18 inches with a 140-pound hammer free-falling from a height of 30 inches. The blow counts are recorded for every 6 inches of penetration. (The reported blow counts are the blow counts for the last 12 inches of penetration.) The soil samples are examined and carefully removed from the spoon, bagged, and sealed and transported to the laboratory for testing.
Disturbed Samples:
Bulk samples of representative materials were also obtained from the borings and/or trenches, bagged and transported to the laboratory for testing.

A P P E N D I X "C"

MAXIMUM DRY DENSITY/OPTIMUM MOISTURE TEST RESULTS

****

Soil Type or Location	Soil Description	Optimum Moisture (%)	Max. Dry Density (Pcf)
B-1 at 2'-4'	Silty Sand/Sandy Silt	7.0	125.0

EXPANSION INDEX TEST RESULTS

****

Soil Type or Location	Expansion Index	Potential Expansion
B-1 @ 2'-4'	7	Very Low

Soluble Sulfate

****

Soil Type or Location	Soil Description	Sulfate % By Weight
B-1 @ 2'-4'	Silty Sand/Sandy Silt	0.0880

LABORATORY TESTING PROCEDURES

Moisture and Density Tests: Moisture content and dry density determinations were performed on relatively undisturbed samples obtained from the test borings and/or trenches. The results of these tests are presented in the boring and/or trench logs. Where applicable, only moisture content was determined from "undisturbed" or disturbed samples.

Classification Tests: Typical materials were subjected to mechanical grain-size analysis by wet sieving from U.S. Standard brass screens (ASTM D422). Hydrometer analyses were performed where appreciable quantities of fines were encountered. The data was evaluated in determining the classification of the materials. The grain-size distribution curves are presented in the test data and the Unified Soil Classification is presented in both the test data and the boring and/or trench logs.

Atterberg Limits: The Atterberg Limits were determined in accordance with ASTM D423 and ASTM D424 for engineering classification of the fine-grained materials.

Direct Shear Tests: Direct Shear Tests were performed on selected remolded and/or undisturbed samples which were socked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box, and reloading the sample, pore pressures set up in the sample due to the transfer were allowed to dissipate for a period of approximately 1 hour prior to application of shearing force. The samples were tested under various normal loads, a different specimen being used for each normal load. The samples were sheared in a motor-driven, strain-controlled, direct shear testing apparatus at a strain rate of 0.05 inches per minute. After a travel of 0.300 inches of the direct shear machine, the motor was stopped and the sample was allowed to "relax" and "peak" shear values were recorded. It is anticipated that, in a majority of samples tested, the 15 minutes relaxing of the sample is sufficient to allow dissipation of pore pressures set up in the samples due to application of shearing force. The relaxed values are therefore, judged to be a good estimation of effective strength parameters. The test results were plotted on the "Direct Shear Summary".

For residual direct shear test, the samples were sheared, as described in the preceding paragraph, with the rate of shearing of 0.001 inches per minutes. The upper portion of the specimen was pulled back to the original position and the shearing process was repeated until no further decrease in shear strength was observed with continued shearing (at least three times re-sheared). There are two methods to obtain the shear values: (a) the shearing process was repeated for each normal load applied and the shear value for each normal load was recorded. One or more than one specimen can be used in this method; (b) only one specimen was needed, and a very high normal load (approximately 9000 psf) was applied from the beginning of the shearing process. After the equilibrium state was reached (after "relaxed", the shear value for that normal load was recorded. The normal loads were then reduced gradually without shearing the sample (the motor was stopped). The shear values were recorded for different normal loads after they were reduced and the sample was "relaxed".

Maximum Density Test: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557-91 (five layers). The results of these tests are presented in the test data.

Expansion Index Tests: The expansion potential of selected materials was evaluated by the Expansion Index Test, U.B.C. Standard No. 29-2. Specimens are molded under a given compactive energy to approximately the optimum moisture and approximately 50% saturation or approximately 90% relative compaction. The prepared 1-inch thick by 4-inch diameter specimens are loaded to an equivalent 144 psf surcharge and are inundated with tap water until volumetric equilibrium is reached. The results of these tests are presented in the test data.

Consolidation Tests: Consolidation tests were performed on selected, relatively undisturbed samples recovered from the sampler. Samples were placed in a consolidometer and loads were applied in geometric progression. The percent consolidation for each load cycle was recorded as the ratio of the amount of vertical compression to the original 1-inch height. The consolidation pressure curves are presented in the test data. Where applicable, time-rates of consolidation were also recorded. A plot of these rates can be used to estimate time of consolidation.

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by the California Materials Method No. 417.

"R"-Value: The resistance "R"-Value was determined by the California Materials Method No. 301 for base, sub-base, and basement soils. Three samples were prepared and exudation pressure and "R"-Value determined on each one. The graphically determined "R"-Value at exudation pressure of 300 psi is reported.

Triaxial Compression Tests: Triaxial compression tests were performed on selected remolded and/or undisturbed samples according to ASTM 2166 (Unconfined) and ASTM 2850 (Confined).

A P P E N D I X “D”

GENERAL EARTHWORK and GRADING SPECIFICATIONS:

1.0 General Intent

These specifications present general procedures and requirements for grading and earthwork as shown on the approved grading plans, including preparation of areas to be filled, placement of fill, installation of sub-drains, and excavations. The recommendations contained in the geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in case of conflict Evaluations performed by the consultant during the course of grading may result in new recommendations which could supersede these specifications or the recommendations of the geotechnical report.

2.0 Earthwork Observation and Testing

Prior to the commencement of grading, a qualified geotechnical consultant (soils engineer and engineering geologist, and their representatives) shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance with the recommendations of the geotechnical report and these specifications. It will be necessary that the consultant provide adequate testing and observation so that he may determine that the work was accomplished as specified. It shall be the responsibility of the contractor to assist the consultant and keep him apprised of work schedules and change so that he may schedule his personnel accordingly.

It shall be the sole responsibility of the contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the consultant, unsatisfactory conditions, such as questionable soil, poor moisture condition, inadequate compaction, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the consultant will be empowered to reject the work and recommend that construction be stopped until the conditions are rectified.

Maximum dry density tests used to determine the degree of compaction will be performed in accordance with the American Society for Testing and Materials test method ASTM D1557-91.

3.0 Preparation of Areas to be Filled

3.1 Clearing and Grubbing:

All brush, vegetation, and debris shall be removed or piled and otherwise disposed of.

3.2 Processing:

The existing ground which is determined to be satisfactory for support of fill shall be scarified to a minimum depth of 6 inches. Existing ground which is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until the soils are broken down and free of large clay lumps or clods and until the working surface is reasonably uniform and free of uneven features which would inhibit uniform compaction.

3.3 **Over-excavation:**

Soft, dry, spongy, highly fractured or otherwise unsuitable ground, extending to such a depth that surface processing cannot be adequately improve the condition, shall be over-excavated down to firm ground and approved by the consultant.

3.4 **Moisture Conditioning:**

Over-excavated and processed soils shall be watered, dried-back, blended, and/or mixed, as required to attain a uniform moisture content near optimum.

3.5 **Recompaction:**

Overexcavated and processed soils which have been properly mixed and moisture-conditioned shall be recompacted to a minimum relative compaction of 90 percent.

3.6 **Benching:**

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be steeped or benched. The lowest bench shall be a minimum of 15 feet wide, shall be at least 2 feet deep, shall expose firm material, and shall be approved by the consultant. Other benches shall be excavated in firm material for a minimum width of 4 feet. Ground sloping flatter than 5:1 shall be benched or otherwise over-excavated when considered necessary by the consultant.

3.7 **Approval:**

All areas to receive fill, including processed areas, removal areas and toe-of-fill benches shall be approved by the consultant prior to fill placement.

4.0 Fill Material

4.1 **General:**

Material to be placed as fill shall be free of organic matter and other deleterious substances, and shall be approved by the consultant. Soils of poor graduation, expansion, or strength characteristics shall be placed in areas designated by the consultant or shall be mixed with other soils to serve as satisfactory fill material.

4.2 **Oversize:**

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 12 inches, shall not be buried or placed in fills, unless the location, materials, and disposal methods are specifically approved by the consultant. Oversize disposal operations shall be such that nesting of oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet vertically of finish grade or within the range of future utilities or underground construction, unless specifically approved by the consultant.

4.3 **Import:**

If importing of fill material is required for grading, the import material shall meet the requirements of Section 4.1.

5.0 Fill Placement and Compaction

5.1 **Fill Lifts:**

Approved fill material shall be placed in areas prepared to receive fill in near-horizontal layers not exceeding 6 inches in compacted thickness. The consultant may approve thicker lifts if testing indicates the grading procedures are such that adequate compaction is being achieved with lifts of greater thickness. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to attain uniformity of material and moisture in each layer.

5.2 **Fill Moisture:**

Fill layers at a moisture content less than optimum shall be watered and mixed, and wet fill layers shall be aerated by scarification or shall be blended with drier material. Moisture-conditioning and mixing of fill layers shall continue until the fill material is at a uniform moisture content at or near optimum.

5.3 **Compaction of Fill:**

After each layer has been evenly spread, moisture-conditioned, and mixed, it shall be uniformly compacted to not less than 90 percent of maximum dry density. Compaction equipment shall be adequately sized and shall be either specifically designed for soil compaction or of proven reliability, to efficiently achieve degree of compaction.

5.4 **Fill Slopes:**

Compacting of slopes shall be accomplished, in addition to normal compacting procedures, by backrolling of slopes with sheepsfoot rollers at frequent increments of 2 to 3 feet in fill elevation gain, or by other methods producing satisfactory results. At the completion of grading, the relative compaction of the slope out to the slope face shall be at least 90 percent.

5.5 **Compaction Testing:**

Field tests to check the fill moisture and degree of compaction will be performed by the consultant. The location and frequency of tests shall be at the consultant's discretion. In general, the tests will be taken at an interval not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of embankment.

6.0 **Subdrain Installation**

Subdrain systems, if required, shall be installed in approved ground to conform to the approximate alignment and details shown on the plans or herein. The subdrain location or materials shall not be changed or modified without the approval of the consultant. The consultant, however, may recommend and upon approval, direct changes in subdrain line, grade or material. All subdrains should be surveyed for line and grade after installation and sufficient time shall be allowed for the surveys, prior to commencement of filling over the subdrains.

7.0 **Excavation**

Excavations and cut slopes will be examined during grading. If directed by the consultant, further excavation or over-excavation and refilling of cut areas shall be performed, and/or remedial grading of cut slopes shall be performed. Where fill-over-cut slopes are to be graded, unless otherwise approved, the cut portion of the slope shall be made and approved by the consultant prior to placement of materials for construction of the fill portion of the slope.

Appendix E Infiltration Evaluation, dated March 04, 2023

Project No. 23-0102-Inf
March 04, 2023

Sampson and Associates

CONSULTING ENGINEERS
Soil, Geology, Environmental

TO: **Mr. Farhad Zomorodi**
9165 Alcott, #203
Los Angeles, Ca.

SUBJECT: Infiltration Evaluation, New Single-Family Residences On TTM No. 38636 In The City of Rancho Mirage, California.

INTRODUCTION:

We sincerely appreciate the opportunity to be of service to you on this project. The primary objective of this study was to evaluate an infiltration rate of the onsite subsurface soils for the design of the infiltration drainage system to be constructed at designated area for the above subject site.

If you have any questions regarding this report please do not hesitate to contact this office at your convenience. We appreciate the opportunity to be of service on this project.

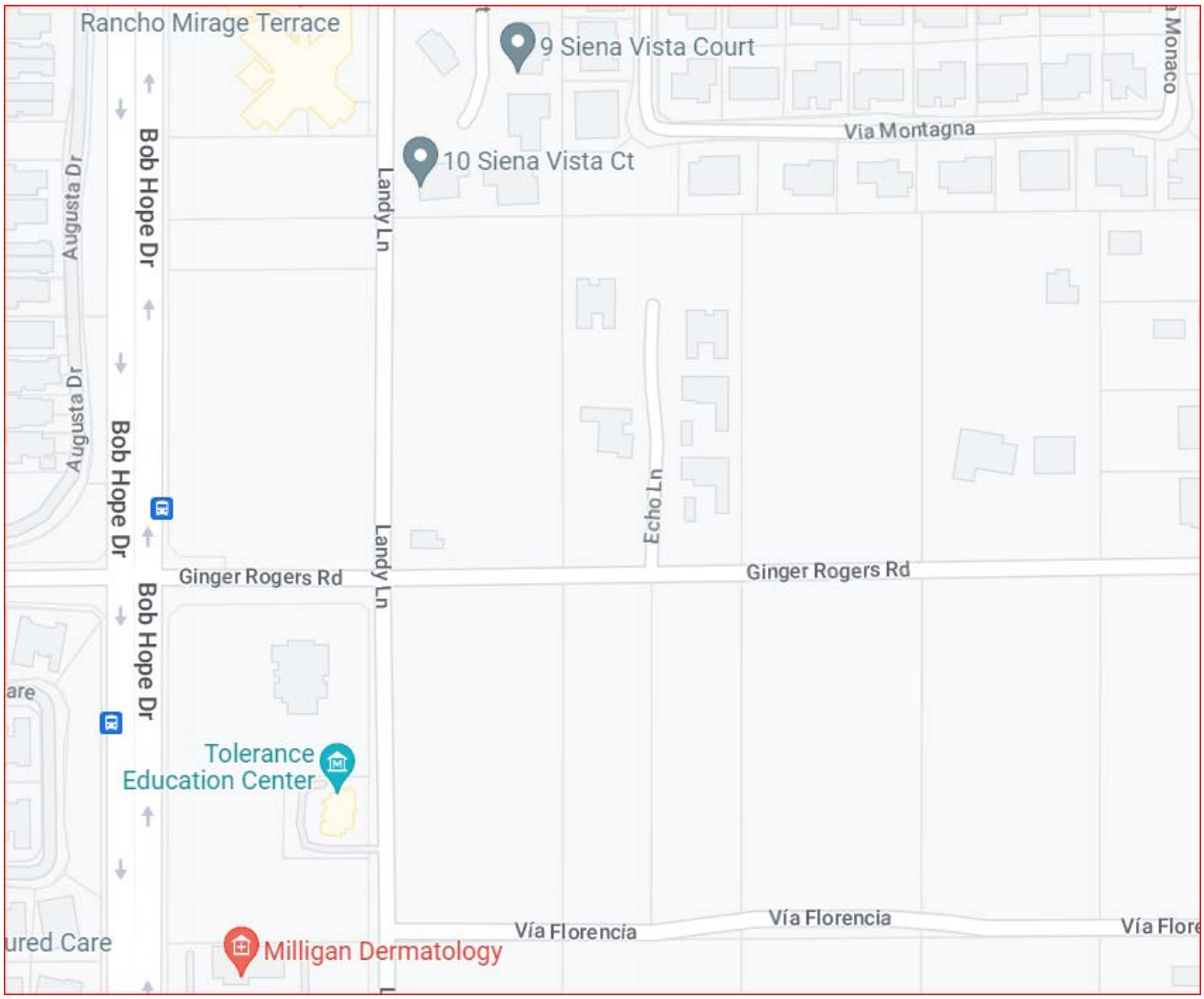
Respectfully Submitted;
Sampson and Associates

M. E. Samiee MS, Calif. RCE 46172
MS/db
Distribution: (4) Addressee

REGISTERED PROFESSIONAL ENGINEER
M. E. SAMIEE
C46172
Exp. 12/31/24
CIVIL
STATE OF CALIFORNIA

P. O. Box 834, San Dimas, California 91773 Tel.: (909) 522-7067
E-Mail: sampsongeotechnical@gmail.com

Project No. 23-0102-Inf
March 04, 2023



Index Map

Of

TTM No.: 3863
City of Rancho Mirage, California

ACCOMPANYING MAPS & ILLUSTRATIONS,:

Index Map - Page 2
Plate 1 - Site Plan and Approximate Location of Infiltration Tests
Appendix "A" - Field Test Logs

SITE LOCATION, PROPOSED DEVELOPMENT, and CONDITION:

The proposed development consists of (5) single-family residences with associated parking spaces located on north-east corner of Landy Lane and Ginger Rogers Road, TTM No. 3863 in the City of Rancho Mirage, California. Access to the site is available via improved Ginger Rodgers Road. The site is occupied with a small residence located on south side of the lot which is proposed to be completely demolished becoming part of new development.

The subject site is flat regular rectangular shape lot bounded by Ginger Rodgers Road on south, by Landy Lane on west, and by developed residential properties on east and north.

Project is covered with native weeds and large bushes. Drainage onsite is uncontrolled by sheet flow towards south.

SUBSURFACE INVESTIGATION:

To evaluate the subsurface condition of the subject sites, Five (5) exploratory Borings were drilled to maximum depths of (7) feet as shown on Plate-1. The excavations were then backfilled. The test Pits were logged and sampled. Bulk and relatively undisturbed samples were collected for proper laboratory testing.

SUBSURFACE CONDITIONS:

Soil materials encountered in our borings consisted loose fine sand deposit deposited by prevailing winds, sand and gravel of the valley area. The approximately 24 inches of loose to very loose and dry light greyish alluvial sand with fine silt and gravel of major creeks and stream washes material underlain by loose and dry light greyish sandy fine silt soils to dense and moist sandy silty soils within the depth of our borings.

GROUND WATER:

No ground water or any perched ground water was observed at our test locations onsite during the course of our investigation.

DOUBLE RING INFILTRATION TEST:

One (I) excavation was dug by hand, to a depth of about one (4) foot below existing grade at the approximate locations of the proposed infiltration drainage system of the site in the area identified by the project civil engineer as being the area to be used for infiltration purposes. Infiltration testing was completed using a double ring infiltrometer device into the ground, water was supplied with a constant falling head condition to a fixed point. A representative from our firm conducted the actual infiltration testing to record how much of water infiltrates into the soil over a given time period.

The incremental infiltration velocity within the inner test cylinder is equivalent to the infiltration rate (in/hr). The slowest/most conservative infiltration rate of **4.5 inches per hour** was measured for the test hole, after the infiltration rate had generally stabilized. The testing was completed in general conformance with ASTM D 3385.

FACTOR OF SAFETY:

The infiltration rates presented are based on field test results, the rates presented are measured field rates and should not be considered design infiltration rates. The designer should consider possible site variability in their design. Application of an appropriate safety factor may be required by the authorizing agency. The design engineer must use the factor of safety with the lowest average measured infiltration rate to achieve the design value as needed. The infiltration rate is approximately 4.5 in/hr.

RECOMMENDATIONS:

Bases on the result of the tests, the site is suitable for the storm-water infiltration system from a geotechnical viewpoint. Recommendations are provided as follows:

- Based on our testing water infiltration at the site is feasible. Filter fabric should be used whenever aggregate are placed against native soils. The infiltration rates are as follow:
  Test # 1 Infiltration Rate @ 4 feet depth = 6.43 in/hr.
  Test # 2 Infiltration Rate @ 4 feet depth = 6.26 in/hr.
  Test # 3 Infiltration Rate @ 6 feet depth = 4.5 in/hr. ← Use This Rate

- Infiltration water should not be allowed to saturate pavement and concrete structure sub-grade soils.
- The planned infiltration system should extend vertically into native soils. The designer should review the attached geotechnical Log for soils classification.
- The soils in infiltration area should not be subject to compaction during construction.
- The proposed system designed by Civil Engineer should be constructed and maintained in accordance with manufacture guidelines.
- Infiltration facilities must not be blocked by heavy equipment by using the infiltration area as a sediment trap.

- Infiltration facilities should be constructed late in the site development after soils has been stabilized or should be protected by flagging until work is completed.
- A minimum distance of 10 feet in any directions shall be provided from the building foundation to the proposed stormwater infiltration system.
- The potential for creating perched water conditions that may adversely affect the proposed and existing structures is nil due to the onsite permeable soils.
- The subsurface soil will not exhibit instability as a result of implementing the proposed BMP's.
- There will be no geotechnical hazards posed to the proposed and existing structures on and adjacent to the site, if a minimum distance of 10 feet in any directions provided from the building foundations to the proposed stormwater infiltration system.
- It must be noted that over the lifetime of the disposal area the infiltration rate may be affected by sediment build ups and biological activities as well as local variation in soils subsurface condition.
- Ferrous metal pipes should be protected from potential corrosion by bituminous coating, etc. We recommend that all utility pipes be nonmetallic and/or corrosion resistance. Recommendation should be verified by soluble sulfate and corrosion testing of soils samples obtained from specific locations during construction.

LIMITATONS:

Based on our visual observation it appears that the soils condition to be the same throughout the site however; soils material may vary in character between excavations and natural outcrops or conditions exposed during construction. Should soil conditions be encountered during construction that appear different this office must be notified immediately so that our recommendations may be re-evaluated.

Project No. 23-0102-Inf
March 04, 2023

A P P E N D I X "A"

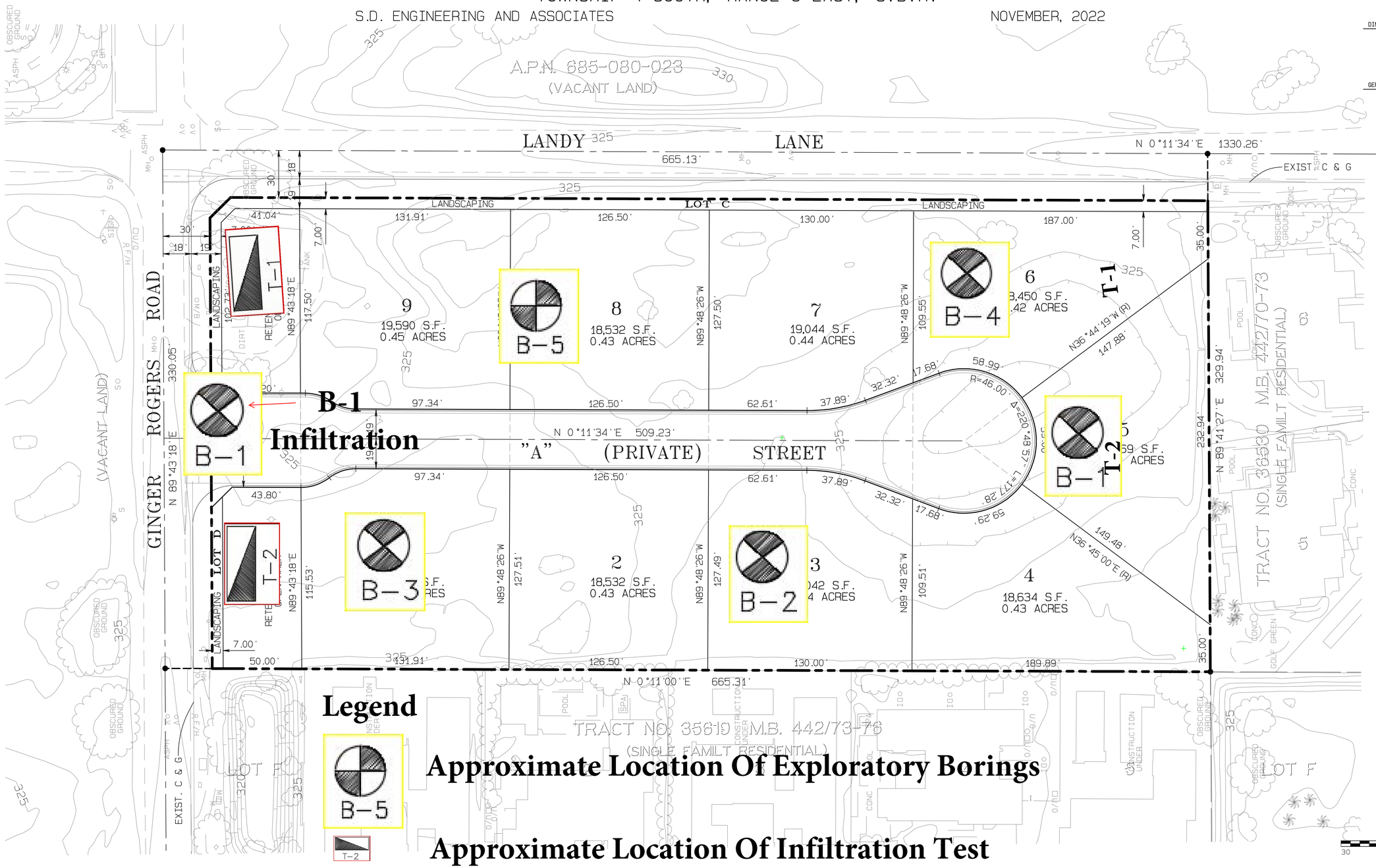
IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP NO. 38636

BEING A SUBDIVISION OF GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B.M.

S.D. ENGINEERING AND ASSOCIATES — NOVEMBER, 2022

Plate-1



B-1
Infiltration

Legend

Approximate Location Of Exploratory Borings

Approximate Location Of Infiltration Test

1. OWNER/SUBDIVIDER

72094 GINGER ROGERS LLC
ATTN: MR. FARHAD ZOMORADI
P.O. BOX 10544
BEVERLY HILLS, CA 90213
PH: (310) 428-2875

2. ENGINEER

S.D. ENGINEERING AND ASSOCIATES
242 E. AIRPORT DRIVE, STE. 212
SAN BERNARDINO, CA 92408
ATTN: MR. SURESH DODDIAH
PH: (909) 215-3451

3. LEGAL DESCRIPTION

GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B. & M.

4. ASSESSORS PARCEL NO:

685-080-002

5. ZONING

EXISTING AND PROPOSED:
VERY LOW DENSITY RESIDENTIAL (R-L-2)

6. ACREAGE

4.37 ACRES

7. LETTER LOT AREAS

LOT A = 5,758 S.F. (0.13 AC.)
LOT B = 5,818 S.F. (0.13 AC.)
LOT C = 5,158 S.F. (0.12 AC.)
LOT D = 741 S.F. (0.02 AC.)

S.D. ENGINEERING AND ASSOCIATES
LAND PLANNING AND CIVIL ENGINEERING
242 E. AIRPORT DRIVE, STE. 212 - SAN BERNARDINO, CA 92408
PHONE (909) 215-3451 EMAIL: suresh@sdengineering.net

SURESH DODDIAH R.C.E. 36361 DATE

REGISTERED PROFESSIONAL ENGINEER — SURESH DODDIAH — NO. 36361 EXP. 6-30-24 — CIVIL — STATE OF CALIFORNIA

DIGALERT
DIAL BEFORE YOU DIG TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH CONDITIONS AND STANDARDS IN EFFECT.

BENCHMARK: CITY BM #PD 18-5

BEING A 1-1/2" COPPERWELD IN ASPHALT, FLUSH, AT THE CENTERLINE INTERSECTION OF BOB HOPE DRIVE AND DINAH SHORE DRIVE.

ELEV. = 347.672

CITY OF RANCHO MIRAGE, CALIFORNIA

DRAWN BY: EB	TENTATIVE TRACT MAP NO. 38636	SCALE: 1"=20'
DESIGNED BY: EB	72094 GINGER ROGERS ROAD	DATE: 12/5/2022
CHECKED BY: SD		DRAWING NO: 1/1

DOUBLE RING INFILTROMETER TEST DATA

Project Name and Test Location:				Constants-	Ring Data		Liquid Containers	
Rancho Mirage					Area, A_r (in^2)	Depth of Liquid (in)	No.	Vol., V_r (in3/in)
				Inner Ring:	113	4	1	78.54
Test By:	FDC	USCS Class:	SM	Annular Space:	339	4.1	2	176.7
Water Table Depth:	50'	Penetration of Rings into Soil (in.):			Inner:	3 Inch	Outer:	7 Inch
Date of Test:	3/01/23	Liquid Used:	Water	pH: 7.3	Ground Temp (°F):	61	at Depth:	4'
Liquid Level Maintained by using:	( ) Flow Valve ( ) Float Valve ( ) Marriotte Tube ( ) Other:							
Additional Comments:	Depth Below Surface = 4'							

Time interval	Time (hr:min)	Dt (min) & Total	Inner Ring Elev., H (In)	Inner Ring ΔH (in) &	Annular Ring Elev., H (In)	Annular Ring ΔH (in) &	Liquid Temp °F	Infiltration Rate, I** Inner in/hr	Infiltration Rate, I** Outer in/hr	Remarks
1 - Start	7:15	5	2.00	2.25	1.00	3.25	57.00	18.77	20.22	
End	7:20	5	4.25	176.72	4.25	574.28	57.00			
2 - Start	7:20	10	4.25	4.00	4.25	5.50	57.00	16.68	17.20	
End	7:30	15	8.25	314.16	9.75	971.85	57.00			
3 - Start	7:30	15	8.25	3.75	9.75	5.25	57.00	10.43	19.95	
End	7:45	30	12.0	294.53	15.00	927.68	57.00			
4 - Start	7:45	30	1.0	7.0	1.00	5.50	58.00	9.73	5.73	Refilled Tube
End	8:15	60	8.0	549.76	6.50	971.85	60.00			
5 - Start	8:15	30	1.0	6.0	6.50	8.00	60.00	8.34	8,34	Refilled Tube
End	9:15	90	7.00	471.24	14.50	1413.60	61.00			
6 - Start	9:15	60	1.0	11.0	1.00	11.00	61.00	7.65	5.73	Refilled Tube
End	10:15	150	12.00	863.94	12.00	1943.70	62.00			
7 - Start	10:15	60	0.50	10.50	1.00	11.00	62.--	7.30	5.73	Refilled Tube
End	11:15	180	11.0	824.67	12.00	1943.70	63.00			
8 - Start	11:15	60	1.0	9.25	1.00	10.26	63.00	6.43	5.34	Refilled Tube
End	12:15	240	10.25	726.50	11.25	1811.18	63.00			
9 - Start	12:15	60	1.00	9.25	1.00	10.00	64.00	6.43	5.21	Refilled Tube
End	1:15	300	10.25	726.50	11.00	1767.00	64.00			
10 - Start	1:15	60	1.00	9.25	1.00	10.00	64.00	6.43	5.21	Refilled Tube
End	2:15	360	10.25	726.50	11.0	1767.00	64.00			
11 - Start								Use 4.5 In/hr		
End										
12 - Start										
End										
13 - Start										
End										
14 - Start										
End										
15 - Start										
End										

***Flow, Qf = ΔH x Vr **Infiltration Rate, I = (Qf/Ar)/Δt**

Table 3 – Sample Test Data Form for Double Ring Infiltrometer Test

B-Bbbbbbb1

Project No. 23-0102-Inf
March 04, 2023

DOUBLE RING INFILTROMETER TEST DATA

Project Name & Test Location: Rancho Mirage			Infiltration Constants				Ring Data		Liquid Containers	
							Area, Ar (in2)	Depth of Liquid (in)	No.	Vol., Vr (in3/in)
						Inner Ring :	113	4	1	78.54
Test By:	FDC	USCS Class:				Annular Ring :	339	4.1	2	176.7
Water Table Depth:		50 ft.	Penetration of Rings into Soil (in.):				Inner:	3 in	Outter:	7 in
Date of Test:	3/1/23	Liquid Use	Water	pH:	7.5	Gound Temp (˚F):		58	at Depth:	4'
Liquid Level Maintained by using:			( ) Flow Valve ( ) Float Valve (X) Marriotte Tube ( ) Other:							
Additional Comments:			Depth Below Surface = 4'							

Time Interval	Time (hr:min)	Δt (min) & Total	Inner Ring		Annular Ring		Liquid Temp ˚F	Infiltration Rate, I**		Remarks
			Elev., H (in)	ΔH (in) &	Elev., H (in)	ΔH (in) &		inner in/hr	Outer in/hr	
1 - Start	14:00	5	0.75	2.00	1.00	2.75	58.00	16.68	17.20	
End	14:05	5	2.75	157.08	3.75	485.93	58.00			
2 - Start	14:05	10	2.75	3.75	3.75	5.25	59.00	15.64	16.42	
End	14:15	15	6.50	294.53	9.00	927.68	59.00			
3 - Start	14:15	15	6.50	5.25	9.00	7.00	60.00	14.60	14.59	
End	14:30	30	11.75	412.34	16.00	1236.90	60.00			
4 - Start	14:30	30	2.00	9.00	1.50	12.25	60.00	12.51	12.77	
End	15:00	60	11.00	706.86	13.75	2164.58	60.00			Refilled Tubes
5 - Start	15:00	30	1.00	8.75	2.00	12.25	60.00	12.16	12.77	
End	15:30	90	9.75	687.23	14.25	2164.58	61.00			Refilled Tubes
6 - Start	15:30	30	0.50	8.00	1.50	11.75	61.00	11.12	12.25	
End	16:00	120	8.50	628.32	13.25	2076.23	62.00			Refilled Tubes
7 - Start	16:00	30	8.50	6.50	1.00	10.00	62.00	9.04	10.42	
End	16:30	150	15.00	510.51	11.00	1767.00	63.00			
8 - Start	16:30	30	1.00	6.25	0.00	8.50	63.00	8.69	8.86	
End	16:30	180	7.25	490.88	8.50	1501.95	63.00			Refilled Tubes
9 - Start	16:30	30	7.25	5.75	8.50	7.50	63.00	7.99	7.82	
End	17:00	210	13.00	451.61	16.00	1325.25	64.00			
10 - Start	17:00	30	1.00	4.75	1.00	6.75	64.00	6.60	7.04	
End	17:30	240	5.75	373.07	7.75	1192.73	64.00			Refilled Tubes
11 - Start	17:30	30	5.75	4.50	7.75	6.25	65.00	6.26	6.52	
End	18:00	270	10.25	353.43	14.00	1104.38	65.00			
12 - Start	18:00	30	1.00	4.50	2.50	6.50	64.00	6.26	6.78	
End	18:30	300	5.50	353.43	9.00	1148.55	64.00			Refilled Tubes
13 - Start	18:30	30	5.50	4.50	9.00	6.50	63.00	6.26	6.78	
End	19:00	330	10.00	353.43	15.50	1148.55	63.00			
14 - Start								Use 4.5 in/hr		
End										
15 - Start										
End										

Project No. 23-0102-Inf
March 04, 2023

INFILTRATION TESTING FIELD LOG

Boring/Excavation Percolation Testing Field Log Date: 03/01/23

Project Location Rancho Mirage
Earth Description: Silty Gravelly Fine Sand w/cobbles
Tested by: TB/MS

Liquid Description: Tap Water

Boring/test Number: B-1
Diameter of Boring: 8-inch
Depth of Boring: 4' below grade
Depth to Invert of BMP's: 4' below grade
Depth to Water Table: ~~>50'~~

Time Interval Standard:

Start Date for Pre-Soak: 3/01/2023
Start Time for Standard: 11:00

Water Remaining In Boring (Y/N): Yes
Standard Time Interval Between Readings: 30 Minutes

Measurement Method: Measuring Tape
Depth to initial water Depth(d1): 96"

Reading Number	Time Start/End (hh:mm)	Elapsed Time △Time (mins)	Water Drop During Standard Time Interval △D (inches)	Percolation Rate for Reading (in/hr)	Soil Description/Notes/Comments
1	11:00 11:30	30	5.75	11.50	Medium to Coarse, Silty Gravelly Fine Sand
2	12:00 12:30	30	4.25	8.50	
3	13:00 13:30	30	4.0	8.0	
4	14:00 14:30	30	2.25	4.50	
5	15:00 15:305	30	2.25	4.50	
			Infiltration Rate	4.50 In/Hr.	**Use 4.5 In/Hr.**

Appendix F Preliminary Hydrology Study and Hydraulics Report dated April 28, 2023

PRELIMINARY
HYDROLOGY STUDY

AND

HYDRAULICS REPORT

FOR

TENTATIVE TRACT MAP 38636
CITY OF RANCHO MIRAGE

PREPARED BY:

S.D. ENGINEERING AND ASSOCIATES
242 E. Airport Drive, Ste 212
San Bernardino, Ca. 92408
(909) 884-7090
Email: suresh@sdengineering.com

INTRODUCTION

STUDY LOCATION:

This study area consists of approximately 5.04 acres of land with a single Family residential house located at the northeast corner of Ginger Rogers Road and Landy Lane in the City of Rancho Mirage. The proposed project is a 9-lot Tract Homes Subdivision. The site may be accessed via Bob Hope Drive south from from Freeway 10, thence east on Ginger Rogers Road to the project site.

REPORT OBJECTIVE:

The entire area of this project will be developed as a 9-lot Tract Homes. The objective of this report is to determine the basic hydrologic response of the proposed development to both onsite and offsite storm runoff and to establish storm drain facility design criteria for this localized unit for review by the City of Rancho Mirage. The project is in a Very Low Density Residential Zoning

HYDROLOGY METHODOLOGY:

The rational method hydrology system and the unit hydrograph method system of the Riverside County Flood Control and Water Conservation District Hydrology Manual dated April, 1978 will be used in the analysis of the subject site to satisfy the requirements of the City of Rancho Mirage.

SUMMARY:

The project study area is approximately 5.04 acres of land with an existing single family residential house to be demolished and to be replaced with 9-lots Tract Homes. The project is small enough to be classified as a small project . The existing terrain has a drainage pattern from the northeast to the southwest. The drainage pattern will remain the same for the post development condition.
The project site is surrounded on the west by Landy Lane and will be improved with sidewalk, curb and gutter and therefore it will not have significant impact to the project.
On the south side is Ginger Rogers Road and will be improved with sidewalk, curb and gutter, and therefore it will not have significant impact to the project.
To the east and north sides are existing tract homes development with their own drainage system and separated by block walls, therefore they will not have significant impact to the project site.

There will be a short onsite private road that runs north and south and drains from north to south, There is a proposed retention/infiltration basin at the south end of the proposed road to treat runoff before draining to the City storm drain system to satisfy the WQMP requirements. This basin also used to mitigate any increase of runoff from predevelopment to post development conditions if there are any.

The site is in Soil Group inside Riverside-East Soil Group Map.

Onsite storm runoff are calculated before and after development conditions for 10-year and 100-year frequencies to ensure that the site is not flooded during the 100-year storm.

Frequency	Predevlopement Flow (cfs)	Post Development Flow (cfs)	Increase of flow (cfs)	Predevelopment Volume, Ac-Ft	Post Development Volume, Ac-Ft
Q10	1.14	4.22	0.08		
Q100	9.90	11.30	1.40	0.7520	0.5484

Based on the Unit Hydrograph method, the 100-year predevelopment volume is 0.7520 Ac-Ft. and the post development generated volume is 0.5484 Ac-Ft. with a decrease of 0.2036 Ac-Ft., therefore no further mitigation is necessary.

The Infiltration basin has a total capacity of 5,161 cf with a required volume of 1,685 c.f.

WQMP RETENTION VOLUME

Volume Required (cf)	Volume Provided (cf)
1,685	5,161

The proposed 16” drain line has a capacity of 11.67 cfs which is more than the calculated flow of 11.30 cfs.

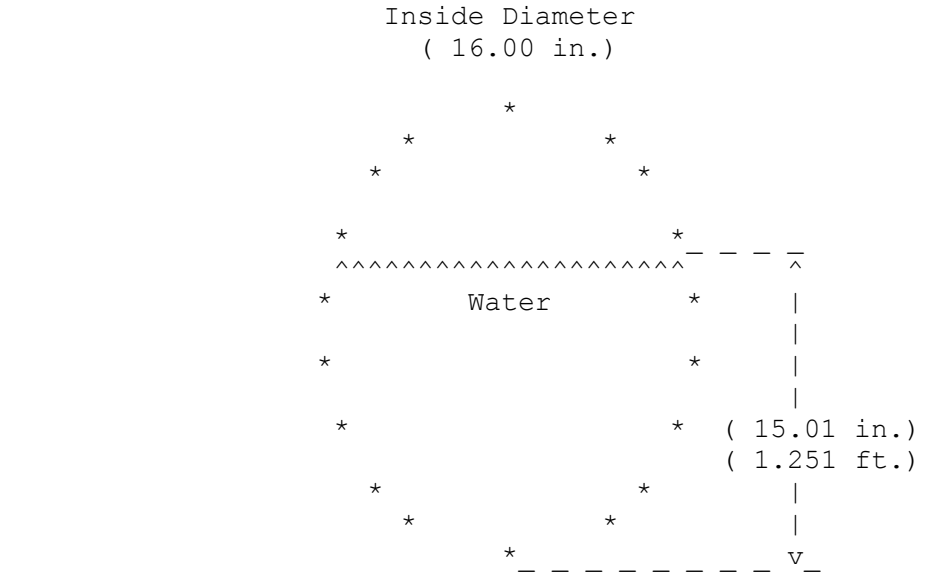
Street depth calculations for the proposed private street show that the street section can adequately handle the expected flow of 11.30 cfs.

The proposed street catch basin inlet opening of 4’ wide is more than adequate to handle the calculated street flow.

CONCLUSION:

This Preliminary Hydrology and Hydraulics Report concludes that the proposed project is safe and feasible from Hydrology and Drainage standpoint.

CAPACITY OF PROPOSED 16” DRAIN LINE



Circular Channel Section

Flowrate	11.673	CFS >11.30 CFS OK
Velocity	8.581	fps
Pipe Diameter	16.000	inches
Depth of Flow	15.008	inches
Depth of Flow	1.251	feet
Critical Depth	1.262	feet
Depth/Diameter (D/d)	0.938	
Slope of Pipe	2.000	%
X-Sectional Area	1.360	sq. ft.

```
           Riverside County Rational Hydrology Program
CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
     Rational Hydrology Study        Date: 04/28/23  File:MIRAGE1.out
------------------------------------------------------------------------
10-YEAR, PREDEVELOPMENT
TTM 38636
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********
 English (in-lb) Units used in input data file
------------------------------------------------------------------------
Program License Serial Number 6260
------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual
Storm event (year) =   10.00 Antecedent Moisture Condition = 2
Standard intensity-duration curves data (Plate D-4.1)
For the [ Cathedral City ] area used.
10 year storm 10 minute intensity =  2.770(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  4.520(In/Hr)
100 year storm 60 minute intensity =  1.600(In/Hr)
Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.980(In/Hr)
Slope of intensity duration curve = 0.5800
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA  EVALUATION
Initial area flow distance =   686.000(Ft.)
Top (of initial area) elevation =   328.800(Ft.)
Bottom (of initial area) elevation =   323.000(Ft.)
Difference in elevation =     5.800(Ft.)
Slope =    0.00845  s(percent)=       0.85
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.996 min.
Rainfall intensity =      2.037(In/Hr) for a    10.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.481
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      4.135(CFS)
Total initial stream area =        4.220(Ac.)
Pervious area fraction = 0.800
End of computations, total study area =            4.22 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number =  32.0
```

```
           Riverside County Rational Hydrology Program
CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
     Rational Hydrology Study        Date: 04/28/23  File:MIRAGE2.out
------------------------------------------------------------------------
100-YEAR, PREVELOPMENT
TTM 38636
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********
 English (in-lb) Units used in input data file
------------------------------------------------------------------------
Program License Serial Number 6260
------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual
Storm event (year) =  100.00 Antecedent Moisture Condition = 3
Standard intensity-duration curves data (Plate D-4.1)
For the [ Cathedral City ] area used.
10 year storm 10 minute intensity =  2.770(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  4.520(In/Hr)
100 year storm 60 minute intensity =  1.600(In/Hr)
Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.600(In/Hr)
Slope of intensity duration curve = 0.5800
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
Initial area flow distance =   686.000(Ft.)
Top (of initial area) elevation =   328.800(Ft.)
Bottom (of initial area) elevation =   323.000(Ft.)
Difference in elevation =     5.800(Ft.)
Slope =    0.00845  s(percent)=       0.85
TC = k(0.480)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.996 min.
Rainfall intensity =      3.325(In/Hr) for a   100.0 year storm
SINGLE FAMILY (1 Acre Lot)
Runoff Coefficient = 0.706
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  52.00
Pervious area fraction =  0.800; Impervious fraction =  0.200
Initial subarea runoff =      9.900(CFS)
Total initial stream area =        4.220(Ac.)
Pervious area fraction = 0.800
End of computations, total study area =            4.22 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.800
Area averaged RI index number =  32.0
```

```
           Riverside County Rational Hydrology Program
CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
     Rational Hydrology Study        Date: 04/28/23  File:MIRAGE3.out
------------------------------------------------------------------------
10-YEAR, POST DEVELOPMENT
TTM 38636
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********
 English (in-lb) Units used in input data file
------------------------------------------------------------------------
Program License Serial Number 6260
------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual
Storm event (year) =   10.00 Antecedent Moisture Condition = 2
Standard intensity-duration curves data (Plate D-4.1)
For the [ Cathedral City ] area used.
10 year storm 10 minute intensity =  2.770(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  4.520(In/Hr)
100 year storm 60 minute intensity =  1.600(In/Hr)
Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.980(In/Hr)
Slope of intensity duration curve = 0.5800
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
Initial area flow distance =   682.000(Ft.)
Top (of initial area) elevation =   328.800(Ft.)
Bottom (of initial area) elevation =   324.000(Ft.)
Difference in elevation =     4.800(Ft.)
Slope =    0.00704  s(percent)=       0.70
TC = k(0.420)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.391 min.
Rainfall intensity =      2.157(In/Hr) for a    10.0 year storm
SINGLE FAMILY (1/2 Acre Lot)
Runoff Coefficient = 0.593
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  32.00
Pervious area fraction =  0.600; Impervious fraction =  0.400
Initial subarea runoff =      5.403(CFS)
Total initial stream area =        4.220(Ac.)
Pervious area fraction = 0.600
End of computations, total study area =            4.22 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.600
Area averaged RI index number =  32.0
```

```
           Riverside County Rational Hydrology Program
CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
     Rational Hydrology Study        Date: 04/28/23  File:MIRAGE4.out
------------------------------------------------------------------------
100-YEAR, POST DEVELOPMENT
TTM 38636
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********
 English (in-lb) Units used in input data file
------------------------------------------------------------------------
Program License Serial Number 6260
------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual
Storm event (year) =  100.00 Antecedent Moisture Condition = 3
Standard intensity-duration curves data (Plate D-4.1)
For the [ Cathedral City ] area used.
10 year storm 10 minute intensity =  2.770(In/Hr)
10 year storm 60 minute intensity =  0.980(In/Hr)
100 year storm 10 minute intensity =  4.520(In/Hr)
100 year storm 60 minute intensity =  1.600(In/Hr)
Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.600(In/Hr)
Slope of intensity duration curve = 0.5800
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station        1.000 to Point/Station        2.000
**** INITIAL AREA EVALUATION ****
Initial area flow distance =   682.000(Ft.)
Top (of initial area) elevation =   328.800(Ft.)
Bottom (of initial area) elevation =   324.000(Ft.)
Difference in elevation =     4.800(Ft.)
Slope =    0.00704  s(percent)=       0.70
TC = k(0.420)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.391 min.
Rainfall intensity =      3.522(In/Hr) for a   100.0 year storm
SINGLE FAMILY (1/2 Acre Lot)
Runoff Coefficient = 0.760
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 3)  =  52.00
Pervious area fraction =  0.600; Impervious fraction =  0.400
Initial subarea runoff =     11.299(CFS)
Total initial stream area =        4.220(Ac.)
Pervious area fraction = 0.600
End of computations, total study area =            4.22 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.600
Area averaged RI index number =  32.0
```

```
      U n i t   H y d r o g r a p h   A n a l y s i s
      Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
           Study date  05/02/23 File: MIRAGE824100.out
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------
Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6260

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format

------------------------------------------------------------------------
UNIT HYDROGRAPH
100-YEAR POST DEVELOPMENT
TTM 38636
RANCHO MIRAGE
------------------------------------------------------------------------
Drainage Area =       4.22(Ac.)  =      0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 4.22(Ac.) = 0.007 Sq. Mi.
Length along longest watercourse =     682.00(Ft.)
Length along longest watercourse measured to centroid =     250.00(Ft.)
Length along longest watercourse =      0.129 Mi.
Length along longest watercourse measured to centroid =      0.047 Mi.
Difference in elevation =       4.80(Ft.)
Slope along watercourse =     37.1613 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.026 Hr.
Lag time =     1.57 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.63 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.22             1.21                  5.11

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.22             4.73                 19.96

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.210(In)
Area Averaged 100-Year Rainfall =    4.730(In)
```

Point rain (area averaged) = 4.730(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.730(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
4.220	32.00	0.280

Total Area Entered = 4.22(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
32.0	52.0	0.552	0.280	0.413	1.000	0.413
					Sum (F) =	0.413

Area averaged mean soil loss (F) (In/Hr) = 0.413
Minimum soil loss rate ((In/Hr)) = 0.206
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.680

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %		Unit Hydrograph (CFS)
1	0.083	319.139	58.131		2.472
2	0.167	638.278	37.534		1.596
3	0.250	957.417	4.335		0.184
			Sum = 100.000	Sum=	4.253

The following loss rate calculations reflect use of the minimum calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.038	(0.731)	0.026	0.012
2	0.17	0.07	0.038	(0.729)	0.026	0.012
3	0.25	0.07	0.038	(0.726)	0.026	0.012
4	0.33	0.10	0.057	(0.723)	0.039	0.018
5	0.42	0.10	0.057	(0.720)	0.039	0.018
6	0.50	0.10	0.057	(0.717)	0.039	0.018
7	0.58	0.10	0.057	(0.715)	0.039	0.018
8	0.67	0.10	0.057	(0.712)	0.039	0.018
9	0.75	0.10	0.057	(0.709)	0.039	0.018
10	0.83	0.13	0.076	(0.706)	0.051	0.024
11	0.92	0.13	0.076	(0.703)	0.051	0.024

12	1.00	0.13	0.076	(0.701)	0.051	0.024
13	1.08	0.10	0.057	(0.698)	0.039	0.018
14	1.17	0.10	0.057	(0.695)	0.039	0.018
15	1.25	0.10	0.057	(0.692)	0.039	0.018
16	1.33	0.10	0.057	(0.690)	0.039	0.018
17	1.42	0.10	0.057	(0.687)	0.039	0.018
18	1.50	0.10	0.057	(0.684)	0.039	0.018
19	1.58	0.10	0.057	(0.681)	0.039	0.018
20	1.67	0.10	0.057	(0.679)	0.039	0.018
21	1.75	0.10	0.057	(0.676)	0.039	0.018
22	1.83	0.13	0.076	(0.673)	0.051	0.024
23	1.92	0.13	0.076	(0.670)	0.051	0.024
24	2.00	0.13	0.076	(0.668)	0.051	0.024
25	2.08	0.13	0.076	(0.665)	0.051	0.024
26	2.17	0.13	0.076	(0.662)	0.051	0.024
27	2.25	0.13	0.076	(0.660)	0.051	0.024
28	2.33	0.13	0.076	(0.657)	0.051	0.024
29	2.42	0.13	0.076	(0.654)	0.051	0.024
30	2.50	0.13	0.076	(0.652)	0.051	0.024
31	2.58	0.17	0.095	(0.649)	0.064	0.030
32	2.67	0.17	0.095	(0.646)	0.064	0.030
33	2.75	0.17	0.095	(0.644)	0.064	0.030
34	2.83	0.17	0.095	(0.641)	0.064	0.030
35	2.92	0.17	0.095	(0.638)	0.064	0.030
36	3.00	0.17	0.095	(0.636)	0.064	0.030
37	3.08	0.17	0.095	(0.633)	0.064	0.030
38	3.17	0.17	0.095	(0.630)	0.064	0.030
39	3.25	0.17	0.095	(0.628)	0.064	0.030
40	3.33	0.17	0.095	(0.625)	0.064	0.030
41	3.42	0.17	0.095	(0.623)	0.064	0.030
42	3.50	0.17	0.095	(0.620)	0.064	0.030
43	3.58	0.17	0.095	(0.617)	0.064	0.030
44	3.67	0.17	0.095	(0.615)	0.064	0.030
45	3.75	0.17	0.095	(0.612)	0.064	0.030
46	3.83	0.20	0.114	(0.610)	0.077	0.036
47	3.92	0.20	0.114	(0.607)	0.077	0.036
48	4.00	0.20	0.114	(0.604)	0.077	0.036
49	4.08	0.20	0.114	(0.602)	0.077	0.036
50	4.17	0.20	0.114	(0.599)	0.077	0.036
51	4.25	0.20	0.114	(0.597)	0.077	0.036
52	4.33	0.23	0.132	(0.594)	0.090	0.042
53	4.42	0.23	0.132	(0.592)	0.090	0.042
54	4.50	0.23	0.132	(0.589)	0.090	0.042
55	4.58	0.23	0.132	(0.587)	0.090	0.042
56	4.67	0.23	0.132	(0.584)	0.090	0.042
57	4.75	0.23	0.132	(0.582)	0.090	0.042
58	4.83	0.27	0.151	(0.579)	0.103	0.048
59	4.92	0.27	0.151	(0.577)	0.103	0.048
60	5.00	0.27	0.151	(0.574)	0.103	0.048
61	5.08	0.20	0.114	(0.572)	0.077	0.036
62	5.17	0.20	0.114	(0.569)	0.077	0.036
63	5.25	0.20	0.114	(0.567)	0.077	0.036
64	5.33	0.23	0.132	(0.564)	0.090	0.042
65	5.42	0.23	0.132	(0.562)	0.090	0.042

66	5.50	0.23	0.132	(0.559)	0.090	0.042
67	5.58	0.27	0.151	(0.557)	0.103	0.048
68	5.67	0.27	0.151	(0.554)	0.103	0.048
69	5.75	0.27	0.151	(0.552)	0.103	0.048
70	5.83	0.27	0.151	(0.549)	0.103	0.048
71	5.92	0.27	0.151	(0.547)	0.103	0.048
72	6.00	0.27	0.151	(0.545)	0.103	0.048
73	6.08	0.30	0.170	(0.542)	0.116	0.054
74	6.17	0.30	0.170	(0.540)	0.116	0.054
75	6.25	0.30	0.170	(0.537)	0.116	0.054
76	6.33	0.30	0.170	(0.535)	0.116	0.054
77	6.42	0.30	0.170	(0.533)	0.116	0.054
78	6.50	0.30	0.170	(0.530)	0.116	0.054
79	6.58	0.33	0.189	(0.528)	0.129	0.061
80	6.67	0.33	0.189	(0.525)	0.129	0.061
81	6.75	0.33	0.189	(0.523)	0.129	0.061
82	6.83	0.33	0.189	(0.521)	0.129	0.061
83	6.92	0.33	0.189	(0.518)	0.129	0.061
84	7.00	0.33	0.189	(0.516)	0.129	0.061
85	7.08	0.33	0.189	(0.514)	0.129	0.061
86	7.17	0.33	0.189	(0.511)	0.129	0.061
87	7.25	0.33	0.189	(0.509)	0.129	0.061
88	7.33	0.37	0.208	(0.507)	0.142	0.067
89	7.42	0.37	0.208	(0.504)	0.142	0.067
90	7.50	0.37	0.208	(0.502)	0.142	0.067
91	7.58	0.40	0.227	(0.500)	0.154	0.073
92	7.67	0.40	0.227	(0.497)	0.154	0.073
93	7.75	0.40	0.227	(0.495)	0.154	0.073
94	7.83	0.43	0.246	(0.493)	0.167	0.079
95	7.92	0.43	0.246	(0.491)	0.167	0.079
96	8.00	0.43	0.246	(0.488)	0.167	0.079
97	8.08	0.50	0.284	(0.486)	0.193	0.091
98	8.17	0.50	0.284	(0.484)	0.193	0.091
99	8.25	0.50	0.284	(0.482)	0.193	0.091
100	8.33	0.50	0.284	(0.479)	0.193	0.091
101	8.42	0.50	0.284	(0.477)	0.193	0.091
102	8.50	0.50	0.284	(0.475)	0.193	0.091
103	8.58	0.53	0.303	(0.473)	0.206	0.097
104	8.67	0.53	0.303	(0.470)	0.206	0.097
105	8.75	0.53	0.303	(0.468)	0.206	0.097
106	8.83	0.57	0.322	(0.466)	0.219	0.103
107	8.92	0.57	0.322	(0.464)	0.219	0.103
108	9.00	0.57	0.322	(0.462)	0.219	0.103
109	9.08	0.63	0.359	(0.459)	0.244	0.115
110	9.17	0.63	0.359	(0.457)	0.244	0.115
111	9.25	0.63	0.359	(0.455)	0.244	0.115
112	9.33	0.67	0.378	(0.453)	0.257	0.121
113	9.42	0.67	0.378	(0.451)	0.257	0.121
114	9.50	0.67	0.378	(0.448)	0.257	0.121
115	9.58	0.70	0.397	(0.446)	0.270	0.127
116	9.67	0.70	0.397	(0.444)	0.270	0.127
117	9.75	0.70	0.397	(0.442)	0.270	0.127
118	9.83	0.73	0.416	(0.440)	0.283	0.133
119	9.92	0.73	0.416	(0.438)	0.283	0.133

120	10.00	0.73	0.416	(0.436)	0.283	0.133
121	10.08	0.50	0.284	(0.434)	0.193	0.091
122	10.17	0.50	0.284	(0.431)	0.193	0.091
123	10.25	0.50	0.284	(0.429)	0.193	0.091
124	10.33	0.50	0.284	(0.427)	0.193	0.091
125	10.42	0.50	0.284	(0.425)	0.193	0.091
126	10.50	0.50	0.284	(0.423)	0.193	0.091
127	10.58	0.67	0.378	(0.421)	0.257	0.121
128	10.67	0.67	0.378	(0.419)	0.257	0.121
129	10.75	0.67	0.378	(0.417)	0.257	0.121
130	10.83	0.67	0.378	(0.415)	0.257	0.121
131	10.92	0.67	0.378	(0.413)	0.257	0.121
132	11.00	0.67	0.378	(0.411)	0.257	0.121
133	11.08	0.63	0.359	(0.409)	0.244	0.115
134	11.17	0.63	0.359	(0.407)	0.244	0.115
135	11.25	0.63	0.359	(0.405)	0.244	0.115
136	11.33	0.63	0.359	(0.403)	0.244	0.115
137	11.42	0.63	0.359	(0.401)	0.244	0.115
138	11.50	0.63	0.359	(0.399)	0.244	0.115
139	11.58	0.57	0.322	(0.397)	0.219	0.103
140	11.67	0.57	0.322	(0.395)	0.219	0.103
141	11.75	0.57	0.322	(0.393)	0.219	0.103
142	11.83	0.60	0.341	(0.391)	0.232	0.109
143	11.92	0.60	0.341	(0.389)	0.232	0.109
144	12.00	0.60	0.341	(0.387)	0.232	0.109
145	12.08	0.83	0.473	(0.385)	0.322	0.151
146	12.17	0.83	0.473	(0.383)	0.322	0.151
147	12.25	0.83	0.473	(0.381)	0.322	0.151
148	12.33	0.87	0.492	(0.379)	0.335	0.157
149	12.42	0.87	0.492	(0.377)	0.335	0.157
150	12.50	0.87	0.492	(0.376)	0.335	0.157
151	12.58	0.93	0.530	(0.374)	0.360	0.170
152	12.67	0.93	0.530	(0.372)	0.360	0.170
153	12.75	0.93	0.530	(0.370)	0.360	0.170
154	12.83	0.97	0.549	0.368	(0.373)	0.181
155	12.92	0.97	0.549	0.366	(0.373)	0.182
156	13.00	0.97	0.549	0.364	(0.373)	0.184
157	13.08	1.13	0.643	0.363	(0.437)	0.281
158	13.17	1.13	0.643	0.361	(0.437)	0.283
159	13.25	1.13	0.643	0.359	(0.437)	0.284
160	13.33	1.13	0.643	0.357	(0.437)	0.286
161	13.42	1.13	0.643	0.355	(0.437)	0.288
162	13.50	1.13	0.643	0.353	(0.437)	0.290
163	13.58	0.77	0.435	(0.352)	0.296	0.139
164	13.67	0.77	0.435	(0.350)	0.296	0.139
165	13.75	0.77	0.435	(0.348)	0.296	0.139
166	13.83	0.77	0.435	(0.346)	0.296	0.139
167	13.92	0.77	0.435	(0.344)	0.296	0.139
168	14.00	0.77	0.435	(0.343)	0.296	0.139
169	14.08	0.90	0.511	0.341	(0.347)	0.170
170	14.17	0.90	0.511	0.339	(0.347)	0.172
171	14.25	0.90	0.511	0.337	(0.347)	0.173
172	14.33	0.87	0.492	(0.336)	0.335	0.157
173	14.42	0.87	0.492	0.334	(0.335)	0.158

174	14.50	0.87	0.492	0.332	(0.335)	0.160
175	14.58	0.87	0.492	0.331	(0.335)	0.161
176	14.67	0.87	0.492	0.329	(0.335)	0.163
177	14.75	0.87	0.492	0.327	(0.335)	0.165
178	14.83	0.83	0.473	(0.326)	0.322	0.151
179	14.92	0.83	0.473	(0.324)	0.322	0.151
180	15.00	0.83	0.473	(0.322)	0.322	0.151
181	15.08	0.80	0.454	(0.321)	0.309	0.145
182	15.17	0.80	0.454	(0.319)	0.309	0.145
183	15.25	0.80	0.454	(0.317)	0.309	0.145
184	15.33	0.77	0.435	(0.316)	0.296	0.139
185	15.42	0.77	0.435	(0.314)	0.296	0.139
186	15.50	0.77	0.435	(0.312)	0.296	0.139
187	15.58	0.63	0.359	(0.311)	0.244	0.115
188	15.67	0.63	0.359	(0.309)	0.244	0.115
189	15.75	0.63	0.359	(0.308)	0.244	0.115
190	15.83	0.63	0.359	(0.306)	0.244	0.115
191	15.92	0.63	0.359	(0.305)	0.244	0.115
192	16.00	0.63	0.359	(0.303)	0.244	0.115
193	16.08	0.13	0.076	(0.301)	0.051	0.024
194	16.17	0.13	0.076	(0.300)	0.051	0.024
195	16.25	0.13	0.076	(0.298)	0.051	0.024
196	16.33	0.13	0.076	(0.297)	0.051	0.024
197	16.42	0.13	0.076	(0.295)	0.051	0.024
198	16.50	0.13	0.076	(0.294)	0.051	0.024
199	16.58	0.10	0.057	(0.292)	0.039	0.018
200	16.67	0.10	0.057	(0.291)	0.039	0.018
201	16.75	0.10	0.057	(0.289)	0.039	0.018
202	16.83	0.10	0.057	(0.288)	0.039	0.018
203	16.92	0.10	0.057	(0.286)	0.039	0.018
204	17.00	0.10	0.057	(0.285)	0.039	0.018
205	17.08	0.17	0.095	(0.284)	0.064	0.030
206	17.17	0.17	0.095	(0.282)	0.064	0.030
207	17.25	0.17	0.095	(0.281)	0.064	0.030
208	17.33	0.17	0.095	(0.279)	0.064	0.030
209	17.42	0.17	0.095	(0.278)	0.064	0.030
210	17.50	0.17	0.095	(0.277)	0.064	0.030
211	17.58	0.17	0.095	(0.275)	0.064	0.030
212	17.67	0.17	0.095	(0.274)	0.064	0.030
213	17.75	0.17	0.095	(0.272)	0.064	0.030
214	17.83	0.13	0.076	(0.271)	0.051	0.024
215	17.92	0.13	0.076	(0.270)	0.051	0.024
216	18.00	0.13	0.076	(0.268)	0.051	0.024
217	18.08	0.13	0.076	(0.267)	0.051	0.024
218	18.17	0.13	0.076	(0.266)	0.051	0.024
219	18.25	0.13	0.076	(0.264)	0.051	0.024
220	18.33	0.13	0.076	(0.263)	0.051	0.024
221	18.42	0.13	0.076	(0.262)	0.051	0.024
222	18.50	0.13	0.076	(0.261)	0.051	0.024
223	18.58	0.10	0.057	(0.259)	0.039	0.018
224	18.67	0.10	0.057	(0.258)	0.039	0.018
225	18.75	0.10	0.057	(0.257)	0.039	0.018
226	18.83	0.07	0.038	(0.256)	0.026	0.012
227	18.92	0.07	0.038	(0.254)	0.026	0.012

228	19.00	0.07	0.038	(0.253)	0.026	0.012
229	19.08	0.10	0.057	(0.252)	0.039	0.018
230	19.17	0.10	0.057	(0.251)	0.039	0.018
231	19.25	0.10	0.057	(0.250)	0.039	0.018
232	19.33	0.13	0.076	(0.248)	0.051	0.024
233	19.42	0.13	0.076	(0.247)	0.051	0.024
234	19.50	0.13	0.076	(0.246)	0.051	0.024
235	19.58	0.10	0.057	(0.245)	0.039	0.018
236	19.67	0.10	0.057	(0.244)	0.039	0.018
237	19.75	0.10	0.057	(0.243)	0.039	0.018
238	19.83	0.07	0.038	(0.242)	0.026	0.012
239	19.92	0.07	0.038	(0.241)	0.026	0.012
240	20.00	0.07	0.038	(0.240)	0.026	0.012
241	20.08	0.10	0.057	(0.239)	0.039	0.018
242	20.17	0.10	0.057	(0.237)	0.039	0.018
243	20.25	0.10	0.057	(0.236)	0.039	0.018
244	20.33	0.10	0.057	(0.235)	0.039	0.018
245	20.42	0.10	0.057	(0.234)	0.039	0.018
246	20.50	0.10	0.057	(0.233)	0.039	0.018
247	20.58	0.10	0.057	(0.232)	0.039	0.018
248	20.67	0.10	0.057	(0.231)	0.039	0.018
249	20.75	0.10	0.057	(0.231)	0.039	0.018
250	20.83	0.07	0.038	(0.230)	0.026	0.012
251	20.92	0.07	0.038	(0.229)	0.026	0.012
252	21.00	0.07	0.038	(0.228)	0.026	0.012
253	21.08	0.10	0.057	(0.227)	0.039	0.018
254	21.17	0.10	0.057	(0.226)	0.039	0.018
255	21.25	0.10	0.057	(0.225)	0.039	0.018
256	21.33	0.07	0.038	(0.224)	0.026	0.012
257	21.42	0.07	0.038	(0.223)	0.026	0.012
258	21.50	0.07	0.038	(0.223)	0.026	0.012
259	21.58	0.10	0.057	(0.222)	0.039	0.018
260	21.67	0.10	0.057	(0.221)	0.039	0.018
261	21.75	0.10	0.057	(0.220)	0.039	0.018
262	21.83	0.07	0.038	(0.219)	0.026	0.012
263	21.92	0.07	0.038	(0.219)	0.026	0.012
264	22.00	0.07	0.038	(0.218)	0.026	0.012
265	22.08	0.10	0.057	(0.217)	0.039	0.018
266	22.17	0.10	0.057	(0.216)	0.039	0.018
267	22.25	0.10	0.057	(0.216)	0.039	0.018
268	22.33	0.07	0.038	(0.215)	0.026	0.012
269	22.42	0.07	0.038	(0.214)	0.026	0.012
270	22.50	0.07	0.038	(0.214)	0.026	0.012
271	22.58	0.07	0.038	(0.213)	0.026	0.012
272	22.67	0.07	0.038	(0.213)	0.026	0.012
273	22.75	0.07	0.038	(0.212)	0.026	0.012
274	22.83	0.07	0.038	(0.211)	0.026	0.012
275	22.92	0.07	0.038	(0.211)	0.026	0.012
276	23.00	0.07	0.038	(0.210)	0.026	0.012
277	23.08	0.07	0.038	(0.210)	0.026	0.012
278	23.17	0.07	0.038	(0.209)	0.026	0.012
279	23.25	0.07	0.038	(0.209)	0.026	0.012
280	23.33	0.07	0.038	(0.209)	0.026	0.012
281	23.42	0.07	0.038	(0.208)	0.026	0.012

282	23.50	0.07	0.038	(0.208)	0.026	0.012
283	23.58	0.07	0.038	(0.207)	0.026	0.012
284	23.67	0.07	0.038	(0.207)	0.026	0.012
285	23.75	0.07	0.038	(0.207)	0.026	0.012
286	23.83	0.07	0.038	(0.207)	0.026	0.012
287	23.92	0.07	0.038	(0.206)	0.026	0.012
288	24.00	0.07	0.038	(0.206)	0.026	0.012

(Loss Rate Not Used)

Sum = 100.0 Sum = 18.7

Flood volume = Effective rainfall 1.56(In)
times area 4.2(Ac.)/[(In)/(Ft.)] = 0.5(Ac.Ft)
Total soil loss = 3.17(In)
Total soil loss = 1.115(Ac.Ft)
Total rainfall = 4.73(In)
Flood volume = 23877.0 Cubic Feet
Total soil loss = 48579.4 Cubic Feet

Peak flow rate of this hydrograph = 1.230(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.03	Q	|	|	|	|
0+10	0.0005	0.05	Q	|	|	|	|
0+15	0.0009	0.05	Q	|	|	|	|
0+20	0.0014	0.07	Q	|	|	|	|
0+25	0.0019	0.08	Q	|	|	|	|
0+30	0.0024	0.08	Q	|	|	|	|
0+35	0.0029	0.08	Q	|	|	|	|
0+40	0.0035	0.08	Q	|	|	|	|
0+45	0.0040	0.08	Q	|	|	|	|
0+50	0.0046	0.09	Q	|	|	|	|
0+55	0.0053	0.10	Q	|	|	|	|
1+ 0	0.0061	0.10	Q	|	|	|	|
1+ 5	0.0067	0.09	Q	|	|	|	|
1+10	0.0072	0.08	Q	|	|	|	|
1+15	0.0077	0.08	Q	|	|	|	|
1+20	0.0083	0.08	Q	|	|	|	|
1+25	0.0088	0.08	Q	|	|	|	|
1+30	0.0093	0.08	Q	|	|	|	|
1+35	0.0099	0.08	Q	|	|	|	|
1+40	0.0104	0.08	Q	|	|	|	|
1+45	0.0109	0.08	Q	|	|	|	|
1+50	0.0116	0.09	Q	|	|	|	|
1+55	0.0123	0.10	Q	|	|	|	|
2+ 0	0.0130	0.10	Q	|	|	|	|
2+ 5	0.0137	0.10	Q	|	|	|	|
2+10	0.0144	0.10	QV	|	|	|	|

2+15	0.0151	0.10	QV	|	|	|	|
2+20	0.0158	0.10	QV	|	|	|	|
2+25	0.0165	0.10	QV	|	|	|	|
2+30	0.0172	0.10	QV	|	|	|	|
2+35	0.0181	0.12	QV	|	|	|	|
2+40	0.0189	0.13	QV	|	|	|	|
2+45	0.0198	0.13	QV	|	|	|	|
2+50	0.0207	0.13	QV	|	|	|	|
2+55	0.0216	0.13	QV	|	|	|	|
3+ 0	0.0225	0.13	QV	|	|	|	|
3+ 5	0.0234	0.13	QV	|	|	|	|
3+10	0.0243	0.13	QV	|	|	|	|
3+15	0.0251	0.13	QV	|	|	|	|
3+20	0.0260	0.13	QV	|	|	|	|
3+25	0.0269	0.13	QV	|	|	|	|
3+30	0.0278	0.13	Q V	|	|	|	|
3+35	0.0287	0.13	Q V	|	|	|	|
3+40	0.0296	0.13	Q V	|	|	|	|
3+45	0.0305	0.13	Q V	|	|	|	|
3+50	0.0315	0.14	Q V	|	|	|	|
3+55	0.0325	0.15	Q V	|	|	|	|
4+ 0	0.0336	0.15	Q V	|	|	|	|
4+ 5	0.0346	0.15	Q V	|	|	|	|
4+10	0.0357	0.15	Q V	|	|	|	|
4+15	0.0368	0.15	Q V	|	|	|	|
4+20	0.0379	0.17	Q V	|	|	|	|
4+25	0.0392	0.18	Q V	|	|	|	|
4+30	0.0404	0.18	Q V	|	|	|	|
4+35	0.0417	0.18	Q V	|	|	|	|
4+40	0.0429	0.18	Q V	|	|	|	|
4+45	0.0441	0.18	Q V	|	|	|	|
4+50	0.0455	0.20	Q V	|	|	|	|
4+55	0.0469	0.20	Q V	|	|	|	|
5+ 0	0.0483	0.21	Q V	|	|	|	|
5+ 5	0.0495	0.18	Q V	|	|	|	|
5+10	0.0506	0.16	Q V	|	|	|	|
5+15	0.0517	0.15	Q V	|	|	|	|
5+20	0.0528	0.17	Q V	|	|	|	|
5+25	0.0541	0.18	Q V	|	|	|	|
5+30	0.0553	0.18	Q V	|	|	|	|
5+35	0.0567	0.20	Q V	|	|	|	|
5+40	0.0581	0.20	Q V	|	|	|	|
5+45	0.0595	0.21	Q V	|	|	|	|
5+50	0.0609	0.21	Q V	|	|	|	|
5+55	0.0623	0.21	Q V	|	|	|	|
6+ 0	0.0637	0.21	Q V	|	|	|	|
6+ 5	0.0653	0.22	Q V	|	|	|	|
6+10	0.0669	0.23	Q V	|	|	|	|
6+15	0.0685	0.23	Q V	|	|	|	|
6+20	0.0701	0.23	Q V	|	|	|	|
6+25	0.0717	0.23	Q V	|	|	|	|
6+30	0.0732	0.23	Q V	|	|	|	|
6+35	0.0749	0.25	Q V	|	|	|	|
6+40	0.0767	0.26	|Q V	|	|	|	|

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 6+45       0.0785      0.26  |Q   V    |          |          |          |
 6+50       0.0803      0.26  |Q   V    |          |          |          |
 6+55       0.0820      0.26  |Q   V    |          |          |          |
 7+ 0       0.0838      0.26  |Q    V   |          |          |          |
 7+ 5       0.0856      0.26  |Q    V   |          |          |          |
 7+10       0.0874      0.26  |Q    V   |          |          |          |
 7+15       0.0891      0.26  |Q    V   |          |          |          |
 7+20       0.0910      0.27  |Q    V   |          |          |          |
 7+25       0.0930      0.28  |Q    V   |          |          |          |
 7+30       0.0949      0.28  |Q    V   |          |          |          |
 7+35       0.0970      0.30  |Q     V  |          |          |          |
 7+40       0.0991      0.31  |Q     V  |          |          |          |
 7+45       0.1012      0.31  |Q     V  |          |          |          |
 7+50       0.1034      0.32  |Q     V  |          |          |          |
 7+55       0.1057      0.33  |Q     V  |          |          |          |
 8+ 0       0.1081      0.33  |Q     V  |          |          |          |
 8+ 5       0.1106      0.36  |Q      V |          |          |          |
 8+10       0.1132      0.38  |Q      V |          |          |          |
 8+15       0.1159      0.39  |Q      V |          |          |          |
 8+20       0.1185      0.39  |Q      V |          |          |          |
 8+25       0.1212      0.39  |Q      V |          |          |          |
 8+30       0.1239      0.39  |Q       V|          |          |          |
 8+35       0.1266      0.40  |Q       V|          |          |          |
 8+40       0.1295      0.41  |Q       V|          |          |          |
 8+45       0.1323      0.41  |Q       V|          |          |          |
 8+50       0.1352      0.43  |Q       V|          |          |          |
 8+55       0.1382      0.44  |Q        V          |          |          |
 9+ 0       0.1413      0.44  |Q        V          |          |          |
 9+ 5       0.1445      0.47  |Q        V          |          |          |
 9+10       0.1478      0.49  |Q        V          |          |          |
 9+15       0.1512      0.49  |Q        |V         |          |          |
 9+20       0.1547      0.50  | Q       |V         |          |          |
 9+25       0.1582      0.51  | Q       |V         |          |          |
 9+30       0.1618      0.52  | Q       |V         |          |          |
 9+35       0.1654      0.53  | Q       | V        |          |          |
 9+40       0.1691      0.54  | Q       | V        |          |          |
 9+45       0.1729      0.54  | Q       | V        |          |          |
 9+50       0.1767      0.56  | Q       | V        |          |          |
 9+55       0.1806      0.57  | Q       |  V       |          |          |
10+ 0       0.1845      0.57  | Q       |  V       |          |          |
10+ 5       0.1877      0.46  |Q        |  V       |          |          |
10+10       0.1904      0.39  |Q        |  V       |          |          |
10+15       0.1931      0.39  |Q        |   V      |          |          |
10+20       0.1957      0.39  |Q        |   V      |          |          |
10+25       0.1984      0.39  |Q        |   V      |          |          |
10+30       0.2010      0.39  |Q        |   V      |          |          |
10+35       0.2042      0.46  |Q        |   V      |          |          |
10+40       0.2077      0.51  | Q       |    V     |          |          |
10+45       0.2113      0.52  | Q       |    V     |          |          |
10+50       0.2148      0.52  | Q       |    V     |          |          |
10+55       0.2184      0.52  | Q       |    V     |          |          |
11+ 0       0.2219      0.52  | Q       |     V    |          |          |
11+ 5       0.2254      0.50  | Q       |     V    |          |          |
11+10       0.2287      0.49  |Q        |     V    |          |          |
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11+15       0.2321      0.49  |Q        |     V   |         |         |
11+20       0.2355      0.49  |Q        |      V  |         |         |
11+25       0.2389      0.49  |Q        |      V  |         |         |
11+30       0.2422      0.49  |Q        |      V  |         |         |
11+35       0.2454      0.46  |Q        |      V  |         |         |
11+40       0.2484      0.44  |Q        |       V |         |         |
11+45       0.2514      0.44  |Q        |       V |         |         |
11+50       0.2546      0.45  |Q        |       V |         |         |
11+55       0.2577      0.46  |Q        |       V |         |         |
12+ 0       0.2609      0.46  |Q        |        V|         |         |
12+ 5       0.2649      0.57  | Q       |        V|         |         |
12+10       0.2692      0.64  | Q       |        V|         |         |
12+15       0.2737      0.64  | Q       |        V|         |         |
12+20       0.2782      0.66  | Q       |         V         |         |
12+25       0.2828      0.67  | Q       |         V         |         |
12+30       0.2874      0.67  | Q       |         V         |         |
12+35       0.2922      0.70  | Q       |          |V       |         |
12+40       0.2972      0.72  | Q       |          |V       |         |
12+45       0.3022      0.72  | Q       |          | V      |         |
12+50       0.3073      0.75  | Q       |          | V      |         |
12+55       0.3126      0.77  |  Q      |          | V      |         |
13+ 0       0.3180      0.78  |  Q      |          |  V     |         |
13+ 5       0.3251      1.02  |   Q     |          |  V     |         |
13+10       0.3332      1.18  |   Q     |          |   V    |         |
13+15       0.3415      1.21  |   Q     |          |   V    |         |
13+20       0.3499      1.21  |   Q     |          |    V   |         |
13+25       0.3583      1.22  |   Q     |          |     V  |         |
13+30       0.3668      1.23  |   Q     |          |     V  |         |
13+35       0.3727      0.86  |  Q      |          |      V |         |
13+40       0.3770      0.62  | Q       |          |      V |         |
13+45       0.3810      0.59  | Q       |          |      V |         |
13+50       0.3851      0.59  | Q       |          |       V|         |
13+55       0.3892      0.59  | Q       |          |       V|         |
14+ 0       0.3933      0.59  | Q       |          |       V|         |
14+ 5       0.3979      0.67  | Q       |          |        V|        |
14+10       0.4028      0.72  | Q       |          |        V|        |
14+15       0.4079      0.73  | Q       |          |        V|        |
14+20       0.4127      0.70  | Q       |          |         V        |
14+25       0.4174      0.67  | Q       |          |         V        |
14+30       0.4220      0.68  | Q       |          |         V        |
14+35       0.4267      0.68  | Q       |          |          |V      |
14+40       0.4315      0.69  | Q       |          |          |V      |
14+45       0.4363      0.70  | Q       |          |          |V      |
14+50       0.4409      0.67  | Q       |          |          | V     |
14+55       0.4453      0.65  | Q       |          |          | V     |
15+ 0       0.4497      0.64  | Q       |          |          | V     |
15+ 5       0.4541      0.63  | Q       |          |          |  V    |
15+10       0.4583      0.62  | Q       |          |          |  V    |
15+15       0.4626      0.62  | Q       |          |          |  V    |
15+20       0.4668      0.60  | Q       |          |          |   V   |
15+25       0.4708      0.59  | Q       |          |          |   V   |
15+30       0.4749      0.59  | Q       |          |          |   V   |
15+35       0.4786      0.53  | Q       |          |          |   V   |
15+40       0.4820      0.49  |Q        |          |          |    V  |
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15+45	0.4854	0.49	|Q	|	|	|	V |
15+50	0.4887	0.49	|Q	|	|	|	V |
15+55	0.4921	0.49	|Q	|	|	|	V |
16+ 0	0.4955	0.49	|Q	|	|	|	V |
16+ 5	0.4973	0.26	|Q	|	|	|	V |
16+10	0.4981	0.12	Q	|	|	|	V |
16+15	0.4988	0.10	Q	|	|	|	V |
16+20	0.4996	0.10	Q	|	|	|	V |
16+25	0.5003	0.10	Q	|	|	|	V |
16+30	0.5010	0.10	Q	|	|	|	V |
16+35	0.5016	0.09	Q	|	|	|	V |
16+40	0.5021	0.08	Q	|	|	|	V |
16+45	0.5027	0.08	Q	|	|	|	V |
16+50	0.5032	0.08	Q	|	|	|	V |
16+55	0.5037	0.08	Q	|	|	|	V |
17+ 0	0.5042	0.08	Q	|	|	|	V |
17+ 5	0.5050	0.11	Q	|	|	|	V |
17+10	0.5059	0.13	Q	|	|	|	V |
17+15	0.5067	0.13	Q	|	|	|	V |
17+20	0.5076	0.13	Q	|	|	|	V |
17+25	0.5085	0.13	Q	|	|	|	V |
17+30	0.5094	0.13	Q	|	|	|	V |
17+35	0.5103	0.13	Q	|	|	|	V |
17+40	0.5112	0.13	Q	|	|	|	V |
17+45	0.5121	0.13	Q	|	|	|	V |
17+50	0.5129	0.11	Q	|	|	|	V |
17+55	0.5136	0.10	Q	|	|	|	V |
18+ 0	0.5143	0.10	Q	|	|	|	V |
18+ 5	0.5150	0.10	Q	|	|	|	V |
18+10	0.5157	0.10	Q	|	|	|	V |
18+15	0.5164	0.10	Q	|	|	|	V |
18+20	0.5171	0.10	Q	|	|	|	V |
18+25	0.5178	0.10	Q	|	|	|	V |
18+30	0.5185	0.10	Q	|	|	|	V |
18+35	0.5191	0.09	Q	|	|	|	V |
18+40	0.5197	0.08	Q	|	|	|	V |
18+45	0.5202	0.08	Q	|	|	|	V |
18+50	0.5206	0.06	Q	|	|	|	V |
18+55	0.5210	0.05	Q	|	|	|	V |
19+ 0	0.5214	0.05	Q	|	|	|	V |
19+ 5	0.5218	0.07	Q	|	|	|	V |
19+10	0.5223	0.08	Q	|	|	|	V |
19+15	0.5229	0.08	Q	|	|	|	V |
19+20	0.5235	0.09	Q	|	|	|	V |
19+25	0.5242	0.10	Q	|	|	|	V |
19+30	0.5249	0.10	Q	|	|	|	V |
19+35	0.5255	0.09	Q	|	|	|	V |
19+40	0.5261	0.08	Q	|	|	|	V |
19+45	0.5266	0.08	Q	|	|	|	V |
19+50	0.5270	0.06	Q	|	|	|	V |
19+55	0.5274	0.05	Q	|	|	|	V |
20+ 0	0.5278	0.05	Q	|	|	|	V |
20+ 5	0.5282	0.07	Q	|	|	|	V |
20+10	0.5287	0.08	Q	|	|	|	V |

20+15	0.5293	0.08	Q	|	|	|	V |
20+20	0.5298	0.08	Q	|	|	|	V |
20+25	0.5303	0.08	Q	|	|	|	V |
20+30	0.5309	0.08	Q	|	|	|	V |
20+35	0.5314	0.08	Q	|	|	|	V |
20+40	0.5319	0.08	Q	|	|	|	V |
20+45	0.5325	0.08	Q	|	|	|	V |
20+50	0.5329	0.06	Q	|	|	|	V |
20+55	0.5333	0.05	Q	|	|	|	V |
21+ 0	0.5336	0.05	Q	|	|	|	V |
21+ 5	0.5341	0.07	Q	|	|	|	V |
21+10	0.5346	0.08	Q	|	|	|	V|
21+15	0.5351	0.08	Q	|	|	|	V|
21+20	0.5355	0.06	Q	|	|	|	V|
21+25	0.5359	0.05	Q	|	|	|	V|
21+30	0.5363	0.05	Q	|	|	|	V|
21+35	0.5367	0.07	Q	|	|	|	V|
21+40	0.5372	0.08	Q	|	|	|	V|
21+45	0.5378	0.08	Q	|	|	|	V|
21+50	0.5382	0.06	Q	|	|	|	V|
21+55	0.5386	0.05	Q	|	|	|	V|
22+ 0	0.5389	0.05	Q	|	|	|	V|
22+ 5	0.5394	0.07	Q	|	|	|	V|
22+10	0.5399	0.08	Q	|	|	|	V|
22+15	0.5404	0.08	Q	|	|	|	V|
22+20	0.5409	0.06	Q	|	|	|	V|
22+25	0.5412	0.05	Q	|	|	|	V|
22+30	0.5416	0.05	Q	|	|	|	V|
22+35	0.5419	0.05	Q	|	|	|	V|
22+40	0.5423	0.05	Q	|	|	|	V|
22+45	0.5427	0.05	Q	|	|	|	V|
22+50	0.5430	0.05	Q	|	|	|	V|
22+55	0.5434	0.05	Q	|	|	|	V|
23+ 0	0.5437	0.05	Q	|	|	|	V|
23+ 5	0.5441	0.05	Q	|	|	|	V|
23+10	0.5444	0.05	Q	|	|	|	V|
23+15	0.5448	0.05	Q	|	|	|	V|
23+20	0.5451	0.05	Q	|	|	|	V|
23+25	0.5455	0.05	Q	|	|	|	V|
23+30	0.5458	0.05	Q	|	|	|	V|
23+35	0.5462	0.05	Q	|	|	|	V|
23+40	0.5466	0.05	Q	|	|	|	V|
23+45	0.5469	0.05	Q	|	|	|	V|
23+50	0.5473	0.05	Q	|	|	|	V|
23+55	0.5476	0.05	Q	|	|	|	V|
24+ 0	0.5480	0.05	Q	|	|	|	V|
24+ 5	0.5481	0.02	Q	|	|	|	V|
24+10	0.5481	0.00	Q	|	|	|	V

```
      U n i t   H y d r o g r a p h   A n a l y s i s
      Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2008, Version 8.1
           Study date  05/02/23 File: MIRAGE824100.out
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------
Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

Program License Serial Number 6260

------------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format

------------------------------------------------------------------------
UNIT HYDROGRAPH
100-YEAR POST DEVELOPMENT
TTM 38636
RANCHO MIRAGE
------------------------------------------------------------------------
Drainage Area =       4.22(Ac.)  =      0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 4.22(Ac.) = 0.007 Sq. Mi.
Length along longest watercourse =     682.00(Ft.)
Length along longest watercourse measured to centroid =     250.00(Ft.)
Length along longest watercourse =      0.129 Mi.
Length along longest watercourse measured to centroid =      0.047 Mi.
Difference in elevation =       4.80(Ft.)
Slope along watercourse =     37.1613 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.026 Hr.
Lag time =     1.57 Min.
25% of lag time =     0.39 Min.
40% of lag time =     0.63 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.22             1.21                  5.11

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.22             4.73                 19.96

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.210(In)
Area Averaged 100-Year Rainfall =    4.730(In)
```

Point rain (area averaged) = 4.730(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.730(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
4.220	32.00	0.280

Total Area Entered = 4.22(Ac.)

RI AMC2	RI AMC-3	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
32.0	52.0	0.552	0.280	0.413	1.000	0.413
					Sum (F) =	0.413

Area averaged mean soil loss (F) (In/Hr) = 0.413
Minimum soil loss rate ((In/Hr)) = 0.206
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.680

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	319.139	58.131	2.472
2	0.167	638.278	37.534	1.596
3	0.250	957.417	4.335	0.184
			Sum = 100.000 Sum=	4.253

The following loss rate calculations reflect use of the minimum calculated loss
rate subtracted from the Storm Rain to produce the maximum Effective Rain value

Unit Time (Hr.)		Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.038	(0.731)	0.026	0.012
2	0.17	0.07	0.038	(0.729)	0.026	0.012
3	0.25	0.07	0.038	(0.726)	0.026	0.012
4	0.33	0.10	0.057	(0.723)	0.039	0.018
5	0.42	0.10	0.057	(0.720)	0.039	0.018
6	0.50	0.10	0.057	(0.717)	0.039	0.018
7	0.58	0.10	0.057	(0.715)	0.039	0.018
8	0.67	0.10	0.057	(0.712)	0.039	0.018
9	0.75	0.10	0.057	(0.709)	0.039	0.018
10	0.83	0.13	0.076	(0.706)	0.051	0.024
11	0.92	0.13	0.076	(0.703)	0.051	0.024

12	1.00	0.13	0.076	(0.701)	0.051	0.024
13	1.08	0.10	0.057	(0.698)	0.039	0.018
14	1.17	0.10	0.057	(0.695)	0.039	0.018
15	1.25	0.10	0.057	(0.692)	0.039	0.018
16	1.33	0.10	0.057	(0.690)	0.039	0.018
17	1.42	0.10	0.057	(0.687)	0.039	0.018
18	1.50	0.10	0.057	(0.684)	0.039	0.018
19	1.58	0.10	0.057	(0.681)	0.039	0.018
20	1.67	0.10	0.057	(0.679)	0.039	0.018
21	1.75	0.10	0.057	(0.676)	0.039	0.018
22	1.83	0.13	0.076	(0.673)	0.051	0.024
23	1.92	0.13	0.076	(0.670)	0.051	0.024
24	2.00	0.13	0.076	(0.668)	0.051	0.024
25	2.08	0.13	0.076	(0.665)	0.051	0.024
26	2.17	0.13	0.076	(0.662)	0.051	0.024
27	2.25	0.13	0.076	(0.660)	0.051	0.024
28	2.33	0.13	0.076	(0.657)	0.051	0.024
29	2.42	0.13	0.076	(0.654)	0.051	0.024
30	2.50	0.13	0.076	(0.652)	0.051	0.024
31	2.58	0.17	0.095	(0.649)	0.064	0.030
32	2.67	0.17	0.095	(0.646)	0.064	0.030
33	2.75	0.17	0.095	(0.644)	0.064	0.030
34	2.83	0.17	0.095	(0.641)	0.064	0.030
35	2.92	0.17	0.095	(0.638)	0.064	0.030
36	3.00	0.17	0.095	(0.636)	0.064	0.030
37	3.08	0.17	0.095	(0.633)	0.064	0.030
38	3.17	0.17	0.095	(0.630)	0.064	0.030
39	3.25	0.17	0.095	(0.628)	0.064	0.030
40	3.33	0.17	0.095	(0.625)	0.064	0.030
41	3.42	0.17	0.095	(0.623)	0.064	0.030
42	3.50	0.17	0.095	(0.620)	0.064	0.030
43	3.58	0.17	0.095	(0.617)	0.064	0.030
44	3.67	0.17	0.095	(0.615)	0.064	0.030
45	3.75	0.17	0.095	(0.612)	0.064	0.030
46	3.83	0.20	0.114	(0.610)	0.077	0.036
47	3.92	0.20	0.114	(0.607)	0.077	0.036
48	4.00	0.20	0.114	(0.604)	0.077	0.036
49	4.08	0.20	0.114	(0.602)	0.077	0.036
50	4.17	0.20	0.114	(0.599)	0.077	0.036
51	4.25	0.20	0.114	(0.597)	0.077	0.036
52	4.33	0.23	0.132	(0.594)	0.090	0.042
53	4.42	0.23	0.132	(0.592)	0.090	0.042
54	4.50	0.23	0.132	(0.589)	0.090	0.042
55	4.58	0.23	0.132	(0.587)	0.090	0.042
56	4.67	0.23	0.132	(0.584)	0.090	0.042
57	4.75	0.23	0.132	(0.582)	0.090	0.042
58	4.83	0.27	0.151	(0.579)	0.103	0.048
59	4.92	0.27	0.151	(0.577)	0.103	0.048
60	5.00	0.27	0.151	(0.574)	0.103	0.048
61	5.08	0.20	0.114	(0.572)	0.077	0.036
62	5.17	0.20	0.114	(0.569)	0.077	0.036
63	5.25	0.20	0.114	(0.567)	0.077	0.036
64	5.33	0.23	0.132	(0.564)	0.090	0.042
65	5.42	0.23	0.132	(0.562)	0.090	0.042

66	5.50	0.23	0.132	(0.559)	0.090	0.042
67	5.58	0.27	0.151	(0.557)	0.103	0.048
68	5.67	0.27	0.151	(0.554)	0.103	0.048
69	5.75	0.27	0.151	(0.552)	0.103	0.048
70	5.83	0.27	0.151	(0.549)	0.103	0.048
71	5.92	0.27	0.151	(0.547)	0.103	0.048
72	6.00	0.27	0.151	(0.545)	0.103	0.048
73	6.08	0.30	0.170	(0.542)	0.116	0.054
74	6.17	0.30	0.170	(0.540)	0.116	0.054
75	6.25	0.30	0.170	(0.537)	0.116	0.054
76	6.33	0.30	0.170	(0.535)	0.116	0.054
77	6.42	0.30	0.170	(0.533)	0.116	0.054
78	6.50	0.30	0.170	(0.530)	0.116	0.054
79	6.58	0.33	0.189	(0.528)	0.129	0.061
80	6.67	0.33	0.189	(0.525)	0.129	0.061
81	6.75	0.33	0.189	(0.523)	0.129	0.061
82	6.83	0.33	0.189	(0.521)	0.129	0.061
83	6.92	0.33	0.189	(0.518)	0.129	0.061
84	7.00	0.33	0.189	(0.516)	0.129	0.061
85	7.08	0.33	0.189	(0.514)	0.129	0.061
86	7.17	0.33	0.189	(0.511)	0.129	0.061
87	7.25	0.33	0.189	(0.509)	0.129	0.061
88	7.33	0.37	0.208	(0.507)	0.142	0.067
89	7.42	0.37	0.208	(0.504)	0.142	0.067
90	7.50	0.37	0.208	(0.502)	0.142	0.067
91	7.58	0.40	0.227	(0.500)	0.154	0.073
92	7.67	0.40	0.227	(0.497)	0.154	0.073
93	7.75	0.40	0.227	(0.495)	0.154	0.073
94	7.83	0.43	0.246	(0.493)	0.167	0.079
95	7.92	0.43	0.246	(0.491)	0.167	0.079
96	8.00	0.43	0.246	(0.488)	0.167	0.079
97	8.08	0.50	0.284	(0.486)	0.193	0.091
98	8.17	0.50	0.284	(0.484)	0.193	0.091
99	8.25	0.50	0.284	(0.482)	0.193	0.091
100	8.33	0.50	0.284	(0.479)	0.193	0.091
101	8.42	0.50	0.284	(0.477)	0.193	0.091
102	8.50	0.50	0.284	(0.475)	0.193	0.091
103	8.58	0.53	0.303	(0.473)	0.206	0.097
104	8.67	0.53	0.303	(0.470)	0.206	0.097
105	8.75	0.53	0.303	(0.468)	0.206	0.097
106	8.83	0.57	0.322	(0.466)	0.219	0.103
107	8.92	0.57	0.322	(0.464)	0.219	0.103
108	9.00	0.57	0.322	(0.462)	0.219	0.103
109	9.08	0.63	0.359	(0.459)	0.244	0.115
110	9.17	0.63	0.359	(0.457)	0.244	0.115
111	9.25	0.63	0.359	(0.455)	0.244	0.115
112	9.33	0.67	0.378	(0.453)	0.257	0.121
113	9.42	0.67	0.378	(0.451)	0.257	0.121
114	9.50	0.67	0.378	(0.448)	0.257	0.121
115	9.58	0.70	0.397	(0.446)	0.270	0.127
116	9.67	0.70	0.397	(0.444)	0.270	0.127
117	9.75	0.70	0.397	(0.442)	0.270	0.127
118	9.83	0.73	0.416	(0.440)	0.283	0.133
119	9.92	0.73	0.416	(0.438)	0.283	0.133

120	10.00	0.73	0.416	(0.436)	0.283	0.133
121	10.08	0.50	0.284	(0.434)	0.193	0.091
122	10.17	0.50	0.284	(0.431)	0.193	0.091
123	10.25	0.50	0.284	(0.429)	0.193	0.091
124	10.33	0.50	0.284	(0.427)	0.193	0.091
125	10.42	0.50	0.284	(0.425)	0.193	0.091
126	10.50	0.50	0.284	(0.423)	0.193	0.091
127	10.58	0.67	0.378	(0.421)	0.257	0.121
128	10.67	0.67	0.378	(0.419)	0.257	0.121
129	10.75	0.67	0.378	(0.417)	0.257	0.121
130	10.83	0.67	0.378	(0.415)	0.257	0.121
131	10.92	0.67	0.378	(0.413)	0.257	0.121
132	11.00	0.67	0.378	(0.411)	0.257	0.121
133	11.08	0.63	0.359	(0.409)	0.244	0.115
134	11.17	0.63	0.359	(0.407)	0.244	0.115
135	11.25	0.63	0.359	(0.405)	0.244	0.115
136	11.33	0.63	0.359	(0.403)	0.244	0.115
137	11.42	0.63	0.359	(0.401)	0.244	0.115
138	11.50	0.63	0.359	(0.399)	0.244	0.115
139	11.58	0.57	0.322	(0.397)	0.219	0.103
140	11.67	0.57	0.322	(0.395)	0.219	0.103
141	11.75	0.57	0.322	(0.393)	0.219	0.103
142	11.83	0.60	0.341	(0.391)	0.232	0.109
143	11.92	0.60	0.341	(0.389)	0.232	0.109
144	12.00	0.60	0.341	(0.387)	0.232	0.109
145	12.08	0.83	0.473	(0.385)	0.322	0.151
146	12.17	0.83	0.473	(0.383)	0.322	0.151
147	12.25	0.83	0.473	(0.381)	0.322	0.151
148	12.33	0.87	0.492	(0.379)	0.335	0.157
149	12.42	0.87	0.492	(0.377)	0.335	0.157
150	12.50	0.87	0.492	(0.376)	0.335	0.157
151	12.58	0.93	0.530	(0.374)	0.360	0.170
152	12.67	0.93	0.530	(0.372)	0.360	0.170
153	12.75	0.93	0.530	(0.370)	0.360	0.170
154	12.83	0.97	0.549	0.368	(0.373)	0.181
155	12.92	0.97	0.549	0.366	(0.373)	0.182
156	13.00	0.97	0.549	0.364	(0.373)	0.184
157	13.08	1.13	0.643	0.363	(0.437)	0.281
158	13.17	1.13	0.643	0.361	(0.437)	0.283
159	13.25	1.13	0.643	0.359	(0.437)	0.284
160	13.33	1.13	0.643	0.357	(0.437)	0.286
161	13.42	1.13	0.643	0.355	(0.437)	0.288
162	13.50	1.13	0.643	0.353	(0.437)	0.290
163	13.58	0.77	0.435	(0.352)	0.296	0.139
164	13.67	0.77	0.435	(0.350)	0.296	0.139
165	13.75	0.77	0.435	(0.348)	0.296	0.139
166	13.83	0.77	0.435	(0.346)	0.296	0.139
167	13.92	0.77	0.435	(0.344)	0.296	0.139
168	14.00	0.77	0.435	(0.343)	0.296	0.139
169	14.08	0.90	0.511	0.341	(0.347)	0.170
170	14.17	0.90	0.511	0.339	(0.347)	0.172
171	14.25	0.90	0.511	0.337	(0.347)	0.173
172	14.33	0.87	0.492	(0.336)	0.335	0.157
173	14.42	0.87	0.492	0.334	(0.335)	0.158

174	14.50	0.87	0.492	0.332	(0.335)	0.160
175	14.58	0.87	0.492	0.331	(0.335)	0.161
176	14.67	0.87	0.492	0.329	(0.335)	0.163
177	14.75	0.87	0.492	0.327	(0.335)	0.165
178	14.83	0.83	0.473	(0.326)	0.322	0.151
179	14.92	0.83	0.473	(0.324)	0.322	0.151
180	15.00	0.83	0.473	(0.322)	0.322	0.151
181	15.08	0.80	0.454	(0.321)	0.309	0.145
182	15.17	0.80	0.454	(0.319)	0.309	0.145
183	15.25	0.80	0.454	(0.317)	0.309	0.145
184	15.33	0.77	0.435	(0.316)	0.296	0.139
185	15.42	0.77	0.435	(0.314)	0.296	0.139
186	15.50	0.77	0.435	(0.312)	0.296	0.139
187	15.58	0.63	0.359	(0.311)	0.244	0.115
188	15.67	0.63	0.359	(0.309)	0.244	0.115
189	15.75	0.63	0.359	(0.308)	0.244	0.115
190	15.83	0.63	0.359	(0.306)	0.244	0.115
191	15.92	0.63	0.359	(0.305)	0.244	0.115
192	16.00	0.63	0.359	(0.303)	0.244	0.115
193	16.08	0.13	0.076	(0.301)	0.051	0.024
194	16.17	0.13	0.076	(0.300)	0.051	0.024
195	16.25	0.13	0.076	(0.298)	0.051	0.024
196	16.33	0.13	0.076	(0.297)	0.051	0.024
197	16.42	0.13	0.076	(0.295)	0.051	0.024
198	16.50	0.13	0.076	(0.294)	0.051	0.024
199	16.58	0.10	0.057	(0.292)	0.039	0.018
200	16.67	0.10	0.057	(0.291)	0.039	0.018
201	16.75	0.10	0.057	(0.289)	0.039	0.018
202	16.83	0.10	0.057	(0.288)	0.039	0.018
203	16.92	0.10	0.057	(0.286)	0.039	0.018
204	17.00	0.10	0.057	(0.285)	0.039	0.018
205	17.08	0.17	0.095	(0.284)	0.064	0.030
206	17.17	0.17	0.095	(0.282)	0.064	0.030
207	17.25	0.17	0.095	(0.281)	0.064	0.030
208	17.33	0.17	0.095	(0.279)	0.064	0.030
209	17.42	0.17	0.095	(0.278)	0.064	0.030
210	17.50	0.17	0.095	(0.277)	0.064	0.030
211	17.58	0.17	0.095	(0.275)	0.064	0.030
212	17.67	0.17	0.095	(0.274)	0.064	0.030
213	17.75	0.17	0.095	(0.272)	0.064	0.030
214	17.83	0.13	0.076	(0.271)	0.051	0.024
215	17.92	0.13	0.076	(0.270)	0.051	0.024
216	18.00	0.13	0.076	(0.268)	0.051	0.024
217	18.08	0.13	0.076	(0.267)	0.051	0.024
218	18.17	0.13	0.076	(0.266)	0.051	0.024
219	18.25	0.13	0.076	(0.264)	0.051	0.024
220	18.33	0.13	0.076	(0.263)	0.051	0.024
221	18.42	0.13	0.076	(0.262)	0.051	0.024
222	18.50	0.13	0.076	(0.261)	0.051	0.024
223	18.58	0.10	0.057	(0.259)	0.039	0.018
224	18.67	0.10	0.057	(0.258)	0.039	0.018
225	18.75	0.10	0.057	(0.257)	0.039	0.018
226	18.83	0.07	0.038	(0.256)	0.026	0.012
227	18.92	0.07	0.038	(0.254)	0.026	0.012

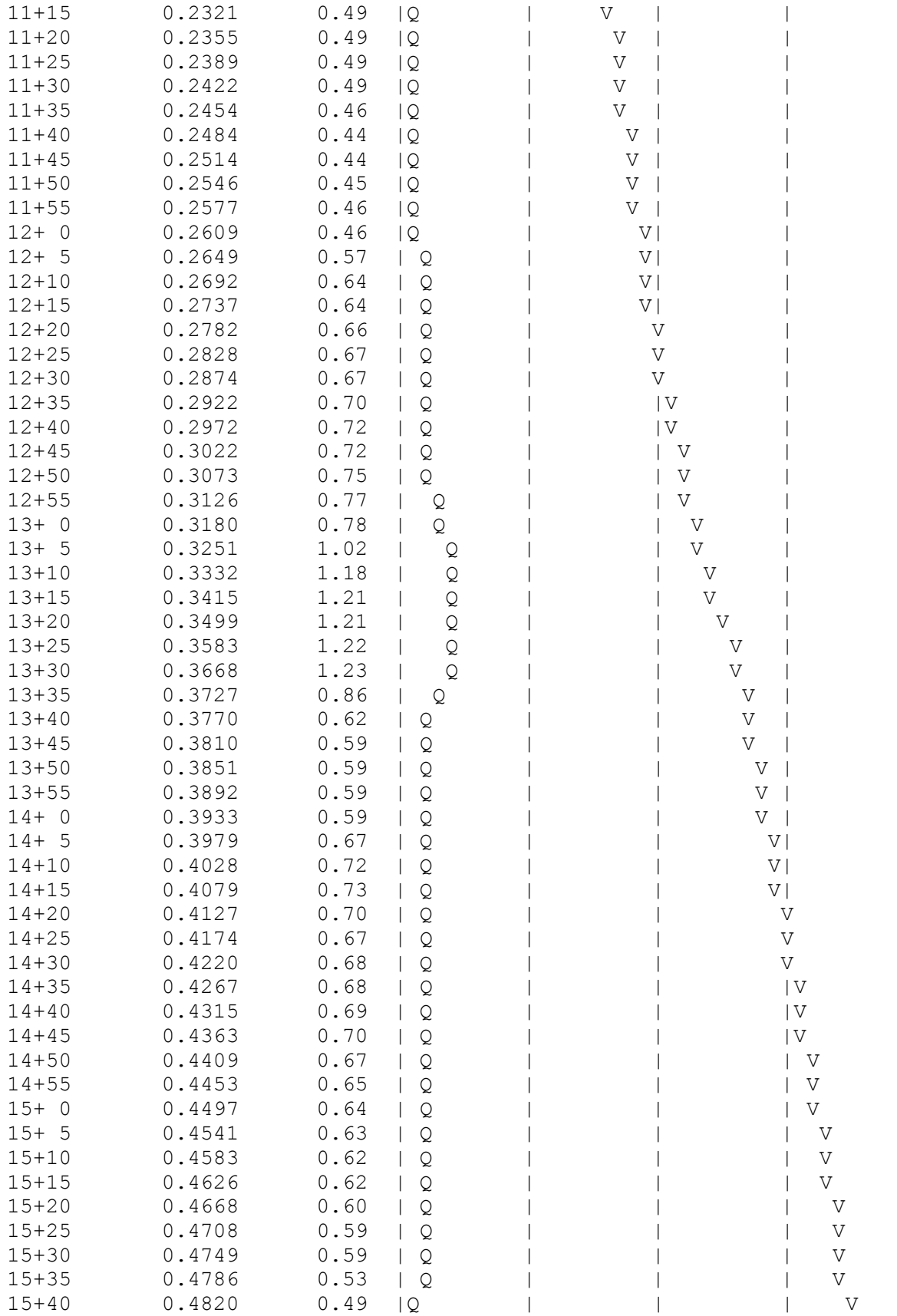
228	19.00	0.07	0.038	(0.253)	0.026	0.012
229	19.08	0.10	0.057	(0.252)	0.039	0.018
230	19.17	0.10	0.057	(0.251)	0.039	0.018
231	19.25	0.10	0.057	(0.250)	0.039	0.018
232	19.33	0.13	0.076	(0.248)	0.051	0.024
233	19.42	0.13	0.076	(0.247)	0.051	0.024
234	19.50	0.13	0.076	(0.246)	0.051	0.024
235	19.58	0.10	0.057	(0.245)	0.039	0.018
236	19.67	0.10	0.057	(0.244)	0.039	0.018
237	19.75	0.10	0.057	(0.243)	0.039	0.018
238	19.83	0.07	0.038	(0.242)	0.026	0.012
239	19.92	0.07	0.038	(0.241)	0.026	0.012
240	20.00	0.07	0.038	(0.240)	0.026	0.012
241	20.08	0.10	0.057	(0.239)	0.039	0.018
242	20.17	0.10	0.057	(0.237)	0.039	0.018
243	20.25	0.10	0.057	(0.236)	0.039	0.018
244	20.33	0.10	0.057	(0.235)	0.039	0.018
245	20.42	0.10	0.057	(0.234)	0.039	0.018
246	20.50	0.10	0.057	(0.233)	0.039	0.018
247	20.58	0.10	0.057	(0.232)	0.039	0.018
248	20.67	0.10	0.057	(0.231)	0.039	0.018
249	20.75	0.10	0.057	(0.231)	0.039	0.018
250	20.83	0.07	0.038	(0.230)	0.026	0.012
251	20.92	0.07	0.038	(0.229)	0.026	0.012
252	21.00	0.07	0.038	(0.228)	0.026	0.012
253	21.08	0.10	0.057	(0.227)	0.039	0.018
254	21.17	0.10	0.057	(0.226)	0.039	0.018
255	21.25	0.10	0.057	(0.225)	0.039	0.018
256	21.33	0.07	0.038	(0.224)	0.026	0.012
257	21.42	0.07	0.038	(0.223)	0.026	0.012
258	21.50	0.07	0.038	(0.223)	0.026	0.012
259	21.58	0.10	0.057	(0.222)	0.039	0.018
260	21.67	0.10	0.057	(0.221)	0.039	0.018
261	21.75	0.10	0.057	(0.220)	0.039	0.018
262	21.83	0.07	0.038	(0.219)	0.026	0.012
263	21.92	0.07	0.038	(0.219)	0.026	0.012
264	22.00	0.07	0.038	(0.218)	0.026	0.012
265	22.08	0.10	0.057	(0.217)	0.039	0.018
266	22.17	0.10	0.057	(0.216)	0.039	0.018
267	22.25	0.10	0.057	(0.216)	0.039	0.018
268	22.33	0.07	0.038	(0.215)	0.026	0.012
269	22.42	0.07	0.038	(0.214)	0.026	0.012
270	22.50	0.07	0.038	(0.214)	0.026	0.012
271	22.58	0.07	0.038	(0.213)	0.026	0.012
272	22.67	0.07	0.038	(0.213)	0.026	0.012
273	22.75	0.07	0.038	(0.212)	0.026	0.012
274	22.83	0.07	0.038	(0.211)	0.026	0.012
275	22.92	0.07	0.038	(0.211)	0.026	0.012
276	23.00	0.07	0.038	(0.210)	0.026	0.012
277	23.08	0.07	0.038	(0.210)	0.026	0.012
278	23.17	0.07	0.038	(0.209)	0.026	0.012
279	23.25	0.07	0.038	(0.209)	0.026	0.012
280	23.33	0.07	0.038	(0.209)	0.026	0.012
281	23.42	0.07	0.038	(0.208)	0.026	0.012

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282  23.50     0.07      0.038       (  0.208)       0.026        0.012
283  23.58     0.07      0.038       (  0.207)       0.026        0.012
284  23.67     0.07      0.038       (  0.207)       0.026        0.012
285  23.75     0.07      0.038       (  0.207)       0.026        0.012
286  23.83     0.07      0.038       (  0.207)       0.026        0.012
287  23.92     0.07      0.038       (  0.206)       0.026        0.012
288  24.00     0.07      0.038       (  0.206)       0.026        0.012
          (Loss Rate Not Used)
    Sum =     100.0                                   Sum =    18.7
     Flood volume = Effective rainfall      1.56(In)
      times area       4.2(Ac.)/[(In)/(Ft.)] =       0.5(Ac.Ft)
     Total soil loss =      3.17(In)
     Total soil loss =     1.115(Ac.Ft)
     Total rainfall =      4.73(In)
     Flood volume =       23877.0 Cubic Feet
     Total soil loss =       48579.4 Cubic Feet
     ---------------------------------------------------------------------
      Peak flow rate of this hydrograph =      1.230(CFS)
     ---------------------------------------------------------------------
     +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
     ---------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

     ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ----------------------------------------------------------------------
   0+ 5       0.0002      0.03  Q          |         |         |         |
   0+10       0.0005      0.05  Q          |         |         |         |
   0+15       0.0009      0.05  Q          |         |         |         |
   0+20       0.0014      0.07  Q          |         |         |         |
   0+25       0.0019      0.08  Q          |         |         |         |
   0+30       0.0024      0.08  Q          |         |         |         |
   0+35       0.0029      0.08  Q          |         |         |         |
   0+40       0.0035      0.08  Q          |         |         |         |
   0+45       0.0040      0.08  Q          |         |         |         |
   0+50       0.0046      0.09  Q          |         |         |         |
   0+55       0.0053      0.10  Q          |         |         |         |
   1+ 0       0.0061      0.10  Q          |         |         |         |
   1+ 5       0.0067      0.09  Q          |         |         |         |
   1+10       0.0072      0.08  Q          |         |         |         |
   1+15       0.0077      0.08  Q          |         |         |         |
   1+20       0.0083      0.08  Q          |         |         |         |
   1+25       0.0088      0.08  Q          |         |         |         |
   1+30       0.0093      0.08  Q          |         |         |         |
   1+35       0.0099      0.08  Q          |         |         |         |
   1+40       0.0104      0.08  Q          |         |         |         |
   1+45       0.0109      0.08  Q          |         |         |         |
   1+50       0.0116      0.09  Q          |         |         |         |
   1+55       0.0123      0.10  Q          |         |         |         |
   2+ 0       0.0130      0.10  Q          |         |         |         |
   2+ 5       0.0137      0.10  Q          |         |         |         |
   2+10       0.0144      0.10  QV         |         |         |         |
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2+15	0.0151	0.10	QV	|	|	|	|
2+20	0.0158	0.10	QV	|	|	|	|
2+25	0.0165	0.10	QV	|	|	|	|
2+30	0.0172	0.10	QV	|	|	|	|
2+35	0.0181	0.12	QV	|	|	|	|
2+40	0.0189	0.13	QV	|	|	|	|
2+45	0.0198	0.13	QV	|	|	|	|
2+50	0.0207	0.13	QV	|	|	|	|
2+55	0.0216	0.13	QV	|	|	|	|
3+ 0	0.0225	0.13	QV	|	|	|	|
3+ 5	0.0234	0.13	QV	|	|	|	|
3+10	0.0243	0.13	QV	|	|	|	|
3+15	0.0251	0.13	QV	|	|	|	|
3+20	0.0260	0.13	QV	|	|	|	|
3+25	0.0269	0.13	QV	|	|	|	|
3+30	0.0278	0.13	Q V	|	|	|	|
3+35	0.0287	0.13	Q V	|	|	|	|
3+40	0.0296	0.13	Q V	|	|	|	|
3+45	0.0305	0.13	Q V	|	|	|	|
3+50	0.0315	0.14	Q V	|	|	|	|
3+55	0.0325	0.15	Q V	|	|	|	|
4+ 0	0.0336	0.15	Q V	|	|	|	|
4+ 5	0.0346	0.15	Q V	|	|	|	|
4+10	0.0357	0.15	Q V	|	|	|	|
4+15	0.0368	0.15	Q V	|	|	|	|
4+20	0.0379	0.17	Q V	|	|	|	|
4+25	0.0392	0.18	Q V	|	|	|	|
4+30	0.0404	0.18	Q V	|	|	|	|
4+35	0.0417	0.18	Q V	|	|	|	|
4+40	0.0429	0.18	Q V	|	|	|	|
4+45	0.0441	0.18	Q V	|	|	|	|
4+50	0.0455	0.20	Q V	|	|	|	|
4+55	0.0469	0.20	Q V	|	|	|	|
5+ 0	0.0483	0.21	Q V	|	|	|	|
5+ 5	0.0495	0.18	Q V	|	|	|	|
5+10	0.0506	0.16	Q V	|	|	|	|
5+15	0.0517	0.15	Q V	|	|	|	|
5+20	0.0528	0.17	Q V	|	|	|	|
5+25	0.0541	0.18	Q V	|	|	|	|
5+30	0.0553	0.18	Q V	|	|	|	|
5+35	0.0567	0.20	Q V	|	|	|	|
5+40	0.0581	0.20	Q V	|	|	|	|
5+45	0.0595	0.21	Q V	|	|	|	|
5+50	0.0609	0.21	Q V	|	|	|	|
5+55	0.0623	0.21	Q V	|	|	|	|
6+ 0	0.0637	0.21	Q V	|	|	|	|
6+ 5	0.0653	0.22	Q V	|	|	|	|
6+10	0.0669	0.23	Q V	|	|	|	|
6+15	0.0685	0.23	Q V	|	|	|	|
6+20	0.0701	0.23	Q V	|	|	|	|
6+25	0.0717	0.23	Q V	|	|	|	|
6+30	0.0732	0.23	Q V	|	|	|	|
6+35	0.0749	0.25	Q V	|	|	|	|
6+40	0.0767	0.26	|Q V	|	|	|	|

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 6+45       0.0785      0.26  |Q   V    |          |          |          |
 6+50       0.0803      0.26  |Q   V    |          |          |          |
 6+55       0.0820      0.26  |Q   V    |          |          |          |
 7+ 0       0.0838      0.26  |Q    V   |          |          |          |
 7+ 5       0.0856      0.26  |Q    V   |          |          |          |
 7+10       0.0874      0.26  |Q    V   |          |          |          |
 7+15       0.0891      0.26  |Q    V   |          |          |          |
 7+20       0.0910      0.27  |Q    V   |          |          |          |
 7+25       0.0930      0.28  |Q    V   |          |          |          |
 7+30       0.0949      0.28  |Q    V   |          |          |          |
 7+35       0.0970      0.30  |Q     V  |          |          |          |
 7+40       0.0991      0.31  |Q     V  |          |          |          |
 7+45       0.1012      0.31  |Q     V  |          |          |          |
 7+50       0.1034      0.32  |Q     V  |          |          |          |
 7+55       0.1057      0.33  |Q     V  |          |          |          |
 8+ 0       0.1081      0.33  |Q     V  |          |          |          |
 8+ 5       0.1106      0.36  |Q      V |          |          |          |
 8+10       0.1132      0.38  |Q      V |          |          |          |
 8+15       0.1159      0.39  |Q      V |          |          |          |
 8+20       0.1185      0.39  |Q      V |          |          |          |
 8+25       0.1212      0.39  |Q      V |          |          |          |
 8+30       0.1239      0.39  |Q       V|          |          |          |
 8+35       0.1266      0.40  |Q       V|          |          |          |
 8+40       0.1295      0.41  |Q       V|          |          |          |
 8+45       0.1323      0.41  |Q       V|          |          |          |
 8+50       0.1352      0.43  |Q       V|          |          |          |
 8+55       0.1382      0.44  |Q        V          |          |          |
 9+ 0       0.1413      0.44  |Q        V          |          |          |
 9+ 5       0.1445      0.47  |Q        V          |          |          |
 9+10       0.1478      0.49  |Q        V          |          |          |
 9+15       0.1512      0.49  |Q        |V         |          |          |
 9+20       0.1547      0.50  | Q       |V         |          |          |
 9+25       0.1582      0.51  | Q       |V         |          |          |
 9+30       0.1618      0.52  | Q       |V         |          |          |
 9+35       0.1654      0.53  | Q       | V        |          |          |
 9+40       0.1691      0.54  | Q       | V        |          |          |
 9+45       0.1729      0.54  | Q       | V        |          |          |
 9+50       0.1767      0.56  | Q       | V        |          |          |
 9+55       0.1806      0.57  | Q       |  V       |          |          |
10+ 0       0.1845      0.57  | Q       |  V       |          |          |
10+ 5       0.1877      0.46  |Q        |  V       |          |          |
10+10       0.1904      0.39  |Q        |  V       |          |          |
10+15       0.1931      0.39  |Q        |   V      |          |          |
10+20       0.1957      0.39  |Q        |   V      |          |          |
10+25       0.1984      0.39  |Q        |   V      |          |          |
10+30       0.2010      0.39  |Q        |   V      |          |          |
10+35       0.2042      0.46  |Q        |   V      |          |          |
10+40       0.2077      0.51  | Q       |    V     |          |          |
10+45       0.2113      0.52  | Q       |    V     |          |          |
10+50       0.2148      0.52  | Q       |    V     |          |          |
10+55       0.2184      0.52  | Q       |    V     |          |          |
11+ 0       0.2219      0.52  | Q       |     V    |          |          |
11+ 5       0.2254      0.50  | Q       |     V    |          |          |
11+10       0.2287      0.49  |Q        |     V    |          |          |
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11+15 0.2321 0.49
11+20 0.2355 0.49
11+25 0.2389 0.49
11+30 0.2422 0.49
11+35 0.2454 0.46
11+40 0.2484 0.44
11+45 0.2514 0.44
11+50 0.2546 0.45
11+55 0.2577 0.46
12+ 0 0.2609 0.46
12+ 5 0.2649 0.57
12+10 0.2692 0.64
12+15 0.2737 0.64
12+20 0.2782 0.66
12+25 0.2828 0.67
12+30 0.2874 0.67
12+35 0.2922 0.70
12+40 0.2972 0.72
12+45 0.3022 0.72
12+50 0.3073 0.75
12+55 0.3126 0.77
13+ 0 0.3180 0.78
13+ 5 0.3251 1.02
13+10 0.3332 1.18
13+15 0.3415 1.21
13+20 0.3499 1.21
13+25 0.3583 1.22
13+30 0.3668 1.23
13+35 0.3727 0.86
13+40 0.3770 0.62
13+45 0.3810 0.59
13+50 0.3851 0.59
13+55 0.3892 0.59
14+ 0 0.3933 0.59
14+ 5 0.3979 0.67
14+10 0.4028 0.72
14+15 0.4079 0.73
14+20 0.4127 0.70
14+25 0.4174 0.67
14+30 0.4220 0.68
14+35 0.4267 0.68
14+40 0.4315 0.69
14+45 0.4363 0.70
14+50 0.4409 0.67
14+55 0.4453 0.65
15+ 0 0.4497 0.64
15+ 5 0.4541 0.63
15+10 0.4583 0.62
15+15 0.4626 0.62
15+20 0.4668 0.60
15+25 0.4708 0.59
15+30 0.4749 0.59
15+35 0.4786 0.53
15+40 0.4820 0.49

15+45	0.4854	0.49	|Q	|	|	|	V |
15+50	0.4887	0.49	|Q	|	|	|	V |
15+55	0.4921	0.49	|Q	|	|	|	V |
16+ 0	0.4955	0.49	|Q	|	|	|	V |
16+ 5	0.4973	0.26	|Q	|	|	|	V |
16+10	0.4981	0.12	Q	|	|	|	V |
16+15	0.4988	0.10	Q	|	|	|	V |
16+20	0.4996	0.10	Q	|	|	|	V |
16+25	0.5003	0.10	Q	|	|	|	V |
16+30	0.5010	0.10	Q	|	|	|	V |
16+35	0.5016	0.09	Q	|	|	|	V |
16+40	0.5021	0.08	Q	|	|	|	V |
16+45	0.5027	0.08	Q	|	|	|	V |
16+50	0.5032	0.08	Q	|	|	|	V |
16+55	0.5037	0.08	Q	|	|	|	V |
17+ 0	0.5042	0.08	Q	|	|	|	V |
17+ 5	0.5050	0.11	Q	|	|	|	V |
17+10	0.5059	0.13	Q	|	|	|	V |
17+15	0.5067	0.13	Q	|	|	|	V |
17+20	0.5076	0.13	Q	|	|	|	V |
17+25	0.5085	0.13	Q	|	|	|	V |
17+30	0.5094	0.13	Q	|	|	|	V |
17+35	0.5103	0.13	Q	|	|	|	V |
17+40	0.5112	0.13	Q	|	|	|	V |
17+45	0.5121	0.13	Q	|	|	|	V |
17+50	0.5129	0.11	Q	|	|	|	V |
17+55	0.5136	0.10	Q	|	|	|	V |
18+ 0	0.5143	0.10	Q	|	|	|	V |
18+ 5	0.5150	0.10	Q	|	|	|	V |
18+10	0.5157	0.10	Q	|	|	|	V |
18+15	0.5164	0.10	Q	|	|	|	V |
18+20	0.5171	0.10	Q	|	|	|	V |
18+25	0.5178	0.10	Q	|	|	|	V |
18+30	0.5185	0.10	Q	|	|	|	V |
18+35	0.5191	0.09	Q	|	|	|	V |
18+40	0.5197	0.08	Q	|	|	|	V |
18+45	0.5202	0.08	Q	|	|	|	V |
18+50	0.5206	0.06	Q	|	|	|	V |
18+55	0.5210	0.05	Q	|	|	|	V |
19+ 0	0.5214	0.05	Q	|	|	|	V |
19+ 5	0.5218	0.07	Q	|	|	|	V |
19+10	0.5223	0.08	Q	|	|	|	V |
19+15	0.5229	0.08	Q	|	|	|	V |
19+20	0.5235	0.09	Q	|	|	|	V |
19+25	0.5242	0.10	Q	|	|	|	V |
19+30	0.5249	0.10	Q	|	|	|	V |
19+35	0.5255	0.09	Q	|	|	|	V |
19+40	0.5261	0.08	Q	|	|	|	V |
19+45	0.5266	0.08	Q	|	|	|	V |
19+50	0.5270	0.06	Q	|	|	|	V |
19+55	0.5274	0.05	Q	|	|	|	V |
20+ 0	0.5278	0.05	Q	|	|	|	V |
20+ 5	0.5282	0.07	Q	|	|	|	V |
20+10	0.5287	0.08	Q	|	|	|	V |

20+15	0.5293	0.08	Q	|	|	|	V |
20+20	0.5298	0.08	Q	|	|	|	V |
20+25	0.5303	0.08	Q	|	|	|	V |
20+30	0.5309	0.08	Q	|	|	|	V |
20+35	0.5314	0.08	Q	|	|	|	V |
20+40	0.5319	0.08	Q	|	|	|	V |
20+45	0.5325	0.08	Q	|	|	|	V |
20+50	0.5329	0.06	Q	|	|	|	V |
20+55	0.5333	0.05	Q	|	|	|	V |
21+ 0	0.5336	0.05	Q	|	|	|	V |
21+ 5	0.5341	0.07	Q	|	|	|	V |
21+10	0.5346	0.08	Q	|	|	|	V|
21+15	0.5351	0.08	Q	|	|	|	V|
21+20	0.5355	0.06	Q	|	|	|	V|
21+25	0.5359	0.05	Q	|	|	|	V|
21+30	0.5363	0.05	Q	|	|	|	V|
21+35	0.5367	0.07	Q	|	|	|	V|
21+40	0.5372	0.08	Q	|	|	|	V|
21+45	0.5378	0.08	Q	|	|	|	V|
21+50	0.5382	0.06	Q	|	|	|	V|
21+55	0.5386	0.05	Q	|	|	|	V|
22+ 0	0.5389	0.05	Q	|	|	|	V|
22+ 5	0.5394	0.07	Q	|	|	|	V|
22+10	0.5399	0.08	Q	|	|	|	V|
22+15	0.5404	0.08	Q	|	|	|	V|
22+20	0.5409	0.06	Q	|	|	|	V|
22+25	0.5412	0.05	Q	|	|	|	V|
22+30	0.5416	0.05	Q	|	|	|	V|
22+35	0.5419	0.05	Q	|	|	|	V|
22+40	0.5423	0.05	Q	|	|	|	V|
22+45	0.5427	0.05	Q	|	|	|	V|
22+50	0.5430	0.05	Q	|	|	|	V|
22+55	0.5434	0.05	Q	|	|	|	V|
23+ 0	0.5437	0.05	Q	|	|	|	V|
23+ 5	0.5441	0.05	Q	|	|	|	V|
23+10	0.5444	0.05	Q	|	|	|	V|
23+15	0.5448	0.05	Q	|	|	|	V|
23+20	0.5451	0.05	Q	|	|	|	V|
23+25	0.5455	0.05	Q	|	|	|	V|
23+30	0.5458	0.05	Q	|	|	|	V|
23+35	0.5462	0.05	Q	|	|	|	V|
23+40	0.5466	0.05	Q	|	|	|	V|
23+45	0.5469	0.05	Q	|	|	|	V|
23+50	0.5473	0.05	Q	|	|	|	V|
23+55	0.5476	0.05	Q	|	|	|	V|
24+ 0	0.5480	0.05	Q	|	|	|	V|
24+ 5	0.5481	0.02	Q	|	|	|	V|
24+10	0.5481	0.00	Q	|	|	|	V

```
  CIVILCADD/CIVILDESIGN  Engineering Software, (c) 2004   Version 7.0
------------------------------------------------------------------------
CURB INLET CAPACITY
TTM 38636
RANCHO MIRAGE

------------------------------------------------------------------------
Program License Serial Number 6260

------------------------------------------------------------------------
           *** Street Flow +Inlet Analysis ***

      Upstream (headworks) Elevation =    326.510(Ft.)
      Downstream (outlet) Elevation =    324.000(Ft.)
      Runoff/Flow Distance =    502.000(Ft.)
      Maximum flow rate in channel(s) =     11.300(CFS)
------------------------------------------------------------------------


Top of street segment elevation =    326.510(Ft.)
End of street segment elevation =    324.000(Ft.)
Length of street segment  =   502.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =  16.500(Ft.)
Slope from gutter to grade break (v/hz) =   0.086
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =  12.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0130
 Manning's N from grade break to crown =  0.0150

Half street cross section data points:
   X-coordinate (Ft.)   Y-coordinate (Ft.)
            0.0000               0.7400 right of way
           12.0000               0.5000 top of curb
           12.0000               0.0000 flow line
           13.5000               0.1250 gutter end
           13.5000               0.1250 grade break
           30.0000               0.4550 crown



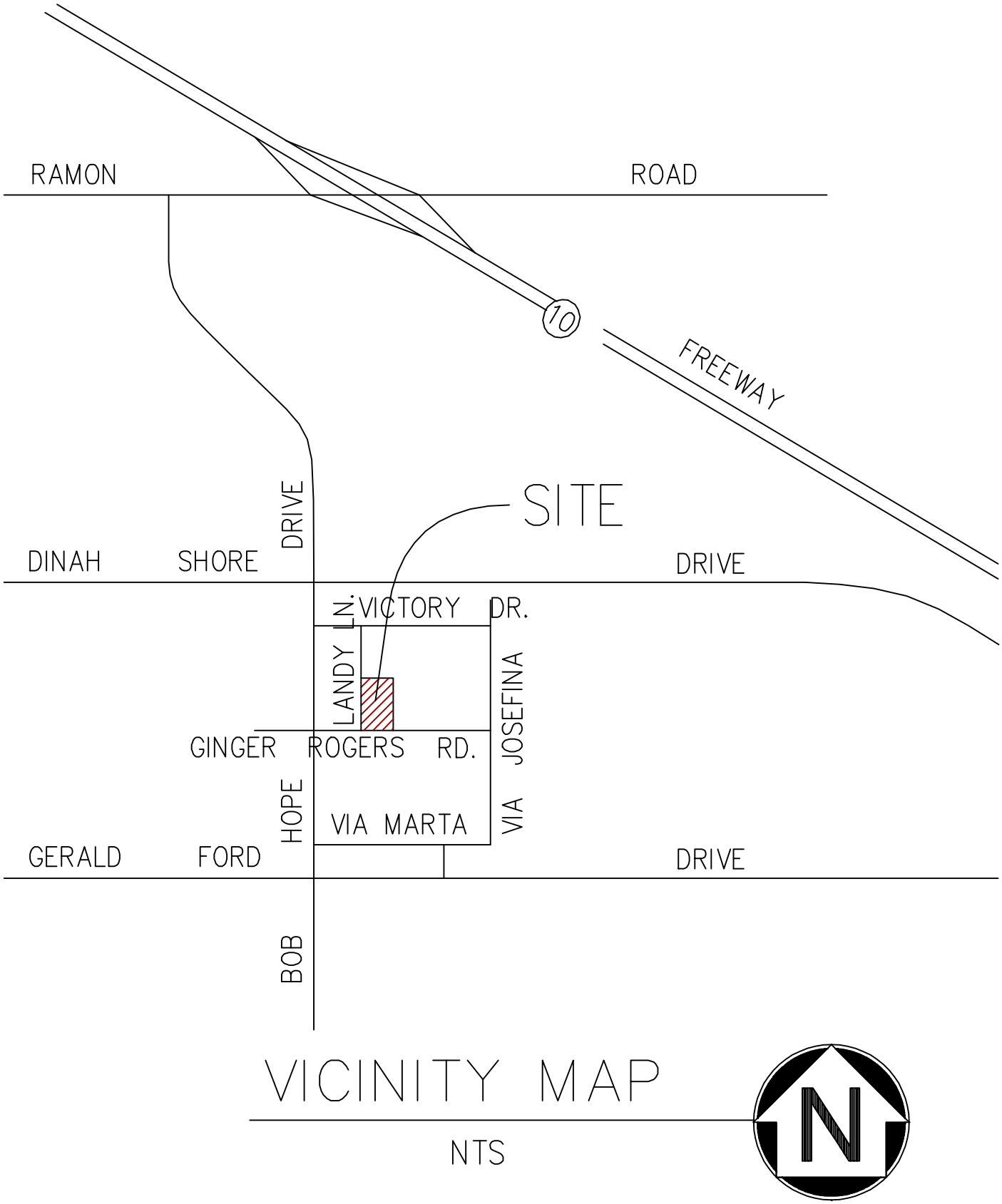
CURB INLET TYPE STREET DRAIN, Opening Height =      8.000(In.)

Street Inlet Calculations:
Street flow in street inlet depression =     11.300(CFS)
 Gutter depression depth =      4.000(In.)
 Gutter depression width =      1.500(Ft.)
Depth of flow =   0.735(Ft.)
```

```
Average velocity =   2.113(Ft/s)
Total flow rate in 1/2 street =   5.650(CFS)
U.S. DOT Hydraulic Engineering Circular No. 12 inlet calculations:
 Street flow half width at start of inlet =     15.339(Ft.)
 Flow rate in gutter section of street = Qw =      2.339(CFS)
 Given inlet length  L =      4.000(Ft.)
 Ratio of frontal flow to total flow = E0 =  0.4140
Street slope is less than 0.5% ,
Depth of flow indicates an orifice flow
condition exists for an opening height of    8.00(In.)
Using equation Qi = .67hL(2gd0)^.5
Maximum inlet flow capacity =     18.177(CFS)

Half street cross section data points through curb inlet:
            X-coordinate (Ft.)   Y-coordinate (Ft.)
             0.0000               1.0733 right of way
            12.0000               0.8333 top of curb
            12.0000               0.0000 flow line
            13.5000               0.4583 gutter/depression end
            13.5000               0.4583 grade break
            30.0000               0.7883 crown
Note: Street inlet capacity is greater than existing flow in street.

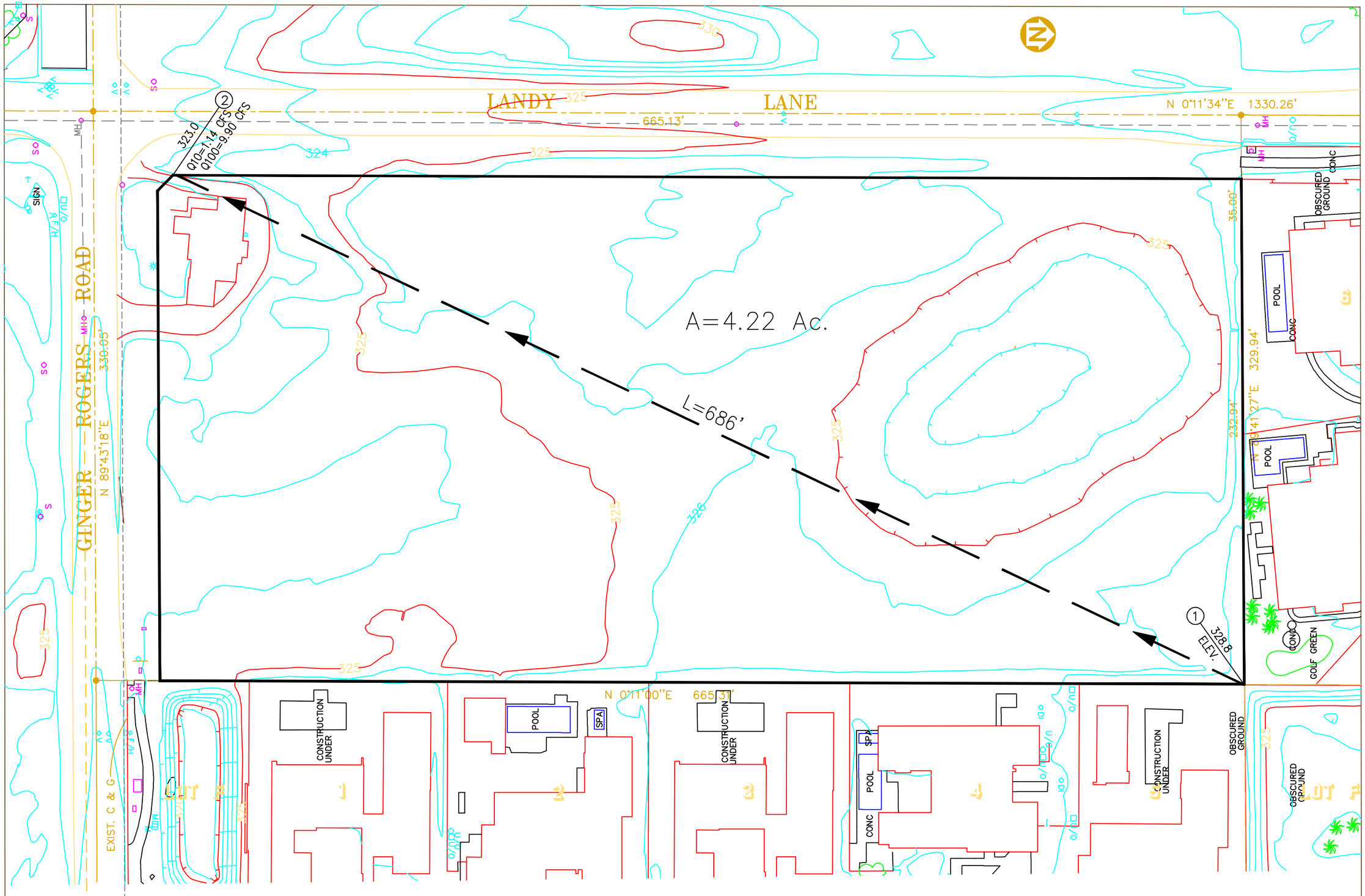
Remaining flow in street below inlets =      0.000(CFS)
Zero flow remaining in street
```



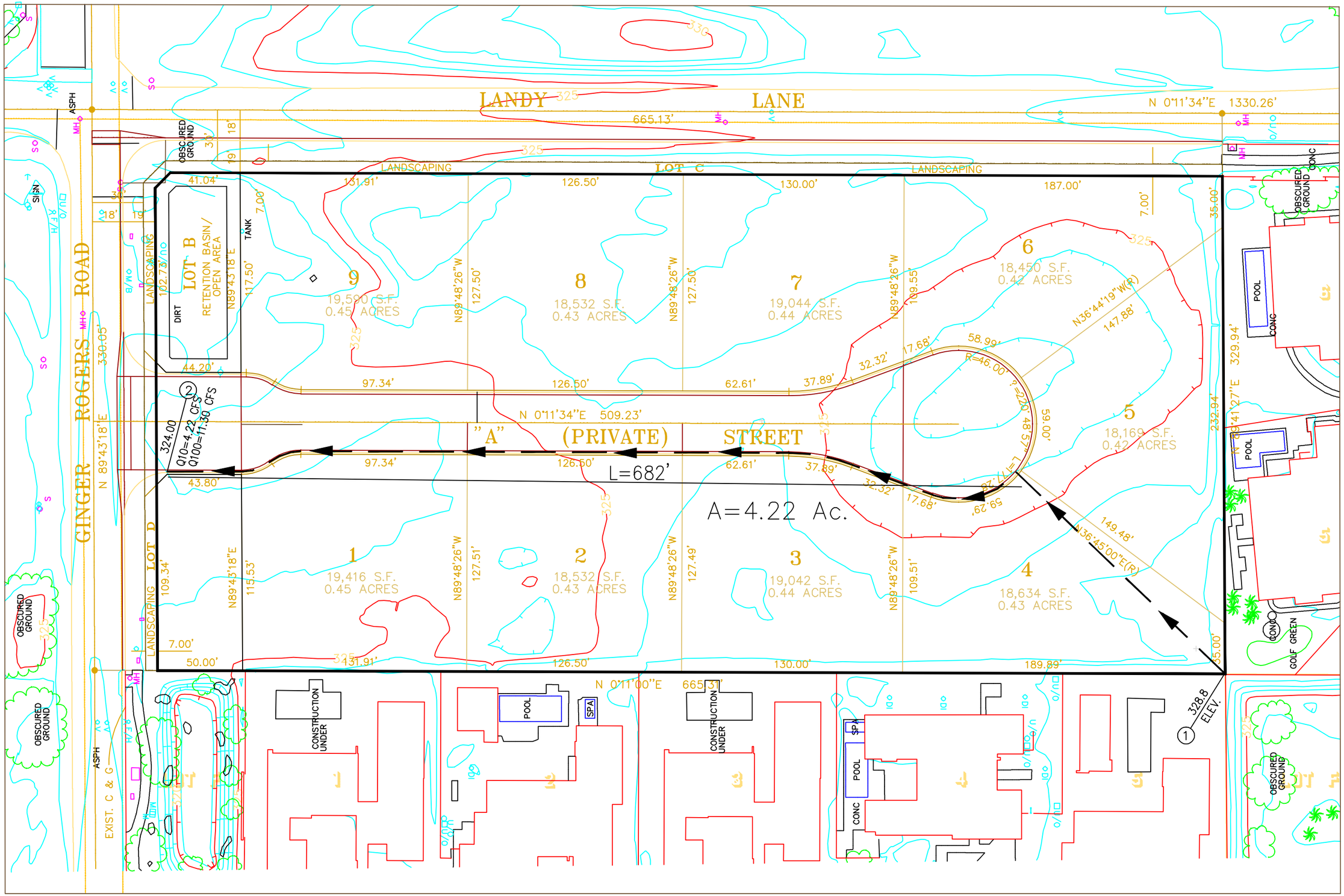
VICINITY MAP

NTS

HYDROLOGY MAP
PREDEVELOPMENT



HYDROLOGY MAP
POST DEVELOPMENT



NOAA Atlas 14, Volume 6, Version 2
Location name: Rancho Mirage, California, USA*
Latitude: 33.7948°, Longitude: -116.4041°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.061** (0.050-0.073)	**0.094** (0.078-0.114)	**0.145** (0.120-0.176)	**0.193** (0.159-0.236)	**0.269** (0.214-0.342)	**0.338** (0.263-0.438)	**0.418** (0.318-0.556)	**0.513** (0.379-0.702)	**0.666** (0.471-0.951)	**0.841** (0.575-1.24)
10-min	**0.087** (0.072-0.105)	**0.134** (0.112-0.163)	**0.208** (0.172-0.253)	**0.276** (0.227-0.339)	**0.386** (0.307-0.490)	**0.484** (0.377-0.628)	**0.599** (0.455-0.797)	**0.735** (0.543-1.01)	**0.955** (0.676-1.36)	**1.21** (0.824-1.78)
15-min	**0.105** (0.088-0.127)	**0.163** (0.135-0.197)	**0.251** (0.208-0.305)	**0.334** (0.275-0.410)	**0.466** (0.371-0.592)	**0.586** (0.456-0.760)	**0.725** (0.551-0.964)	**0.889** (0.656-1.22)	**1.16** (0.817-1.65)	**1.46** (0.996-2.16)
30-min	**0.164** (0.136-0.198)	**0.253** (0.211-0.307)	**0.391** (0.325-0.476)	**0.521** (0.428-0.639)	**0.727** (0.578-0.923)	**0.913** (0.711-1.18)	**1.13** (0.858-1.50)	**1.39** (1.02-1.90)	**1.80** (1.27-2.57)	**2.27** (1.55-3.36)
60-min	**0.239** (0.199-0.289)	**0.370** (0.308-0.448)	**0.571** (0.474-0.694)	**0.759** (0.625-0.932)	**1.06** (0.844-1.35)	**1.33** (1.04-1.73)	**1.65** (1.25-2.19)	**2.02** (1.49-2.77)	**2.63** (1.86-3.75)	**3.32** (2.27-4.90)
2-hr	**0.340** (0.283-0.411)	**0.515** (0.429-0.625)	**0.776** (0.644-0.945)	**1.01** (0.836-1.25)	**1.38** (1.10-1.76)	**1.71** (1.33-2.21)	**2.07** (1.57-2.75)	**2.49** (1.84-3.40)	**3.13** (2.21-4.47)	**3.71** (2.53-5.48)
3-hr	**0.409** (0.341-0.495)	**0.616** (0.512-0.747)	**0.920** (0.764-1.12)	**1.20** (0.984-1.47)	**1.62** (1.29-2.05)	**1.98** (1.54-2.56)	**2.38** (1.81-3.17)	**2.84** (2.10-3.89)	**3.53** (2.50-5.04)	**4.14** (2.83-6.13)
6-hr	**0.557** (0.464-0.675)	**0.837** (0.697-1.02)	**1.24** (1.03-1.51)	**1.61** (1.32-1.97)	**2.15** (1.71-2.73)	**2.62** (2.04-3.39)	**3.13** (2.38-4.16)	**3.70** (2.73-5.07)	**4.57** (3.23-6.52)	**5.30** (3.62-7.84)
12-hr	**0.667** (0.556-0.809)	**1.02** (0.846-1.23)	**1.52** (1.26-1.85)	**1.98** (1.63-2.42)	**2.65** (2.11-3.37)	**3.23** (2.52-4.19)	**3.87** (2.94-5.15)	**4.59** (3.39-6.28)	**5.66** (4.00-8.08)	**6.58** (4.49-9.73)
24-hr	**0.779** (0.690-0.898)	**1.21** (1.07-1.40)	**1.83** (1.62-2.12)	**2.39** (2.09-2.79)	**3.23** (2.74-3.89)	**3.94** (3.27-4.85)	**4.73** (3.84-5.96)	**5.62** (4.44-7.27)	**6.96** (5.28-9.36)	**8.11** (5.95-11.3)
2-day	**0.862** (0.763-0.994)	**1.35** (1.20-1.56)	**2.06** (1.82-2.39)	**2.69** (2.35-3.14)	**3.63** (3.08-4.37)	**4.42** (3.67-5.44)	**5.30** (4.30-6.66)	**6.27** (4.95-8.11)	**7.73** (5.86-10.4)	**8.97** (6.58-12.5)
3-day	**0.903** (0.799-1.04)	**1.42** (1.26-1.64)	**2.17** (1.92-2.52)	**2.84** (2.48-3.31)	**3.83** (3.24-4.61)	**4.66** (3.87-5.73)	**5.58** (4.52-7.02)	**6.60** (5.21-8.53)	**8.12** (6.15-10.9)	**9.41** (6.90-13.1)
4-day	**0.930** (0.823-1.07)	**1.47** (1.30-1.70)	**2.25** (1.99-2.61)	**2.94** (2.57-3.43)	**3.97** (3.36-4.78)	**4.83** (4.01-5.94)	**5.78** (4.69-7.27)	**6.83** (5.39-8.83)	**8.40** (6.37-11.3)	**9.72** (7.13-13.5)
7-day	**0.992** (0.878-1.14)	**1.58** (1.40-1.83)	**2.43** (2.15-2.82)	**3.19** (2.79-3.72)	**4.30** (3.64-5.18)	**5.24** (4.35-6.43)	**6.26** (5.07-7.87)	**7.39** (5.83-9.55)	**9.06** (6.87-12.2)	**10.5** (7.68-14.6)
10-day	**1.04** (0.922-1.20)	**1.67** (1.48-1.93)	**2.57** (2.27-2.98)	**3.37** (2.95-3.93)	**4.56** (3.86-5.49)	**5.55** (4.61-6.82)	**6.64** (5.38-8.35)	**7.84** (6.19-10.1)	**9.61** (7.29-12.9)	**11.1** (8.14-15.4)
20-day	**1.13** (1.00-1.30)	**1.83** (1.61-2.11)	**2.84** (2.50-3.28)	**3.73** (3.26-4.35)	**5.07** (4.29-6.10)	**6.19** (5.14-7.60)	**7.41** (6.01-9.33)	**8.77** (6.92-11.3)	**10.8** (8.16-14.5)	**12.4** (9.12-17.3)
30-day	**1.26** (1.11-1.45)	**2.04** (1.80-2.35)	**3.18** (2.80-3.68)	**4.19** (3.67-4.89)	**5.72** (4.84-6.88)	**7.00** (5.81-8.60)	**8.40** (6.81-10.6)	**9.95** (7.85-12.9)	**12.2** (9.27-16.5)	**14.1** (10.4-19.7)
45-day	**1.37** (1.21-1.57)	**2.22** (1.96-2.56)	**3.48** (3.07-4.03)	**4.61** (4.04-5.38)	**6.32** (5.36-7.61)	**7.77** (6.45-9.55)	**9.35** (7.59-11.8)	**11.1** (8.77-14.4)	**13.7** (10.4-18.4)	**15.8** (11.6-22.0)
60-day	**1.49** (1.32-1.71)	**2.42** (2.14-2.79)	**3.80** (3.35-4.39)	**5.04** (4.41-5.88)	**6.93** (5.87-8.34)	**8.54** (7.09-10.5)	**10.3** (8.36-13.0)	**12.3** (9.67-15.8)	**15.1** (11.5-20.4)	**17.6** (12.9-24.4)

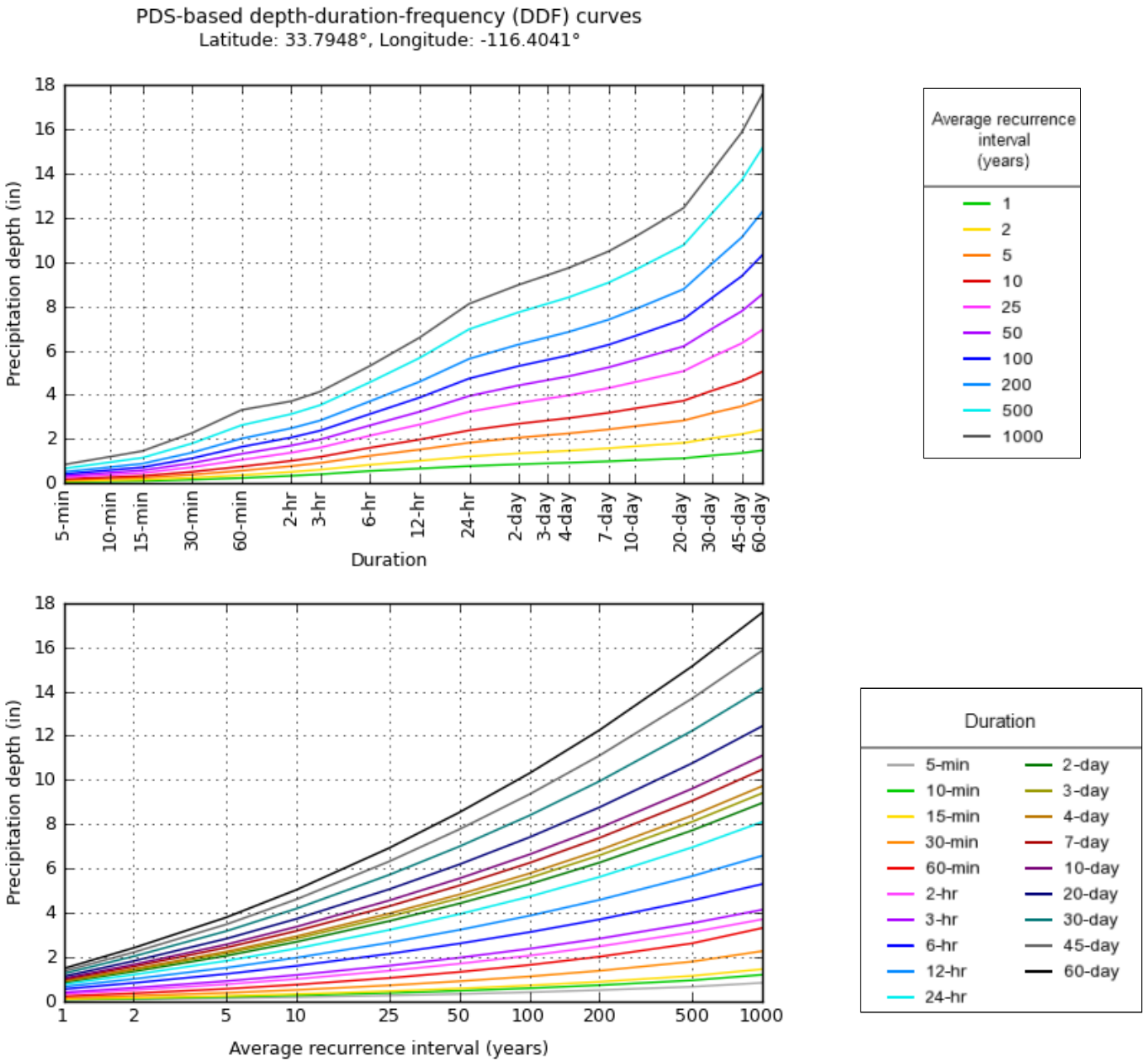
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Wed May 3 13:39:02 2023

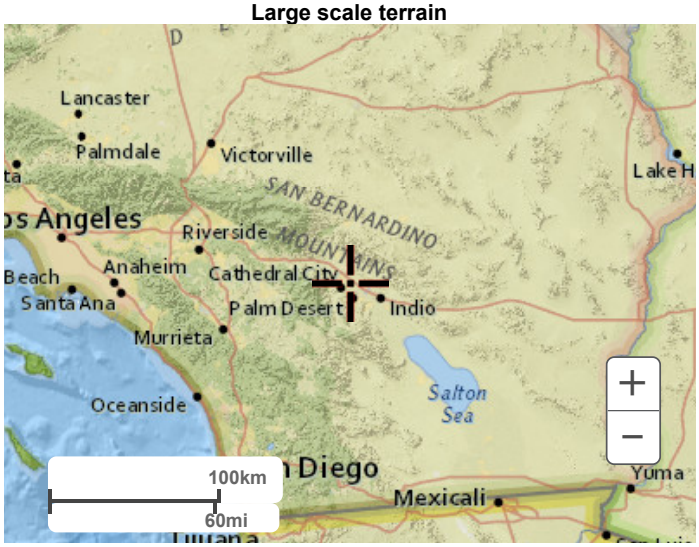
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Maps & aerials

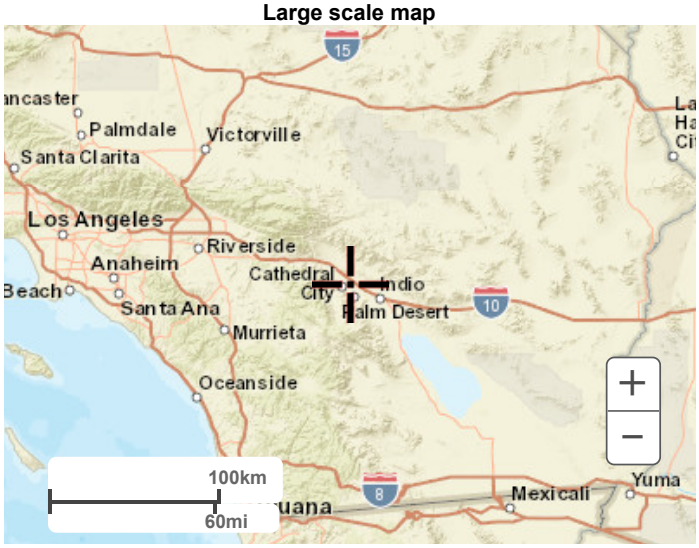
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Whitewater Watershed

BMP Design Volume, V_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	SD Engineering ans Associates	Date	4/28/2023
Designed by	Suresh	County/City Case No	
Company Project Number/Name	TTM 38636		
Drainage Area Number/Name	DA 1		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 4.22 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 1.68 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.40

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.28

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ V_u = 0.11 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}.

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12\ (in/ft)}$$

V_{BMP} = 1,685 ft^3

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries / Calculated Cells

Company Name: 72094 Ginger Rogers Lane — Date: 4/28/2023

Designed by: — County/City Case No.: Rancho Mirag

Design Volume

a) Tributary area (BMP subarea)	A_T =	4.22	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,685	ft^3

Maximum Depth

a) Infiltration rate	I =	4.5	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	2	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	13.5	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		200	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		70	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	64.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	13.5	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	1.5	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	1123	ft^2
d) Proposed Design Surface Area	A_D =	3441	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	8	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1	ft
c) Forebay surface area (minimum)	Area =	8	ft^2
d) Full height notch-type weir	Width (W) =	12.0	in

Notes:

Appendix G Project Specific Water Quality Management Plan dated April 28, 2023

Project Specific
Water Quality Management Plan

For: Tentative Tract Map 38636

City of Rancho Mirage

DEVELOPMENT NO. TENTATIVE TRACT MAP 38636
DESIGN REVIEW NO. ENTITLEMENT APPLICATION

Prepared for:

72094 Ginger Rogers LLC
Att'n: Farhad Zomoradi
P.O. Box 10544
Beverly Hills, Ca. 90213
Telephone: 310-428-2875

Prepared by:

SD Engineering and Associates
242 E. Airport Drive, Ste. 212
San Bernardino, CA. 92408
(909) 215-3451

Original Date Prepared: April 28, 2023

Revision Date(s): Date

OWNER'S CERTIFICATION

This project-specific Water Quality Management Plan (WQMP) has been prepared for:

72094 Ginger Rogers LLC
P.O. Box 10544, Beverly Hills, Ca. 90213
for the project known as Tentative Parcel Map 38636, in the City of Rancho Mirage

This WQMP is intended to comply with the requirements of **City of Rancho Mirage** for Tentative Tract Map 38636 which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as

appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under **City of Rancho Mirage** Water Quality Ordinance (Municipal Code Section).

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that I am the owner of the property that is the subject of this WQMP, and that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

_____
Owner's Signature

Farhad Zomoradi
Owner's Printed Name

Owner
Owner's Title/Position

_____
Date

P.O. Box 10544
Beverly Hills, Ca. 90213
310 428-2875

ATTEST

_____
Notary Signature

_____
Printed Name

_____
Title/Position

_____
Date

THIS FORM SHALL BE NOTARIZED BEFORE ACCEPTANCE OF THE
FINAL PROJECT SPECIFIC WQMP

TO BE INCLUDED IN FINAL WQMPs (AFTER FINAL PLAN CHECK)

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APPENDICES

A. Conditions of Approval
B. Vicinity Map, WQMP Site Plan, and Receiving Waters Map
C. Supporting Detail Related to Hydrologic Conditions of Concern (If Applicable)
D. Educational Materials
E. Soils Report (if applicable)
F. Structural BMP and/or Retention Facility Sizing Calculations and Design Details
G. Agreements – CC&Rs, Covenant and Agreements, BMP Maintenance Agreements and/or Other Mechanisms for ensuring ongoing Operation, Maintenance, Funding and Transfer of Requirements for this project-specific WQMP
H. Phase 1 Environmental Site Assessment – Summary of Site Remediation Conducted and Use Restrictions
I. Project-Specific WQMP Summary Data Form

I. Project Description

Project Owner: 72094 Ginger Rogers LLC
P.O. Box 10544
Beverly Hills, Ca. 90213
310 428-2875

WQMP Preparer: SD Engineering and Associates
242 E. Airport Drive, Ste. 212
San Bernardino, Ca. 82408
909 215-3451

Project Site Address:	72094 Ginger Rogers Road Rancho Mirage, Ca.
Planning Area/ Community Name/ Development Name:	City of Rancho Mirage Tentative Tract Map 38636
APN Number(s):	685-080-002
Latitude & Longitude:	33.794783, -116.404113
Receiving Water:	Whitewater River
Project Site Size:	4.22 Acres

Standard Industrial Classification (SIC) Code: 1521

Formation of Home Owners' Association (HOA)
or Property Owners Association (POA): Y ☒ N ☐

Additional Permits/Approvals required for the Project:

AGENCY	Permit required
State Department of Fish and Wildlife, Fish and Game Code §1602 Streambed Alteration Agreement	Y ☐ N☒
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Certification	Y ☐ N☒
US Army Corps of Engineers, CWA Section 404 permit	Y ☐ N☒
US Fish and Wildlife, Endangered Species Act Section 7 biological opinion	Y ☐ N☒
Statewide Construction General Permit Coverage	Y ☒ N☐
Statewide Industrial General Permit Coverage	Y ☐ N☒
Other *(please list in the space below as required)*	

Describe project here.

Appendix A of this project-specific WQMP includes a complete copy of the final Conditions of Approval. Appendix B of this project-specific WQMP includes:

a. A Vicinity Map identifying the project site and surrounding planning areas in sufficient detail; and

b. A Site Plan for the project. The Site Plan included as part of Appendix B depicts the following project features:

- Location and identification of all structural BMPs, including Source Control, LID/Site Design and Treatment Control BMPs.
- Landscaped areas.
- Paved areas and intended uses (i.e., parking, outdoor work area, outdoor material storage area, sidewalks, patios, tennis courts, etc.).
- Number and type of structures and intended uses (i.e., buildings, tenant spaces, dwelling units, community facilities such as pools, recreation facilities, tot lots, etc.).
- Infrastructure (i.e., streets, storm drains, etc.) that will revert to public agency ownership and operation.
- Location of existing and proposed public and private storm drainage facilities (i.e., storm drains, channels, basins, etc.), including catch basins and other inlets/outlet structures. Existing and proposed drainage facilities should be clearly differentiated.
- Location(s) of Receiving Waters to which the project directly or indirectly discharges.
- Location of points where onsite (or tributary offsite) flows exit the property/project site.
- Delineation of proposed drainage area boundaries, including tributary offsite areas, for each location where flows exit the project site and existing site (where existing site flows are required to be addressed). Each tributary area should be clearly denoted.
- Pre- and post-project topography.

Appendix I is a one page form that summarizes pertinent information relative to this project-specific WQMP.

II. Site Characterization

Land Use Designation or Zoning:	R-L-2, Very Low Density Residential
Current Property Use:	Residential
Proposed Property Use:	Residential
Availability of Soils Report:	Y ☒ N ☐ *Note: A soils report is required if infiltration BMPs are utilized. Attach report in Appendix E.*
Phase 1 Site Assessment:	Y ☐ N ☒ *Note: If prepared, attached remediation summary and use restrictions in Appendix H.*

Receiving Waters for Urban Runoff from Site

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use Designated Receiving Waters
Whitewater River	NONE	MUN, AGR, GWR, RECI, REC II, COLD, WILD, POW	N/A, 2 miles

III. Pollutants of Concern

Table 1. Pollutant of Concern Summary

Pollutant Category	Potential for Project and/or Existing Site	Causing Receiving Water Impairment
Bacteria/Virus	Potential	Coachella Valley SWC
Heavy Metals	None	
Nutrients	Potential	Coachella Valley SWC
Toxic Organic Compounds	None	
Sediment/Turbidity	Potential	Coachella Valley SWC
Trash & Debris	Potential	
Oil & Grease	Potential	
Pesticides	Potential	Coachella Valley SWC
Other (specify pollutant):		

IV. Hydrologic Conditions of Concern

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☒ The project will be required to retain urban runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater"). This section does not need to be completed; however, retention facility design details and sizing calculations must be included in Appendix F.

No ☐ This section must be completed.

This Project meets the following condition:

☒ **Condition A**: 1) Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4 or engineered and maintained channel, 2) the discharge is in full compliance with local land use authority requirements for connections and discharges to the MS4 (including both quality and quantity requirements), 3) the discharge would not significantly impact stream habitat in proximate Receiving Waters, **and** 4) the discharge is authorized by the local land use authority.

☐ **Condition B**: The project disturbs less than 1 acre and is not part of a larger common plan of development that exceeds 1 acre of disturbance. The disturbed area calculation must include all disturbances associated with larger plans of development.

☐ **Condition C**: The project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by, where applicable, complying with the local land use authority's on-site retention ordinance, or minimizing impervious area on a site and incorporating other Site-Design BMP concepts and LID/Site Design BMPs that assure non-exceedance of pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the local land use authority.

☐ **None:** Refer to Section 3.4 of the Whitewater River Region WQMP Guidance document for additional requirements.

Supporting engineering studies, calculations, and reports are included in Appendix C.

	2 year – 24 hour		10 year – 24 hour	
	Precondition	**Post-condition**	**Precondition**	**Post-condition**
Discharge (cfs)				
Velocity (fps)				
Volume (cubic feet)				
Duration (minutes)				

V. Best Management Practices

This project implements Best Management Practices (BMPs) to address the Pollutants of Concern that may potentially be generated from the use of the Underground Infiltration Chambers. These BMPs have been selected and implemented to comply with Section 3.5 of the WQMP Guidance document, and consist of Site Design BMP concepts, Source Control, LID/Site Design and, if/where necessary, Treatment Control BMPs as described herein.

V.1 Site Design BMP Concepts, LID/Site Design and Treatment Control BMPs

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☒ The project will be required to retain Urban Runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater). **The LID/Site Design measurable goal has thus been met (100%), and Sections V.1.A and V.1.B do not need to be completed**; however, retention facility design details and sizing calculations must be included in Appendix F, and '100%' should be entered into Column 3 of Table 6 below.

No ☐ Section V.1 must be completed.

This section of the Project-Specific WQMP documents the LID/Site Design BMPs and, if/where necessary, the Treatment Control BMPs that will be implemented on the project to meet the requirements detailed within Section 3.5.1 of the WQMP Guidance document. Section 3.5.1 includes requirements to implement Site Design Concepts and BMPs, and includes requirements to address Pollutants of Concern with BMPs. Further, sub-section 3.5.1.1 specifically requires that Pollutants of Concern be addressed with LID/Site Design BMPs to the extent feasible.

LID/Site Design BMPs are those BMPs listed within Table 2 below which promote retention and/or feature a natural treatment mechanism; off-site and regionally-based BMPs are also LID/Site Design BMPs, and therefore count towards the measurable goal, if they fit these criteria. This project incorporates LID/Site Design BMPs to fully address the Treatment Control BMP requirement where and to the extent feasible. If and where it has been acceptably demonstrated to the local land use authority that it is infeasible to fully meet this requirement with LID/Site Design BMPs, Section V.1.B (below) includes a description of the conventional Treatment Control BMPs that will be substituted to meet the same requirements.

In addressing Pollutants of Concern, BMPs are selected using Table 2 below.

Table 2. BMP Selection Matrix Based Upon Pollutant of Concern Removal Efficiency [(1)]

(Sources: Riverside County Flood Control & Water Conservation District Design Handbook for Low Impact Development Best Management Practices, dated September 2011, the Orange County Technical Guidance Document for Water Quality Management Plans, dated May 19, 2011, and the Caltrans Treatment BMP Technology Report, dated April 2010 and April 2008)

Pollutant of Concern	Landscape Swale[2, 3]	Landscape Strip[2, 3]	Biofiltration (with underdrain)[2, 3]	Extended Detention Basin[2]	Sand Filter Basin[2]	Infiltration Basin[2]	Infiltration Trench[2]	Permeable Pavement[2]	Bioretention (w/o underdrain)[2, 3]	Other BMPs Including Proprietary BMPs[4, 6]
Sediment & Turbidity	M	M	H	M	H	H	H	H	H	Varies by Product[5]
Nutrients	L/M	L/M	M	L/M	L/M	H	H	H	H	
Toxic Organic Compounds	M/H	M/H	M/H	L	L/M	H	H	H	H	
Trash & Debris	L	L	H	H	H	H	H	L	H	
Bacteria & Viruses (also: Pathogens)	L	M	H	L	M	H	H	H	H	
Oil & Grease	M	M	H	M	H	H	H	H	H	
Heavy Metals	M	M/H	M/H	L/M	M	H	H	H	H	

Abbreviations:
L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency

Notes:

(1) Periodic performance assessment and updating of the guidance provided by this table may be necessary.

(2) Expected performance when designed in accordance with the most current edition of the document, "Riverside County, Whitewater River Region Stormwater Quality Best Management Practice Design Handbook".

(3) Performance dependent upon design which includes implementation of thick vegetative cover. Local water conservation and/or landscaping requirements should be considered; approval is based on the discretion of the local land use authority.

(4) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP (including proprietary filters, hydrodynamic separators, inserts, etc.), or newly developed/emerging stormwater treatment technologies.

(5) Expected performance should be based on evaluation of unit processes provided by BMP and available testing data. Approval is based on the discretion of the local land use authority.

(6) When used for primary treatment as opposed to pre-treatment, requires site-specific approval by the local land use authority.

V.1.A SITE DESIGN BMP CONCEPTS AND LID/SITE DESIGN BMPS

This section documents the Site Design BMP concepts and LID/Site Design BMPs that will be implemented on this project to comply with the requirements detailed in Section 3.5.1 of the WQMP Guidance document.

- Table 3 herein documents the implementation of the Site Design BMP Concepts described in sub-sections 3.5.1.3 and 3.5.1.4.
- Table 4 herein documents the extent to which this project has implemented the LID/Site Design goals described in sub-section 3.5.1.1.

Table 3. Implementation of Site Design BMP Concepts

Design Concept	Technique	Specific BMP	Included			Brief Reason for BMPs Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 1	**Minimize Urban Runoff, Minimize Impervious Footprint, and Conserve Natural Areas** **(See WQMP Section 3.5.1.3)**	Conserve natural areas by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	☐	☐	☒	The project is a "Small Development" and the whole site is being developed in compliance with City Land Use Regulations
		Conserve natural areas by incorporating the goals of the Multi-Species Habitat Conservation Plan or other natural resource plans.	☐	☐	☒	The project is a "Small Development" and the whole site is being developed in compliance with City Land Use Regulations
		Preserve natural drainage features and natural depressional storage areas on the site.	☐	☐	☒	There are no existing drainage features and natural depressional storage areas on the site.
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	☐	☐	☒	There are no existing native trees to preserve, however drought-tolerant species will be planted.
		Use natural drainage systems.	☒	☐	☐	An underground infiltration chamber system is proposed
		Where applicable, incorporate Self-Treating Areas	☒	☐	☐	
		Where applicable, incorporate Self-Retaining Areas	☐	☐	☒	Incorporated infiltration chamber enough to treat generated runoff.
		Increase the building floor to area ratio (i.e., number of stories above or below ground).	☐	☐	☒	
		Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.	☐	☐	☒	Existing Street Section.
		Reduce widths of streets where off-street parking is available.	☐	☐	☒	Existing Street Section.
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	☐	☐	☒	Incorporated Infiltration Basin BMP that is approved by the City
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☒	Incorporated Underground Infiltration Chamber BMP that is approved by the City

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Design residential and commercial sites to contain and infiltrate roof runoff, or direct roof runoff to landscaped swales or buffer areas.	☒	☐	☐	
		Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	☒	☐	☐	
		Incorporate landscaped buffer areas between sidewalks and streets.	☐	☐	☒	Existing Street Section
		Use natural or landscaped drainage swales in lieu of underground piping or imperviously lined swales.	☐	☒	☐	Incorporated Infiltration Basin
		Where soil conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	☐	☒	☐	Incorporated Infiltration Basin
		Maximize the permeable area by constructing walkways, trails, patios, overflow parking, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces such as pervious concrete, porous asphalt, unit pavers, and granular materials.	☐	☒	☐	Incorporated Infiltration Basin
		Use one or more of the following:				
		Rural swale system: street sheet flows to landscaped swale or gravel shoulder, curbs used at street corners, and culverts used under driveways and street crossings.	☐	☐	☒	Existing Street Section
		Urban curb/swale system: street slopes to curb; periodic swale inlets drain to landscaped swale or biofilter.	☐	☐	☒	Existing Street Section
		Dual drainage system: first flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to MS4s.	☐	☐	☒	Existing Street Section
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☒	Incorporated Infiltration Basin BMP that is approved by the City
		Use one or more of the following for design of driveways and private residential parking areas:				
		Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under the tires).	☐	☒	☐	Incorporated Infiltration Basin
		Uncovered temporary or guest parking on residential lots paved with a permeable surface, or designed to drain into landscaping.	☐	☒	☐	Incorporated Infiltration Basin

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included			Brief Reason for Each BMP Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 2 (cont'd)	**Minimize Directly Connected Impervious Area** **(See WQMP Section 3.5.1.4)**	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☒	☐	☐	Incorporated Infiltration Basin
		Use one or more of the following for design of parking areas:				
		Where landscaping is proposed in parking areas, incorporate parking area landscaping into the drainage design.	☐	☒	☐	Incorporated Infiltration Basin
		Overflow parking (parking stalls provided in excess of the Permittee's minimum parking requirements) may be constructed with permeable pavement.	☐	☒	☐	No overflow Parking
		Other comparable and equally effective Site Design BMP (or BMPs) as approved by the local land use authority (Note: Additional narrative required describing BMP and how it addresses site design concept).	☐	☐	☒	Incorporated Infiltration Basin

Project Site Design BMP Concepts:

Incorporated Infiltration Basin for 100% capture volume.

Alternative Project Site Design BMP Concepts:

N/A

Table 4. LID/Site Design BMPs Meeting the LID/Site Design Measurable Goal

(1) DRAINAGE SUB-AREA ID OR NO.	(2) LID/SITE DESIGN BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF LID/SITE DESIGN BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
DA 1	INFILTRATION BASIN	PATHOGENS	PATHOGENS	H/M	Vbmp	4.2
TOTAL PROJECT AREA TREATED WITH LID/SITE DESIGN BMPs (NEAREST 0.1 ACRE)						

*** LID/Site Design BMPs listed in this table are those that <u>completely</u> address the 'Treatment Control BMP requirement' for their drainage sub-area.**

Justification of infeasibility for sub-areas not addressed with LID/Site Design BMPs

N/A

V.1.B TREATMENT CONTROL BMPS

Conventional Treatment Control BMPs shall be implemented to address the project's Pollutants of Concern as required in WQMP Section 3.5.1 where, and to the extent that, Section V.1.A has demonstrated that it is infeasible to meet these requirements through implementation of LID/Site Design BMPs.

☒ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP completely address the 'Treatment Control BMP requirement' for the entire project site (and where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP Guidance document. Supporting documentation for the sizing of these LID/Site Design BMPs is included in Appendix F. ***Section V.1.B does not need to be completed**.

☐ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP do **NOT** completely address the 'Treatment Control BMP requirement' for the entire project site (or where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP. ***Section V.1.B must be completed.**

The Treatment Control BMPs identified in this section are selected, sized and implemented to treat the design criteria of V_{BMP} and/or Q_{BMP} for all project (and if required, existing site) drainage sub-areas which were not fully addressed using LID/Site Design BMPs. Supporting documentation for the sizing of these Treatment Control BMPs is included in Appendix F.

Table 5: Treatment Control BMP Summary

(1) DRAINAGE SUB-AREA ID OR NO.	(2) TREATMENT CONTROL BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF TREATMENT CONTROL BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
DA 1	INFILTRATION BASIN	PATHOGENS	PATHOGENS	H/M	Vbmp	1.36
	TOTAL PROJECT AREA TREATED WITH TREATMENT CONTROL BMPs (NEAREST 0.1 ACRE)					

V.1.C MEASURABLE GOAL SUMMARY

This section documents the extent to which this project has met the measurable goal described in WQMP Section 3.5.1.1 of addressing 100% of the project's 'Treatment Control BMP requirement' with LID/Site Design BMPs. Projects required to retain Urban Runoff onsite in conformance with local ordinance are considered to have met the measurable goal; for these instances, '100%' is entered into Column 3 of the Table.

Table 6: Measurable Goal Summary

(1) **Total Area Treated with <u>LID/Site Design</u> BMPs** **(Last row of Table 4)**	(2) **Total Area Treated with <u>Treatment Control</u> BMPs** **(Last row of Table 5)**	(3) **% of Treatment Control BMP Requirement addressed with LID/Site Design BMPs**
4.2	4.2	100

V.2 SOURCE CONTROL BMPS

This section identifies and describes the Source Control BMPs applicable and implemented on this project.

Table 7. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Non-Structural Source Control BMPs			
Education for Property Owners, Operators, Tenants, Occupants, or Employees	☒	☐	
Activity Restrictions	☒	☐	
Irrigation System and Landscape Maintenance	☒	☐	
Common Area Litter Control	☒	☐	
Street Sweeping Private Streets and Parking Lots	☒	☐	
Drainage Facility Inspection and Maintenance	☒	☐	
Structural Source Control BMPs			
Storm Drain Inlet Stenciling and Signage	☒	☐	
Landscape and Irrigation System Design	☒	☐	
Protect Slopes and Channels	☐	☒	No Slopes and channels
Provide Community Car Wash Racks	☐	☒	No Community Car Wash Racks
Properly Design*:			
Fueling Areas	☐	☒	Not a project feature
Air/Water Supply Area Drainage	☐	☒	Not a project feature
Trash Storage Areas	☒	☐	
Loading Docks	☐	☒	Not a project feature
Maintenance Bays	☐	☒	Not a project feature
Vehicle and Equipment Wash Areas	☐	☒	Not a project feature
Outdoor Material Storage Areas	☐	☒	Not a project feature
Outdoor Work Areas or Processing Areas	☐	☒	Not a project feature
Provide Wash Water Controls for Food Preparation Areas	☐	☒	Not a project feature

*Details demonstrating proper design must be included in Appendix F.

BMP	IMPLEMENTATION
Education Materials	Each employee will initially be provided with a copy of the included handouts.
Stenciling	The catch basins will be stenciled (prior to acceptance by city) with "NO DUMPING: DRAINS TO RIVER)
Landscape and irrigation design	Initial landscape design will include drought-tolerant species requiring limited irrigation. Irrigation systems will be designated as water-conservation type.
Common Area Litter Control	Standard on-going maintenance will control litter
Street Sweeping Private Streets and Parking Lots	Quarterly , driveways and parking lot sweeping will be implemented as needed
Drainage Facility Inspection and Maintenance	The drainage facilities will be inspected and maintained as part of standard landscaping maintenance

Appendix D includes copies of the educational materials (described in Section 3.5.2.1 of the WQMP Guidance document) that will be used in implementing this project-specific WQMP.

V.3 EQUIVALENT TREATMENT CONTROL BMP ALTERNATIVES

N/A

V.4 REGIONALLY-BASED BMPS

N/a

VI. Operation and Maintenance Responsibility for BMPs

Appendix G of this project-specific WQMP includes copies of CC&Rs, Covenant and Agreements, BMP Maintenance Agreement and/or other mechanisms used to ensure the ongoing operation, maintenance, funding, transfer and implementation of the project-specific WQMP requirements.

Operation and Maintenance:

Site Design BMPs	Action	Startup Date	Frequency
Conserve natural areas by concentrating or cluster development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Use natural drainage systems.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians is not compromised.	Routine landscape maintenance, including trash and debris removal	Upon installation of pavement and hardscape	Monthly
Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	Routine landscape maintenance, including trash and debris removal	Upon installation of pavement and	Monthly

		hardscape	
Commercial sites must be designed to contain and infiltrate roof runoff, or direct roof runoff to vegetative swales or buffer areas.	Inspect drainage around buildings and redirect as necessary to landscaped areas and vegetative swales.	Upon installation of landscaping	Monthly
Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	Inspect drainage around hardscape and redirect as necessary to landscaped areas and vegetative swales.	Upon installation of landscaping	Monthly
Incorporate landscaped buffer areas between sidewalks and streets.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Construct onsite ponding areas or detention facilities to increase opportunities for infiltration consistent with vector control objectives.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Incorporate tree well filters, flow-through planters, and/or bioretention areas into landscaping and drainage plans.	Routine landscape maintenance, including trash and debris removal, mowing (keep grass +/-6" high), and repair of irrigation system as needed	Upon installation of landscaping	Monthly
Source Control BMPs	Action		Frequency
Education of property owners/staff	Provide educational materials (see copies herein)	Upon site opening	Initial hire
Landscaping & protection of slopes and channels.	Standard landscaping maintenance activities, including trash removal, proper replacement of landscaping as needed, and regular trimming (see handouts in Attachment E)	Upon installation of landscaping	Monthly

Efficient irrigation	Standard maintenance activities (ensure no over-watering, minimize watering on hardscape)	Upon installation of landscaping	Monthly

Litter control and street sweeping	Standard landscape maintenance	Upon installation of pavement and hardscape	Weekly*
Trash storage areas	Standard landscape maintenance	Upon installation of trash area	Weekly*
Drainage Facility Inspection and Maintenance	Standard landscape maintenance	Upon installation of drain system	Quarterly*
Storm Drain Stenciling	Inspect all catch basins and inlets to ensure stenciling is legible.	Upon installation of drain system	Annually*
Treatment Control BMPs			
Infiltration Basin	Inspection and Maintenance activities shall include periodic mowing, weed control, watering during drought conditions, reseeding of bare areas, and clearing of debris and blockages. Accumulated sediment should be removed manually. The application of fertilizers and pesticides should be minimal. Operation and maintenance shall commence immediately after obtaining building occupancy	Upon installation of landscaping	Twice a year

VII. Funding

Funding for the on-going operation and maintenance of the project WQ BMPs will be incorporated into standard site landscaping maintenance paid by owners of private areas.

Funding source for the operation and maintenance of each BMP within the WQMP is listed below:
FARHAD ZOMORADI
P.O. BOX 10544
BEVERLY HILLS, CA. 91208
(310) 428-2875

Appendix A

Conditions of Approval

TO BE INCLUDED IN FINAL WQMPs

Planning Commission Resolution N/A

Appendix B

Vicinity Map, WQMP Site Plan, and Receiving Waters Map

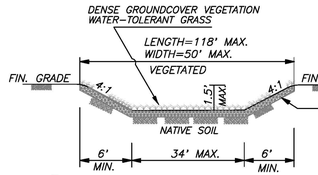
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

LEGEND:

- DENOTES CONCRETE AREA
- DENOTES PERVIOUS AREA
- DENOTES FUTURE BUILDING AREA
- DENOTES ASPHALT PAVING



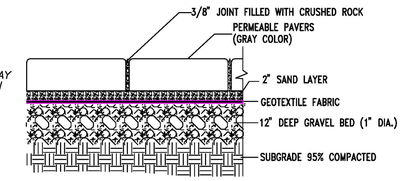
⑦ STORM DRAIN INLET STENCIL
N.T.S. SD-13



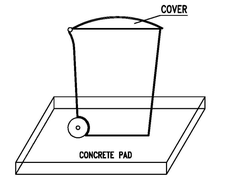
① INFILTRATION BASIN *(NOT TO SCALE)*
CAPACITY = 5,161 C.F.

BMP NOTES

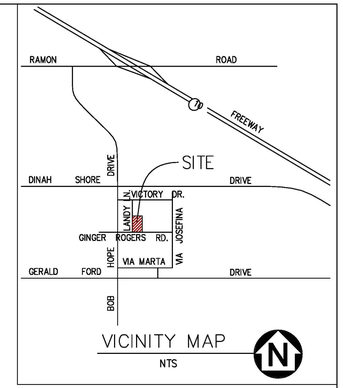
1. *TC-11, INFILTRATION BASIN*
2. *SD-12, EFFICIENT IRRIGATION*
3. *SD-10, SITE DESIGN AND LANDSCAPE PLANNING*
4. *SD-11, SPASH PAD, ROOF RUNOFF CONTROL*
5. *SD-21, ALTERNATIVE BUILDING MATERIALS*
6. *SD-32, TRASH STORAGE AREA*
7. *SD-13, STORM DRAIN SIGNAGE*
8. *MP-52, CATCH BASIN INSERT FILTER*



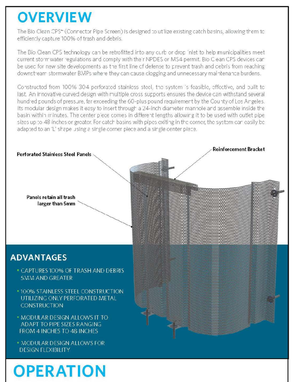
④ POROUS PAVER DETAIL, SD-11
ROOF RUNOFF SPLASH PAD (2'X3')



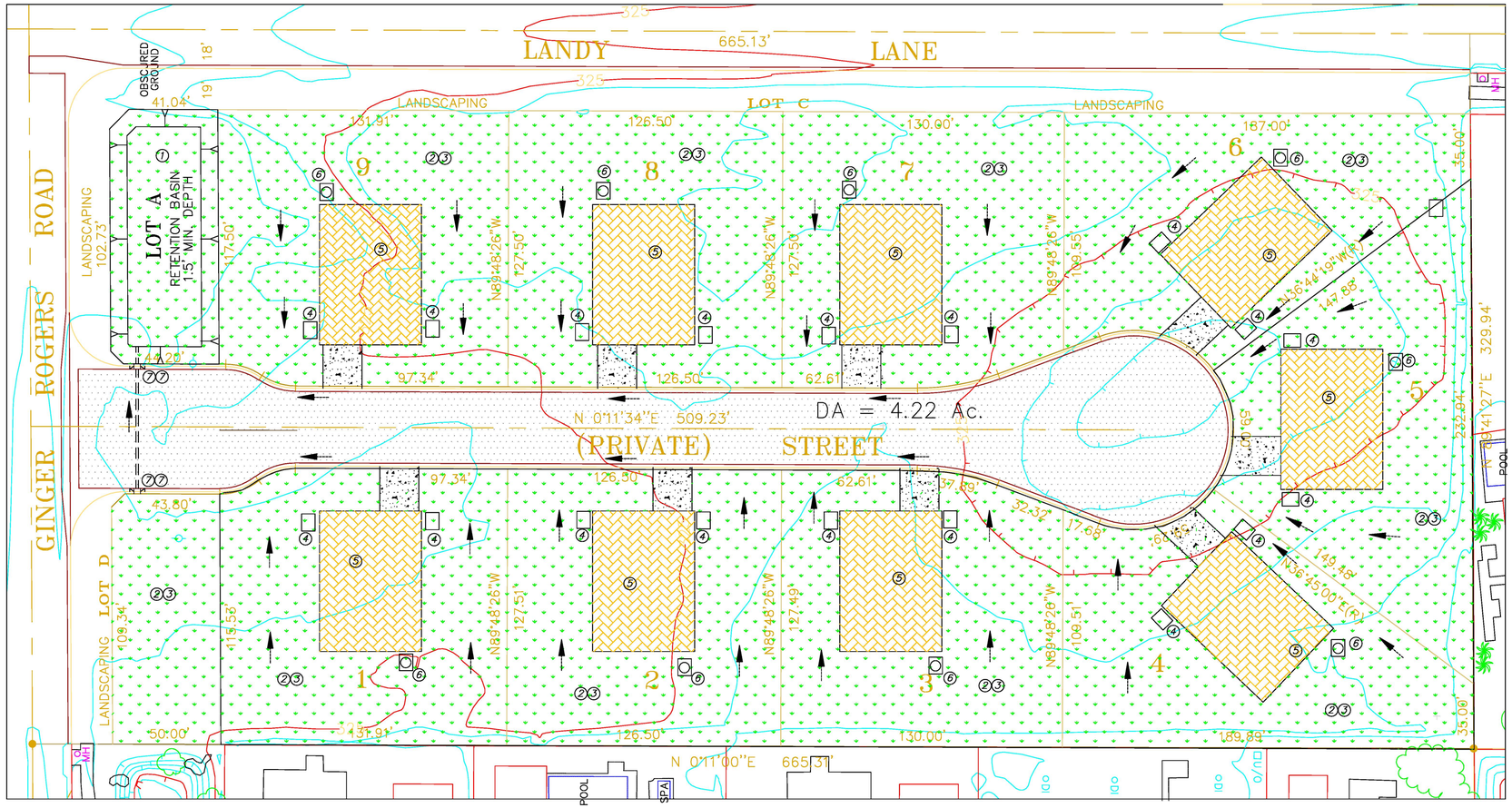
④ RESIDENTIAL TRASH STORAGE, SD-32
ON 3.5'X3.5' PCC PAD N.T.S.



VICINITY MAP
NTS



⑧ BIO-CLEAN CONNECTOR PIPE SCREEN
N.T.S.



GRAPHIC SCALE 1"=30'
30 0 30 60 90

S.D. ENGINEERING AND ASSOCIATES
LAND PLANNING AND CIVIL ENGINEERING
242 E. AIRPORT DRIVE, STE. 212 – SAN BERNARDINO, CA 92408
PHONE (909) 215-3451 EMAIL: suresh@sdengineering.net

SURESH DODDIAH R.C.E. 36361 DATE

REGISTERED PROFESSIONAL ENGINEER
SURESH DODDIAH
NO. 36361
EXP. 6-30-24
CIVIL
STATE OF CALIFORNIA

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TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH CONDITIONS AND STANDARDS IN EFFECT.

BENCHMARK: CITY BM #PD 18-5

BEING A 1-1/2" COPPERWELD IN ASPHALT, FLUSH, AT THE CENTERLINE INTERSECTION OF BOB HOPE DRIVE AND DINAH SHORE DRIVE.

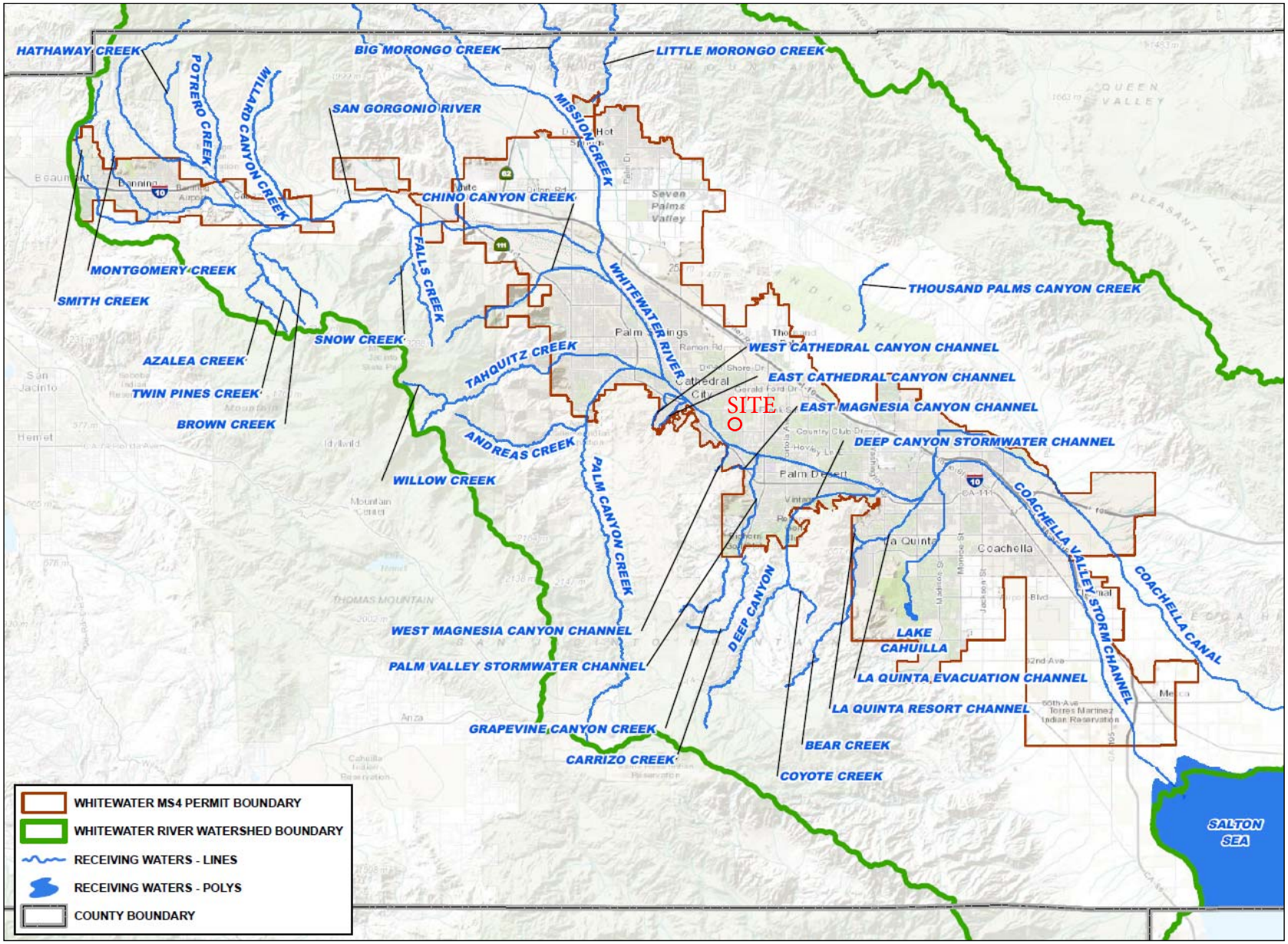
ELEV. = 347.672

CITY OF RANCHO MIRAGE, CALIFORNIA
PRELIMINARY WQMP SITE MAP

DRAWN BY: EB	TENTATIVE TRACT MAP NO. 38636	SCALE: 1"=20'
DESIGNED BY: EB	72094 GINGER ROGERS ROAD	DATE: 4/28/23
CHECKED BY: SD		DRAWING NO.: 1 / 1

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Figure 2. Whitewater River Region Receiving Waters Map



Appendix C

Supporting Detail Related to Hydrologic Conditions of Concern

Not Applicable

Appendix D

Educational Materials

TO BE INCLUDED IN FINAL WQMPs

Appendix E

Soils Report

Project No. 23-0102-Inf
March 04, 2023

Sampson and Associates

CONSULTING ENGINEERS
Soil, Geology, Environmental

TO: **Mr. Farhad Zomorodi**
9165 Alcott, #203
Los Angeles, Ca.

SUBJECT: Infiltration Evaluation, New Single-Family Residences On TTM No. 38636 In The City of Rancho Mirage, California.

INTRODUCTION:

We sincerely appreciate the opportunity to be of service to you on this project. The primary objective of this study was to evaluate an infiltration rate of the onsite subsurface soils for the design of the infiltration drainage system to be constructed at designated area for the above subject site.

If you have any questions regarding this report please do not hesitate to contact this office at your convenience. We appreciate the opportunity to be of service on this project.

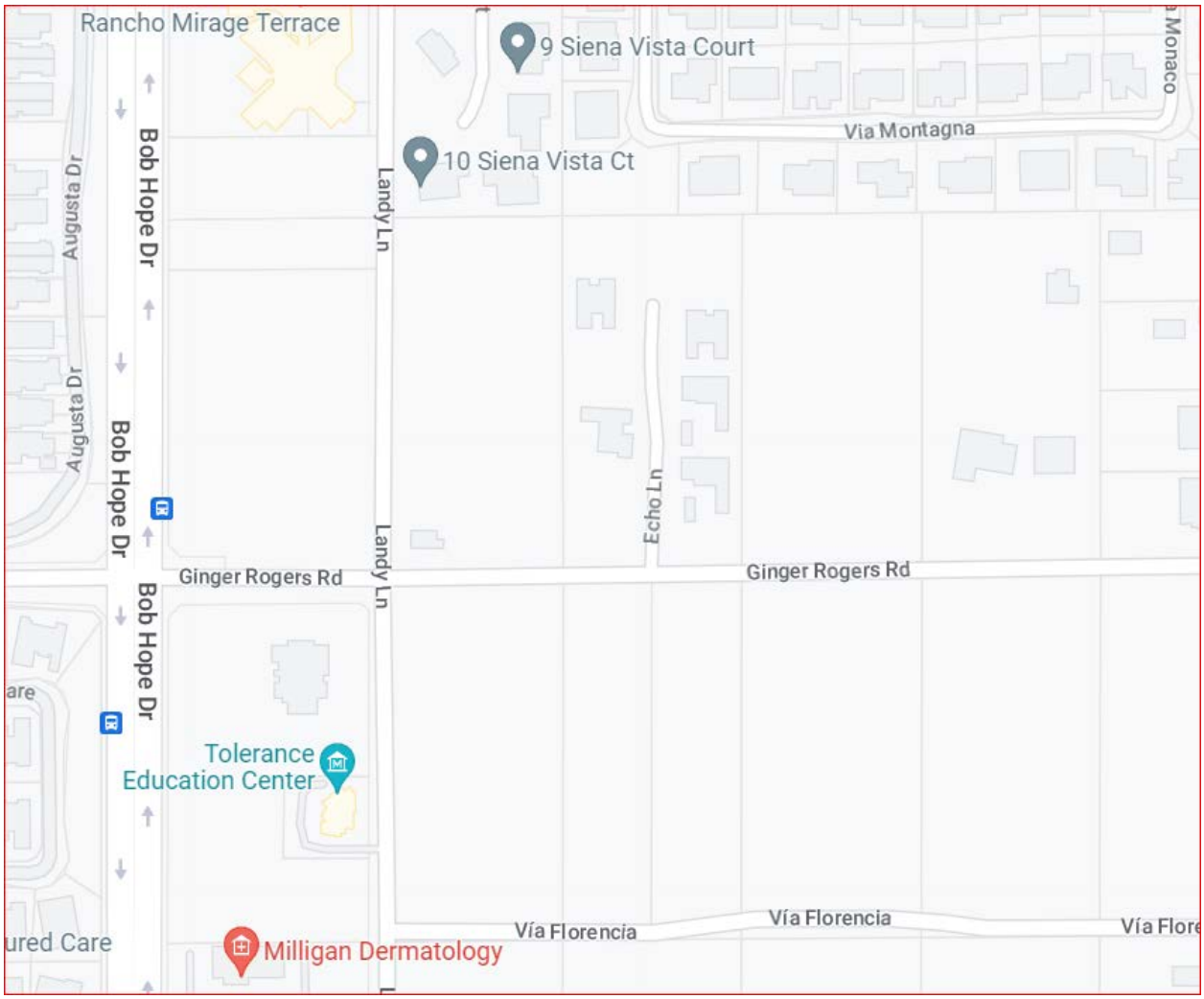
Respectfully Submitted;
Sampson and Associates

M. E. Samiee MS, Calif. RCE 46172
MS/db
Distribution: (4) Addressee

REGISTERED PROFESSIONAL ENGINEER
M. E. SAMIEE
C46172
Exp. 12/31/24
CIVIL
STATE OF CALIFORNIA

P. O. Box 834, San Dimas, California 91773 Tel.: (909) 522-7067
E-Mail: sampsongeotechnical@gmail.com

Project No. 23-0102-Inf
March 04, 2023



Index Map

Of

TTM No.: 3863
City of Rancho Mirage, California

ACCOMPANYING MAPS & ILLUSTRATIONS,:

Index Map - Page 2
Plate 1 - Site Plan and Approximate Location of Infiltration Tests
Appendix "A" - Field Test Logs

SITE LOCATION, PROPOSED DEVELOPMENT, and CONDITION:

The proposed development consists of (5) single-family residences with associated parking spaces located on north-east corner of Landy Lane and Ginger Rogers Road, TTM No. 3863 in the City of Rancho Mirage, California. Access to the site is available via improved Ginger Rodgers Road. The site is occupied with a small residence located on south side of the lot which is proposed to be completely demolished becoming part of new development.

The subject site is flat regular rectangular shape lot bounded by Ginger Rodgers Road on south, by Landy Lane on west, and by developed residential properties on east and north.

Project is covered with native weeds and large bushes. Drainage onsite is uncontrolled by sheet flow towards south.

SUBSURFACE INVESTIGATION:

To evaluate the subsurface condition of the subject sites, Five (5) exploratory Borings were drilled to maximum depths of (7) feet as shown on Plate-1. The excavations were then backfilled. The test Pits were logged and sampled. Bulk and relatively undisturbed samples were collected for proper laboratory testing.

SUBSURFACE CONDITIONS:

Soil materials encountered in our borings consisted loose fine sand deposit deposited by prevailing winds, sand and gravel of the valley area. The approximately 24 inches of loose to very loose and dry light greyish alluvial sand with fine silt and gravel of major creeks and stream washes material underlain by loose and dry light greyish sandy fine silt soils to dense and moist sandy silty soils within the depth of our borings.

GROUND WATER:

No ground water or any perched ground water was observed at our test locations onsite during the course of our investigation.

DOUBLE RING INFILTRATION TEST:

One (I) excavation was dug by hand, to a depth of about one (4) foot below existing grade at the approximate locations of the proposed infiltration drainage system of the site in the area identified by the project civil engineer as being the area to be used for infiltration purposes. Infiltration testing was completed using a double ring infiltrometer device into the ground, water was supplied with a constant falling head condition to a fixed point. A representative from our firm conducted the actual infiltration testing to record how much of water infiltrates into the soil over a given time period.

The incremental infiltration velocity within the inner test cylinder is equivalent to the infiltration rate (in/hr). The slowest/most conservative infiltration rate of **4.5 inches per hour** was measured for the test hole, after the infiltration rate had generally stabilized. The testing was completed in general conformance with ASTM D 3385.

FACTOR OF SAFETY:

The infiltration rates presented are based on field test results, the rates presented are measured field rates and should not be considered design infiltration rates. The designer should consider possible site variability in their design. Application of an appropriate safety factor may be required by the authorizing agency. The design engineer must use the factor of safety with the lowest average measured infiltration rate to achieve the design value as needed. The infiltration rate is approximately 4.5 in/hr.

RECOMMENDATIONS:

Bases on the result of the tests, the site is suitable for the storm-water infiltration system from a geotechnical viewpoint. Recommendations are provided as follows:

- Based on our testing water infiltration at the site is feasible. Filter fabric should be used whenever aggregate are placed against native soils. The infiltration rates are as follow:
  Test # 1 Infiltration Rate @ 4 feet depth = 6.43 in/hr.
  Test # 2 Infiltration Rate @ 4 feet depth = 6.26 in/hr.
  Test # 3 Infiltration Rate @ 6 feet depth = 4.5 in/hr. ← Use This Rate

- Infiltration water should not be allowed to saturate pavement and concrete structure sub-grade soils.
- The planned infiltration system should extend vertically into native soils. The designer should review the attached geotechnical Log for soils classification.
- The soils in infiltration area should not be subject to compaction during construction.
- The proposed system designed by Civil Engineer should be constructed and maintained in accordance with manufacture guidelines.
- Infiltration facilities must not be blocked by heavy equipment by using the infiltration area as a sediment trap.

- Infiltration facilities should be constructed late in the site development after soils has been stabilized or should be protected by flagging until work is completed.
- A minimum distance of 10 feet in any directions shall be provided from the building foundation to the proposed stormwater infiltration system.
- The potential for creating perched water conditions that may adversely affect the proposed and existing structures is nil due to the onsite permeable soils.
- The subsurface soil will not exhibit instability as a result of implementing the proposed BMP's.
- There will be no geotechnical hazards posed to the proposed and existing structures on and adjacent to the site, if a minimum distance of 10 feet in any directions provided from the building foundations to the proposed stormwater infiltration system.
- It must be noted that over the lifetime of the disposal area the infiltration rate may be affected by sediment build ups and biological activities as well as local variation in soils subsurface condition.
- Ferrous metal pipes should be protected from potential corrosion by bituminous coating, etc. We recommend that all utility pipes be nonmetallic and/or corrosion resistance. Recommendation should be verified by soluble sulfate and corrosion testing of soils samples obtained from specific locations during construction.

LIMITATONS:

Based on our visual observation it appears that the soils condition to be the same throughout the site however; soils material may vary in character between excavations and natural outcrops or conditions exposed during construction. Should soil conditions be encountered during construction that appear different this office must be notified immediately so that our recommendations may be re-evaluated.

Project No. 23-0102-Inf
March 04, 2023

A P P E N D I X "A"

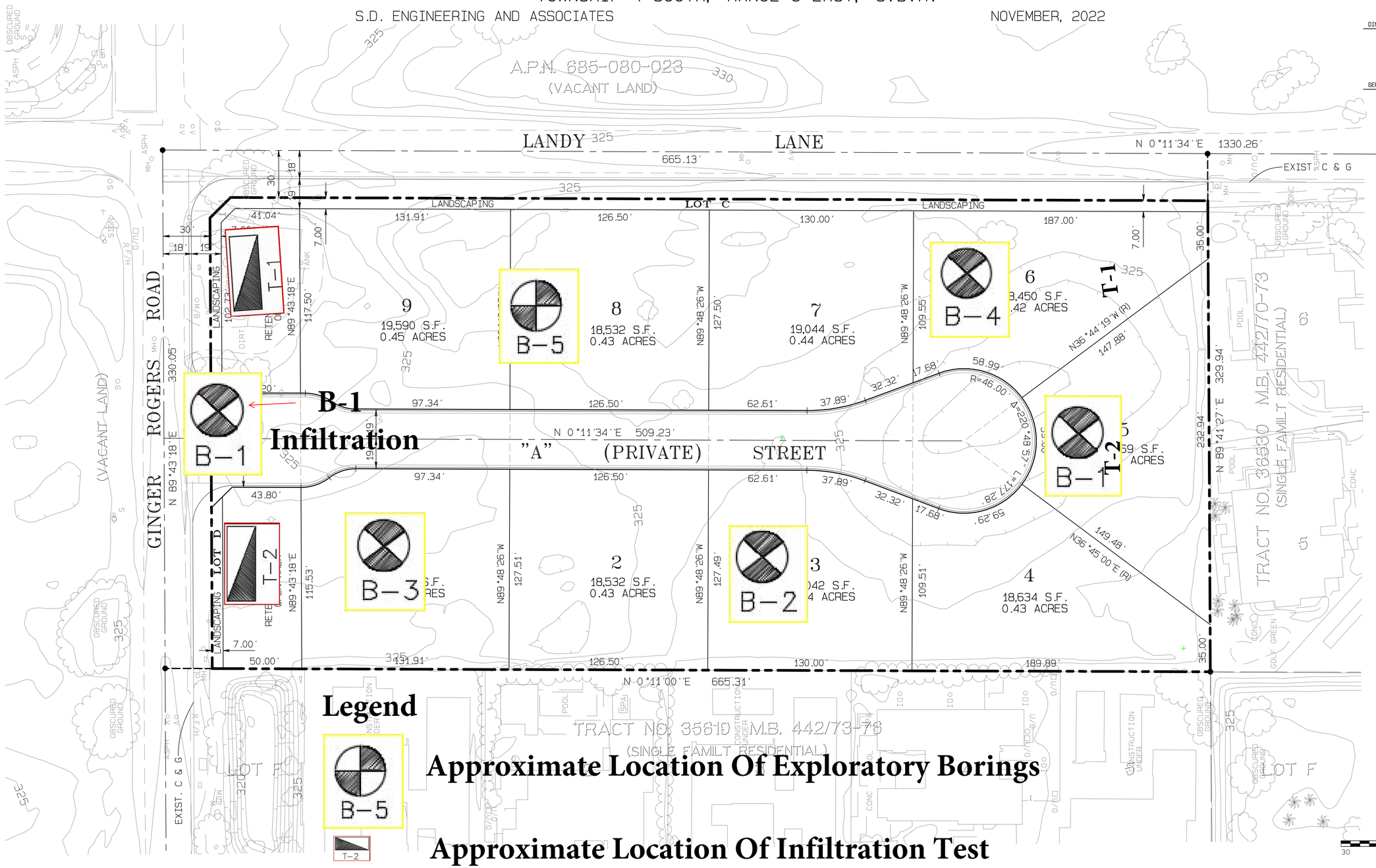
IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP NO. 38636

BEING A SUBDIVISION OF GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B.M.

S.D. ENGINEERING AND ASSOCIATES — NOVEMBER, 2022

Plate-1



B-1
Infiltration

Legend

Approximate Location Of Exploratory Borings

Approximate Location Of Infiltration Test

1. OWNER/SUBDIVIDER

72094 GINGER ROGERS LLC
ATTN: MR. FARHAD ZOMORADI
P.O. BOX 10544
BEVERLY HILLS, CA 90213
PH: (310) 428-2875

2. ENGINEER

S.D. ENGINEERING AND ASSOCIATES
242 E. AIRPORT DRIVE, STE. 212
SAN BERNARDINO, CA 92408
ATTN: MR. SURESH DODDIAH
PH: (909) 215-3451

3. LEGAL DESCRIPTION

GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B. & M.

4. ASSESSORS PARCEL NO:

685-080-002

5. ZONING

EXISTING AND PROPOSED:
VERY LOW DENSITY RESIDENTIAL (R-L-2)

6. ACREAGE

4.37 ACRES

7. LETTER LOT AREAS

LOT A = 5,758 S.F. (0.13 AC.)
LOT B = 5,818 S.F. (0.13 AC.)
LOT C = 5,158 S.F. (0.12 AC.)
LOT D = 741 S.F. (0.02 AC.)

S.D. ENGINEERING AND ASSOCIATES
LAND PLANNING AND CIVIL ENGINEERING
242 E. AIRPORT DRIVE, STE. 212 - SAN BERNARDINO, CA 92408
PHONE (909) 215-3451 EMAIL: suresh@sdengineering.net

SURESH DODDIAH R.C.E. 36361 DATE

REGISTERED PROFESSIONAL ENGINEER — SURESH DODDIAH — NO. 36361 EXP. 6-30-24 — CIVIL — STATE OF CALIFORNIA

DIGALERT
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TWO WORKING DAYS BEFORE YOU DIG
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH CONDITIONS AND STANDARDS IN EFFECT.

BENCHMARK: CITY BM #PD 18-5

BEING A 1-1/2" COPPERWELD IN ASPHALT, FLUSH, AT THE CENTERLINE INTERSECTION OF BOB HOPE DRIVE AND DINAH SHORE DRIVE.

ELEV. = 347.672

CITY OF RANCHO MIRAGE, CALIFORNIA

DRAWN BY: EB	TENTATIVE TRACT MAP NO. 38636	SCALE: 1"=20'
DESIGNED BY: EB	72094 GINGER ROGERS ROAD	DATE: 12/5/2022
CHECKED BY: SD		DRAWING NO: 1/1

DOUBLE RING INFILTROMETER TEST DATA

Project Name and Test Location:				Constants-	Ring Data		Liquid Containers	
Rancho Mirage					Area, A_r (in^2)	Depth of Liquid (in)	No.	Vol., V_r (in3/in)
				Inner Ring:	113	4	1	78.54
Test By:	FDC	USCS Class:	SM	Annular Space:	339	4.1	2	176.7
Water Table Depth:	50'	Penetration of Rings into Soil (in.):			Inner:	3 Inch	Outer:	7 Inch
Date of Test:	3/01/23	Liquid Used:	Water	pH: 7.3	Ground Temp (°F):	61	at Depth:	4'
Liquid Level Maintained by using:	( ) Flow Valve ( ) Float Valve ( ) Marriotte Tube ( ) Other:							
Additional Comments:	Depth Below Surface = 4'							

Time interval	Time (hr:min)	Dt (min) & Total	Inner Ring Elev., H (In)	Inner Ring ΔH (in) &	Annular Ring Elev., H (In)	Annular Ring ΔH (in) &	Liquid Temp °F	Infiltration Rate, I** Inner in/hr	Infiltration Rate, I** Outer in/hr	Remarks
1 - Start	7:15	5	2.00	2.25	1.00	3.25	57.00	18.77	20.22	
End	7:20	5	4.25	176.72	4.25	574.28	57.00			
2 - Start	7:20	10	4.25	4.00	4.25	5.50	57.00	16.68	17.20	
End	7:30	15	8.25	314.16	9.75	971.85	57.00			
3 - Start	7:30	15	8.25	3.75	9.75	5.25	57.00	10.43	19.95	
End	7:45	30	12.0	294.53	15.00	927.68	57.00			
4 - Start	7:45	30	1.0	7.0	1.00	5.50	58.00	9.73	5.73	Refilled Tube
End	8:15	60	8.0	549.76	6.50	971.85	60.00			
5 - Start	8:15	30	1.0	6.0	6.50	8.00	60.00	8.34	8,34	Refilled Tube
End	9:15	90	7.00	471.24	14.50	1413.60	61.00			
6 - Start	9:15	60	1.0	11.0	1.00	11.00	61.00	7.65	5.73	Refilled Tube
End	10:15	150	12.00	863.94	12.00	1943.70	62.00			
7 - Start	10:15	60	0.50	10.50	1.00	11.00	62.--	7.30	5.73	Refilled Tube
End	11:15	180	11.0	824.67	12.00	1943.70	63.00			
8 - Start	11:15	60	1.0	9.25	1.00	10.26	63.00	6.43	5.34	Refilled Tube
End	12:15	240	10.25	726.50	11.25	1811.18	63.00			
9 - Start	12:15	60	1.00	9.25	1.00	10.00	64.00	6.43	5.21	Refilled Tube
End	1:15	300	10.25	726.50	11.00	1767.00	64.00			
10 - Start	1:15	60	1.00	9.25	1.00	10.00	64.00	6.43	5.21	Refilled Tube
End	2:15	360	10.25	726.50	11.0	1767.00	64.00			
11 - Start								Use 4.5 In/hr		
End										
12 - Start										
End										
13 - Start										
End										
14 - Start										
End										
15 - Start										
End										

***Flow, Qf = ΔH x Vr **Infiltration Rate, I = (Qf/Ar)/Δt**

Table 3 – Sample Test Data Form for Double Ring Infiltrometer Test

B-Bbbbbbb1

Project No. 23-0102-Inf
March 04, 2023

DOUBLE RING INFILTROMETER TEST DATA

Project Name & Test Location: Rancho Mirage			Infiltration Constants				Ring Data		Liquid Containers	
							Area, Ar (in2)	Depth of Liquid (in)	No.	Vol., Vr (in3/in)
						Inner Ring :	113	4	1	78.54
Test By:	FDC	USCS Class:				Annular Ring :	339	4.1	2	176.7
Water Table Depth:		50 ft.	Penetration of Rings into Soil (in.):				Inner:	3 in	Outter:	7 in
Date of Test:	3/1/23	Liquid Use	Water	pH:	7.5	Gound Temp (˚F):		58	at Depth:	4'
Liquid Level Maintained by using:			( ) Flow Valve ( ) Float Valve (X) Marriotte Tube ( ) Other:							
Additional Comments:			Depth Below Surface = 4'							

Time Interval	Time (hr:min)	Δt (min) & Total	Inner Ring		Annular Ring		Liquid Temp ˚F	Infiltration Rate, I**		Remarks
			Elev., H (in)	ΔH (in) &	Elev., H (in)	ΔH (in) &		inner in/hr	Outer in/hr	
1 - Start	14:00	5	0.75	2.00	1.00	2.75	58.00	16.68	17.20	
End	14:05	5	2.75	157.08	3.75	485.93	58.00			
2 - Start	14:05	10	2.75	3.75	3.75	5.25	59.00	15.64	16.42	
End	14:15	15	6.50	294.53	9.00	927.68	59.00			
3 - Start	14:15	15	6.50	5.25	9.00	7.00	60.00	14.60	14.59	
End	14:30	30	11.75	412.34	16.00	1236.90	60.00			
4 - Start	14:30	30	2.00	9.00	1.50	12.25	60.00	12.51	12.77	
End	15:00	60	11.00	706.86	13.75	2164.58	60.00			Refilled Tubes
5 - Start	15:00	30	1.00	8.75	2.00	12.25	60.00	12.16	12.77	
End	15:30	90	9.75	687.23	14.25	2164.58	61.00			Refilled Tubes
6 - Start	15:30	30	0.50	8.00	1.50	11.75	61.00	11.12	12.25	
End	16:00	120	8.50	628.32	13.25	2076.23	62.00			Refilled Tubes
7 - Start	16:00	30	8.50	6.50	1.00	10.00	62.00	9.04	10.42	
End	16:30	150	15.00	510.51	11.00	1767.00	63.00			
8 - Start	16:30	30	1.00	6.25	0.00	8.50	63.00	8.69	8.86	
End	16:30	180	7.25	490.88	8.50	1501.95	63.00			Refilled Tubes
9 - Start	16:30	30	7.25	5.75	8.50	7.50	63.00	7.99	7.82	
End	17:00	210	13.00	451.61	16.00	1325.25	64.00			
10 - Start	17:00	30	1.00	4.75	1.00	6.75	64.00	6.60	7.04	
End	17:30	240	5.75	373.07	7.75	1192.73	64.00			Refilled Tubes
11 - Start	17:30	30	5.75	4.50	7.75	6.25	65.00	6.26	6.52	
End	18:00	270	10.25	353.43	14.00	1104.38	65.00			
12 - Start	18:00	30	1.00	4.50	2.50	6.50	64.00	6.26	6.78	
End	18:30	300	5.50	353.43	9.00	1148.55	64.00			Refilled Tubes
13 - Start	18:30	30	5.50	4.50	9.00	6.50	63.00	6.26	6.78	
End	19:00	330	10.00	353.43	15.50	1148.55	63.00			
14 - Start								Use 4.5 in/hr		
End										
15 - Start										
End										

Project No. 23-0102-Inf
March 04, 2023

INFILTRATION TESTING FIELD LOG

Boring/Excavation Percolation Testing Field Log Date: 03/01/23

Project Location Rancho Mirage
Earth Description: Silty Gravelly Fine Sand w/cobbles
Tested by: TB/MS

Liquid Description: Tap Water

Boring/test Number: B-1
Diameter of Boring: 8-inch
Depth of Boring: 4' below grade
Depth to Invert of BMP's: 4' below grade
Depth to Water Table: ~~>50'~~

Time Interval Standard:

Start Date for Pre-Soak: 3/01/2023
Start Time for Standard: 11:00

Water Remaining In Boring (Y/N): Yes
Standard Time Interval Between Readings: 30 Minutes

Measurement Method: Measuring Tape
Depth to initial water Depth(d1): 96"

Reading Number	Time Start/End (hh:mm)	Elapsed Time △Time (mins)	Water Drop During Standard Time Interval △D (inches)	Percolation Rate for Reading (in/hr)	Soil Description/Notes/Comments
1	11:00 11:30	30	5.75	11.50	Medium to Coarse, Silty Gravelly Fine Sand
2	12:00 12:30	30	4.25	8.50	
3	13:00 13:30	30	4.0	8.0	
4	14:00 14:30	30	2.25	4.50	
5	15:00 15:305	30	2.25	4.50	
			Infiltration Rate	4.50 In/Hr.	**Use 4.5 In/Hr.**

Appendix F

Structural BMP and/or Retention Facility Sizing Calculations
and Design Details

Whitewater Watershed

BMP Design Volume, V_{BMP} (Rev. 06-2014)

Legend: Required Entries / Calculated Cells

Company Name	SD Engineering ans Associates	Date	4/28/2023
Designed by	Suresh	County/City Case No	
Company Project Number/Name	TTM 38636		
Drainage Area Number/Name	DA 1		

Enter the Area Tributary to this Feature (A_{TRIB}) A_{TRIB} = 4.22 acres

Determine the Impervious Area Ratio

Determine the Impervious Area within A_{TRIB} (A_{IMP}) A_{IMP} = 1.68 acres

Calculate Impervious Area Ratio (I_f) I_f = 0.40

$I_f = A_{IMP}/A_{TRIB}$

Calculate the composite Runoff Coefficient, C for the BMP Tributary Area

Use the following equation based on the WEF/ASCE Method

$C_{BMP} = 0.858I_f^3 - 0.78I_f^2 + 0.774I_f + 0.04$ C_{BMP} = 0.28

Determine Design Storage Volume, V_{BMP}

Calculate V_U, the 80% Unit Storage Volume $V_U = 0.40 \times C_{BMP}$ V_u = 0.11 (in*ac)/ac

Calculate the design storage volume of the BMP, V_{BMP}.

$$V_{BMP}\ (ft^3) = \frac{V_U\ (in\text{-}ac/ac) \times A_T\ (ac) \times 43{,}560\ (ft^2/ac)}{12\ (in/ft)}$$

V_{BMP} = 1,685 ft^3

Notes:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID	Legend:	Required Entries / Calculated Cells

Company Name: 72094 Ginger Rogers Lane — Date: 4/28/2023

Designed by: — County/City Case No.: Rancho Mirag

Design Volume

a) Tributary area (BMP subarea)	A_T =	4.22	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,685	ft^3

Maximum Depth

a) Infiltration rate	I =	4.5	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	2	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	13.5	ft
d) Enter the depth of freeboard (at least 1 ft)		1	ft
e) Enter depth to historic high ground water (measured from **top** of basin)		200	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		70	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	64.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	13.5	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	1.5	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	1123	ft^2
d) Proposed Design Surface Area	A_D =	3441	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	8	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1	ft
c) Forebay surface area (minimum)	Area =	8	ft^2
d) Full height notch-type weir	Width (W) =	12.0	in

Notes:

NOAA Atlas 14, Volume 6, Version 2
Location name: Rancho Mirage, California, USA*
Latitude: 33.7948°, Longitude: -116.4041°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.061** (0.050-0.073)	**0.094** (0.078-0.114)	**0.145** (0.120-0.176)	**0.193** (0.159-0.236)	**0.269** (0.214-0.342)	**0.338** (0.263-0.438)	**0.418** (0.318-0.556)	**0.513** (0.379-0.702)	**0.666** (0.471-0.951)	**0.841** (0.575-1.24)
10-min	**0.087** (0.072-0.105)	**0.134** (0.112-0.163)	**0.208** (0.172-0.253)	**0.276** (0.227-0.339)	**0.386** (0.307-0.490)	**0.484** (0.377-0.628)	**0.599** (0.455-0.797)	**0.735** (0.543-1.01)	**0.955** (0.676-1.36)	**1.21** (0.824-1.78)
15-min	**0.105** (0.088-0.127)	**0.163** (0.135-0.197)	**0.251** (0.208-0.305)	**0.334** (0.275-0.410)	**0.466** (0.371-0.592)	**0.586** (0.456-0.760)	**0.725** (0.551-0.964)	**0.889** (0.656-1.22)	**1.16** (0.817-1.65)	**1.46** (0.996-2.16)
30-min	**0.164** (0.136-0.198)	**0.253** (0.211-0.307)	**0.391** (0.325-0.476)	**0.521** (0.428-0.639)	**0.727** (0.578-0.923)	**0.913** (0.711-1.18)	**1.13** (0.858-1.50)	**1.39** (1.02-1.90)	**1.80** (1.27-2.57)	**2.27** (1.55-3.36)
60-min	**0.239** (0.199-0.289)	**0.370** (0.308-0.448)	**0.571** (0.474-0.694)	**0.759** (0.625-0.932)	**1.06** (0.844-1.35)	**1.33** (1.04-1.73)	**1.65** (1.25-2.19)	**2.02** (1.49-2.77)	**2.63** (1.86-3.75)	**3.32** (2.27-4.90)
2-hr	**0.340** (0.283-0.411)	**0.515** (0.429-0.625)	**0.776** (0.644-0.945)	**1.01** (0.836-1.25)	**1.38** (1.10-1.76)	**1.71** (1.33-2.21)	**2.07** (1.57-2.75)	**2.49** (1.84-3.40)	**3.13** (2.21-4.47)	**3.71** (2.53-5.48)
3-hr	**0.409** (0.341-0.495)	**0.616** (0.512-0.747)	**0.920** (0.764-1.12)	**1.20** (0.984-1.47)	**1.62** (1.29-2.05)	**1.98** (1.54-2.56)	**2.38** (1.81-3.17)	**2.84** (2.10-3.89)	**3.53** (2.50-5.04)	**4.14** (2.83-6.13)
6-hr	**0.557** (0.464-0.675)	**0.837** (0.697-1.02)	**1.24** (1.03-1.51)	**1.61** (1.32-1.97)	**2.15** (1.71-2.73)	**2.62** (2.04-3.39)	**3.13** (2.38-4.16)	**3.70** (2.73-5.07)	**4.57** (3.23-6.52)	**5.30** (3.62-7.84)
12-hr	**0.667** (0.556-0.809)	**1.02** (0.846-1.23)	**1.52** (1.26-1.85)	**1.98** (1.63-2.42)	**2.65** (2.11-3.37)	**3.23** (2.52-4.19)	**3.87** (2.94-5.15)	**4.59** (3.39-6.28)	**5.66** (4.00-8.08)	**6.58** (4.49-9.73)
24-hr	**0.779** (0.690-0.898)	**1.21** (1.07-1.40)	**1.83** (1.62-2.12)	**2.39** (2.09-2.79)	**3.23** (2.74-3.89)	**3.94** (3.27-4.85)	**4.73** (3.84-5.96)	**5.62** (4.44-7.27)	**6.96** (5.28-9.36)	**8.11** (5.95-11.3)
2-day	**0.862** (0.763-0.994)	**1.35** (1.20-1.56)	**2.06** (1.82-2.39)	**2.69** (2.35-3.14)	**3.63** (3.08-4.37)	**4.42** (3.67-5.44)	**5.30** (4.30-6.66)	**6.27** (4.95-8.11)	**7.73** (5.86-10.4)	**8.97** (6.58-12.5)
3-day	**0.903** (0.799-1.04)	**1.42** (1.26-1.64)	**2.17** (1.92-2.52)	**2.84** (2.48-3.31)	**3.83** (3.24-4.61)	**4.66** (3.87-5.73)	**5.58** (4.52-7.02)	**6.60** (5.21-8.53)	**8.12** (6.15-10.9)	**9.41** (6.90-13.1)
4-day	**0.930** (0.823-1.07)	**1.47** (1.30-1.70)	**2.25** (1.99-2.61)	**2.94** (2.57-3.43)	**3.97** (3.36-4.78)	**4.83** (4.01-5.94)	**5.78** (4.69-7.27)	**6.83** (5.39-8.83)	**8.40** (6.37-11.3)	**9.72** (7.13-13.5)
7-day	**0.992** (0.878-1.14)	**1.58** (1.40-1.83)	**2.43** (2.15-2.82)	**3.19** (2.79-3.72)	**4.30** (3.64-5.18)	**5.24** (4.35-6.43)	**6.26** (5.07-7.87)	**7.39** (5.83-9.55)	**9.06** (6.87-12.2)	**10.5** (7.68-14.6)
10-day	**1.04** (0.922-1.20)	**1.67** (1.48-1.93)	**2.57** (2.27-2.98)	**3.37** (2.95-3.93)	**4.56** (3.86-5.49)	**5.55** (4.61-6.82)	**6.64** (5.38-8.35)	**7.84** (6.19-10.1)	**9.61** (7.29-12.9)	**11.1** (8.14-15.4)
20-day	**1.13** (1.00-1.30)	**1.83** (1.61-2.11)	**2.84** (2.50-3.28)	**3.73** (3.26-4.35)	**5.07** (4.29-6.10)	**6.19** (5.14-7.60)	**7.41** (6.01-9.33)	**8.77** (6.92-11.3)	**10.8** (8.16-14.5)	**12.4** (9.12-17.3)
30-day	**1.26** (1.11-1.45)	**2.04** (1.80-2.35)	**3.18** (2.80-3.68)	**4.19** (3.67-4.89)	**5.72** (4.84-6.88)	**7.00** (5.81-8.60)	**8.40** (6.81-10.6)	**9.95** (7.85-12.9)	**12.2** (9.27-16.5)	**14.1** (10.4-19.7)
45-day	**1.37** (1.21-1.57)	**2.22** (1.96-2.56)	**3.48** (3.07-4.03)	**4.61** (4.04-5.38)	**6.32** (5.36-7.61)	**7.77** (6.45-9.55)	**9.35** (7.59-11.8)	**11.1** (8.77-14.4)	**13.7** (10.4-18.4)	**15.8** (11.6-22.0)
60-day	**1.49** (1.32-1.71)	**2.42** (2.14-2.79)	**3.80** (3.35-4.39)	**5.04** (4.41-5.88)	**6.93** (5.87-8.34)	**8.54** (7.09-10.5)	**10.3** (8.36-13.0)	**12.3** (9.67-15.8)	**15.1** (11.5-20.4)	**17.6** (12.9-24.4)

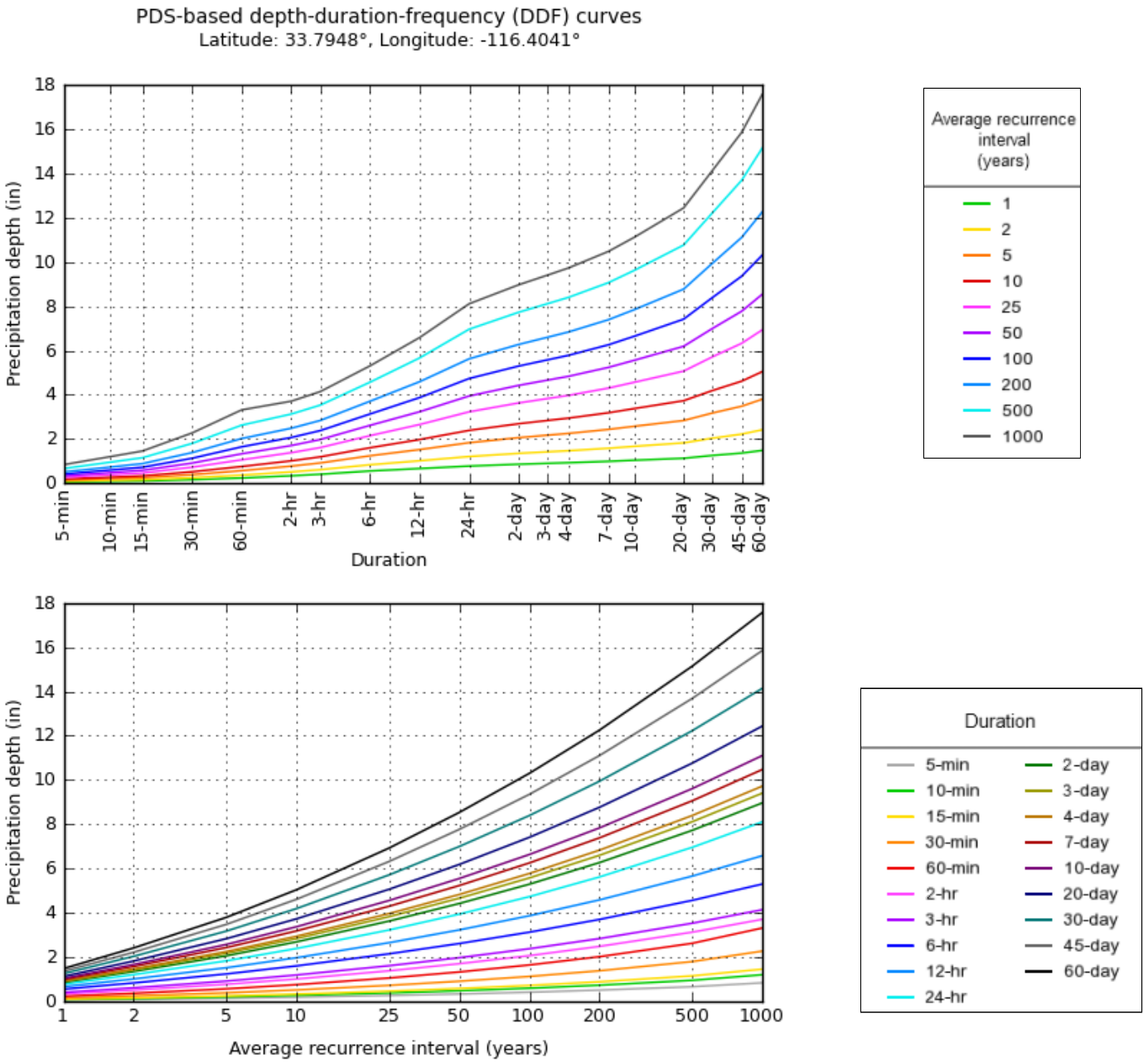
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



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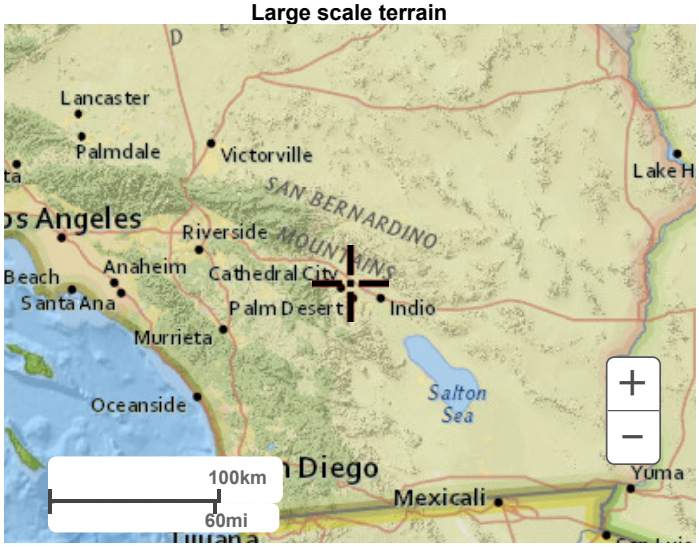
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Maps & aerials

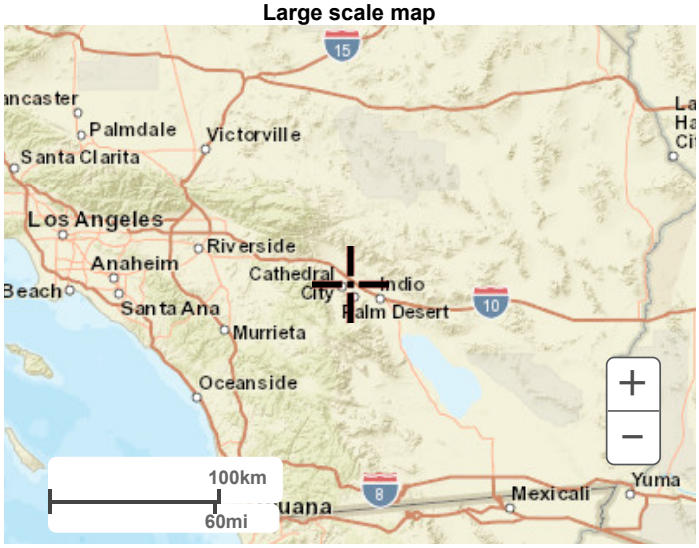
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix G

AGREEMENTS – CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

SEE FINAL WQMP SUBMITTAL

Appendix H

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT – SUMMARY OF SITE REMEDIATION CONDUCTED AND USE RESTRICTIONS

NOT APPLICABLE

Appendix I

PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

Project-Specific WQMP Summary Data Form

Applicant Information	
Name and Title	Farhad Zomoradi
Company	72094 Ginger Rogers LLC
Phone	310 428-2875
Email	

Project Information	
Project Name (as shown on project application/project-specific WQMP)	Tentative Tract Map 38636
Street Address	Northeast Corner Landy Lane and Ginger Rogers Road
Nearest Cross Streets	Victoria Drive
Municipality (City or Unincorporated County)	Rancho Mirage
Zip Code	92770
Tract Number(s) and/or Assessor Parcel Number(s)	APN: 685-080-002
Other (other information to help identify location of project)	

Indicate type of project.	**Priority Development Projects (Use an "X" in cell preceding project type):**	
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 25%
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 10% & erosive soils
		Commercial or Industrial ≥ 100,000 sq. ft.
		Automotive repair shop
		Retail Gasoline Outlet disturbing > 5,000 sq. ft.
		Restaurant disturbing > 5,000 sq. ft.
		Home subdivision ≥ 10 housing units
	X	Parking lot ≥ 5,000 sq. ft. or ≥ 25 parking spaces

Date Project-Specific WQMP Submitted	April 28, 2023
Size of Project Area (nearest 0.1 acre)	1.36
Will the project replace more than 50% of the impervious surfaces on an existing developed site?	No
Project Area managed with LID/Site Design BMPs (nearest 0.1 acre)	4.2
Are Treatment Control BMPs required?	Yes
Is the project subject to onsite retention by ordinance or policy?	Yes
Did the project meet the 100% LID/Site Design Measurable Goal?	Yes
Name of the entity that will implement, operate, and maintain the post-construction BMPs	72094 Ginger Rogers LLC.
Contact Name	Farhad Zomoradi
Street or Mailing Address	P.O. Box 10544
City	Beverly Hills, Ca.
Zip Code	90213
Phone	909 519-3346

Space Below for Use by City/County Staff Only	
Preceding Information Verified by (consistent with information in project-specific WQMP)	**Name:** **Date:**
Date Project-Specific WQMP Approved:	
Data Entered by	**Name:** **Date:**
Other Comments	

Appendix H Noise Impact Analysis, dated October 20, 2023

TTM 38636
NOISE IMPACT ANALYSIS

City of Rancho Mirage

October 20, 2023



Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

TTM 38636
NOISE IMPACT ANALYSIS

City of Rancho Mirage

October 20, 2023

prepared by
Roma Stromberg, INCE, MS
Catherine Howe, MS

GANDDINI GROUP INC.
555 Parkcenter Drive, Suite 225
Santa Ana, CA 92705
(714) 795-3100 | ganddini.com

Project No. 19669

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EXECUTIVE SUMMARY

The 5.04-acre project site is located at the northeast corner of the intersection of Landy Lane and Ginger Rogers Drive in the City of Rancho Mirage, California. The project site is currently vacant.

The proposed project involves development of a single-family residential subdivision consisting of nine (9) lots.

Existing Noise Environment

Sensitive receptors that may be affected by project generated noise include the existing single-family residential uses located adjacent to the north and east of the project site and approximately 566 feet to the southwest, 590 feet to the west, 1,340 feet to the south, and 1,296 feet to the southeast of the project site. Vehicle traffic associated with Bob Hope Drive is the dominant noise source and ambient noise levels on the project site are estimated to range between 51 and 54 dBA CNEL.

Project Construction Noise (On-Site Equipment)

The project site is adjacent to existing single family residential land uses to the north and to the east. Construction, alteration, repair, grading or improvement of any building, structure, road, or improvement to real property for which a permit has been issued by the city if said construction occurs within the allowable hours set forth in Section 15.04.030 is exempt from the provisions of Section 8.45 of the City's Municipal Code. Therefore, as long as project construction occurs outside the hours of 7:00 PM to 7:00 AM or on Sundays or holidays, or if written permission of the Building Official is obtained, project construction will be consistent with the applicable ordinance. The project is expected to comply with this ordinance and therefore, will be consistent with applicable ordinances.

Existing noise levels and project construction noise levels were modeled at the northern and eastern property lines using the FTA methodology in order to determine the expected increase in noise levels due to project construction. Existing noise levels along the northern property line are estimated to average 52.5 dBA L_{eq} and existing noise levels along the eastern property line are estimated to be 45.1 dBA L_{eq}. Construction noise levels are estimated to reach 61.6 dBA L_{eq} at the nearest residential property to the north and 66.8 at the nearest residential property to the east. Increases in ambient noise levels due to project construction will reach up to 9.1 along the northern property line and reach up to 21.7 along the eastern property line.

Best management practices (BMPs) provided in the Project Description will be included on the project plans and in contract specifications to minimize construction noise emanating from the proposed project.

Project Construction Noise (Off-Site Traffic)

The addition of 15 worker trips per day will result in an increase of less than 1 dB. Therefore, vehicle traffic generated during project construction is nominal relative to existing roadway volumes. The project impact is less than significant; no mitigation is required.

Project Operational Noise (Project Generated Traffic Noise)

Existing noise levels in the vicinity of the project site were modeled at 54.1 dBA CNEL and existing plus project generated vehicle traffic were modeled at 54.2 dBA CNEL, resulting in an increase of 0.1 dBA CNEL. Project generated vehicle traffic would not result in substantial increases in ambient noise levels. The project impact is less than significant; no mitigation is required.

Future Traffic Noise at the Project Site

future traffic noise levels at the project site are expected to reach 57.3 at proposed residential lots and will not exceed the City's criteria of normally acceptable (57.5 dBA CNEL). The proposed project would be consistent with the City General Plan Noise Element Noise Level and Land Use Compatibility Criteria. This impact would be less than significant. No mitigation is required.

Groundborne Vibration Impacts - Construction

With incorporation of BMPs, groundborne vibration generated by project construction would not exceed the levels necessary to cause architectural damage to sensitive receptors. Furthermore, potential annoyance at the nearest residential uses is expected to be temporary and only during daytime hours. This impact would be less than significant. No mitigation is required.

Air Traffic Impacts

The project site is located well outside the 60 dBA CNEL noise contour of Palm Springs International Airport. Therefore, the project would not expose people residing or working in the project area to excessive noise levels associated with airports. The impact would be less than significant; no mitigation is required.

1. INTRODUCTION

This section describes the purpose of this study and the proposed project.

PURPOSE AND OBJECTIVES

The purpose of this report is to provide an assessment of the noise impacts resulting from development and operation of the proposed project and to identify mitigation measures that may be necessary to reduce potentially significant impacts. The noise issues related to the proposed land use and development have been evaluated in light of applicable federal, state, and local policies, including those of the City of Rancho Mirage, in the context of the California Environmental Quality Act (CEQA).

Although this is a technical report, effort has been made to write the report clearly and concisely. A list of acronyms and glossary are provided in Appendix A and Appendix B of this report to assist the reader with technical terms related to noise and vibration analysis.

PROJECT LOCATION

The 5.04-acre project site is located at the northeast corner of the intersection of Landy Lane and Ginger Rogers Drive in the City of Rancho Mirage, California. The project site is currently vacant. A vicinity map showing the project location is provided on Figure 1.

PROJECT DESCRIPTION

The proposed project involves development of a single-family residential subdivision consisting of nine (9) lots. Figure 2 illustrates the project site plan.

The following best management practices (BMPs) shall be provided on project plans and in contract specifications to minimize construction and operational noise emanating from the proposed project:

1. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

2. As applicable, all equipment shall be shut off when not in use.

3. To the degree possible, equipment staging will be located in acres that create the greatest distance between construction-related noise and vibration sources and existing sensitive receptors.

4. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away and shielded from existing residences in the vicinity of the project site. Either one-inch plywood or sound blankets can be utilized for this purpose. They should reach up from the ground and block the line of sight between equipment and existing residences. The shielding should be without holes and cracks.

5. No amplified music and/or voice will be allowed on the project site.

6. Haul truck deliveries will not occur outside of the hours presented as exempt for construction per City of Rancho Mirage Municipal Code Section 15.04.030.

7. The use of vibratory rollers, or similar vibratory equipment, will be avoided within 20 feet of the residential structures to the north of the project site.



Figure 1
Project Location Map

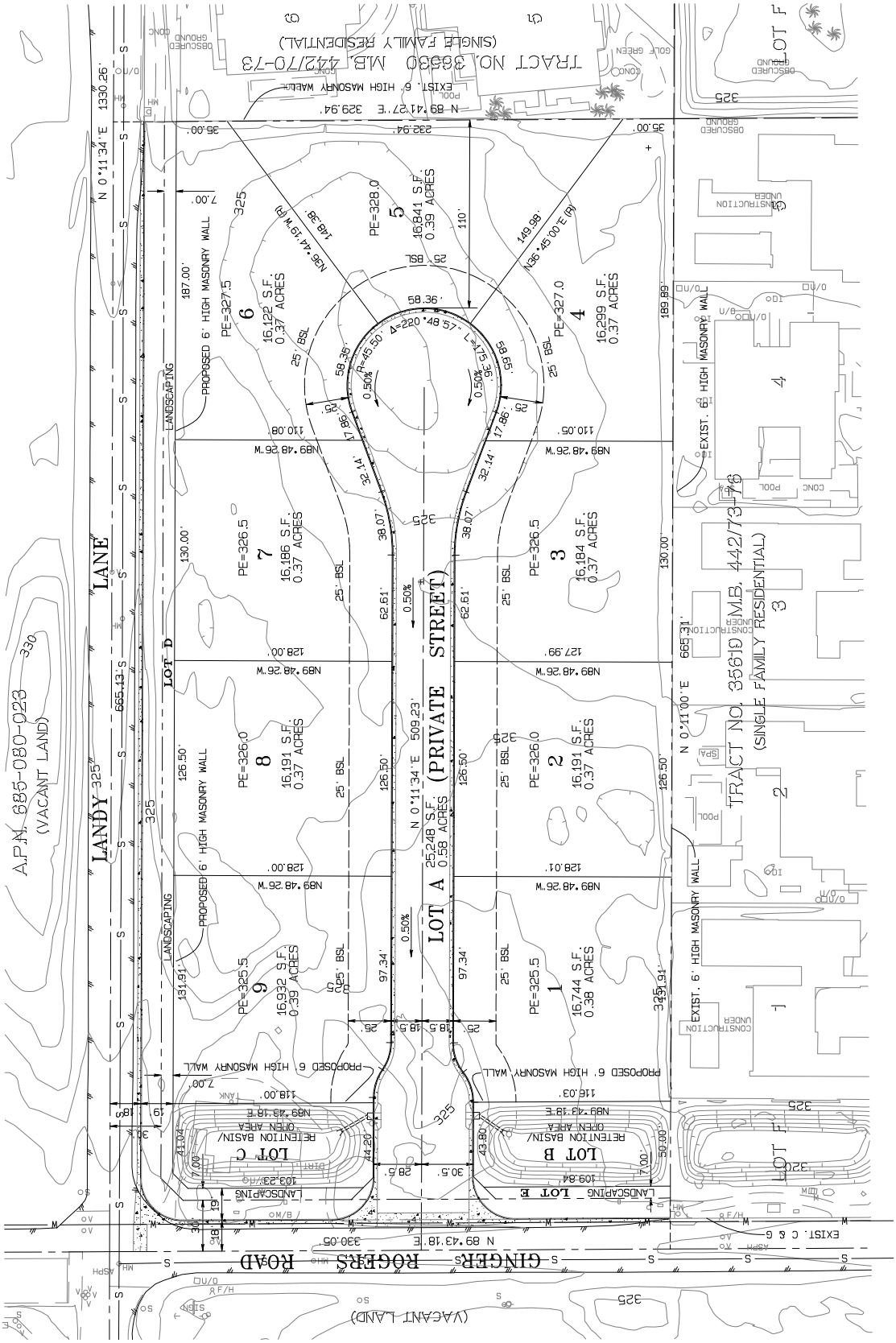


Figure 2
Site Plan

2. NOISE AND VIBRATION FUNDAMENTALS

This section provides an overview of key noise and vibration concepts.

NOISE FUNDAMENTALS

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment.

Commonly used noise terms are presented in Appendix B. The unit of measurement used to describe a noise level is the decibel (dB). The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are written dB(A) or dBA.

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects, and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate associated with the geometric spreading of a line source is 3 dBA/DD.

Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as a doubled traffic volume, would increase the noise levels by 3 dBA; halving of the energy would result in a 3 dBA decrease. Figure 3 shows the relationship of various noise levels to commonly experienced noise events.

Average noise levels over a period of minutes or hours are usually expressed as dBA L_{eq}, or the equivalent noise level for that period of time. For example, $L_{eq(3\text{-}hr)}$ would represent a 3-hour average. When no period is specified, a one-hour average is assumed.

Noise standards for land use compatibility are stated in terms of the Community Noise Equivalent Level (CNEL) and the Day-Night Average Noise Level (DNL). CNEL is a 24-hour weighted average measure of community noise. CNEL is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. DNL is a very similar 24-hour average measure that weights only the nighttime hours.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible, and that an increase (decrease) of 10 dBA sounds twice (half) as loud. This definition is recommended by the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013).

VIBRATION FUNDAMENTALS

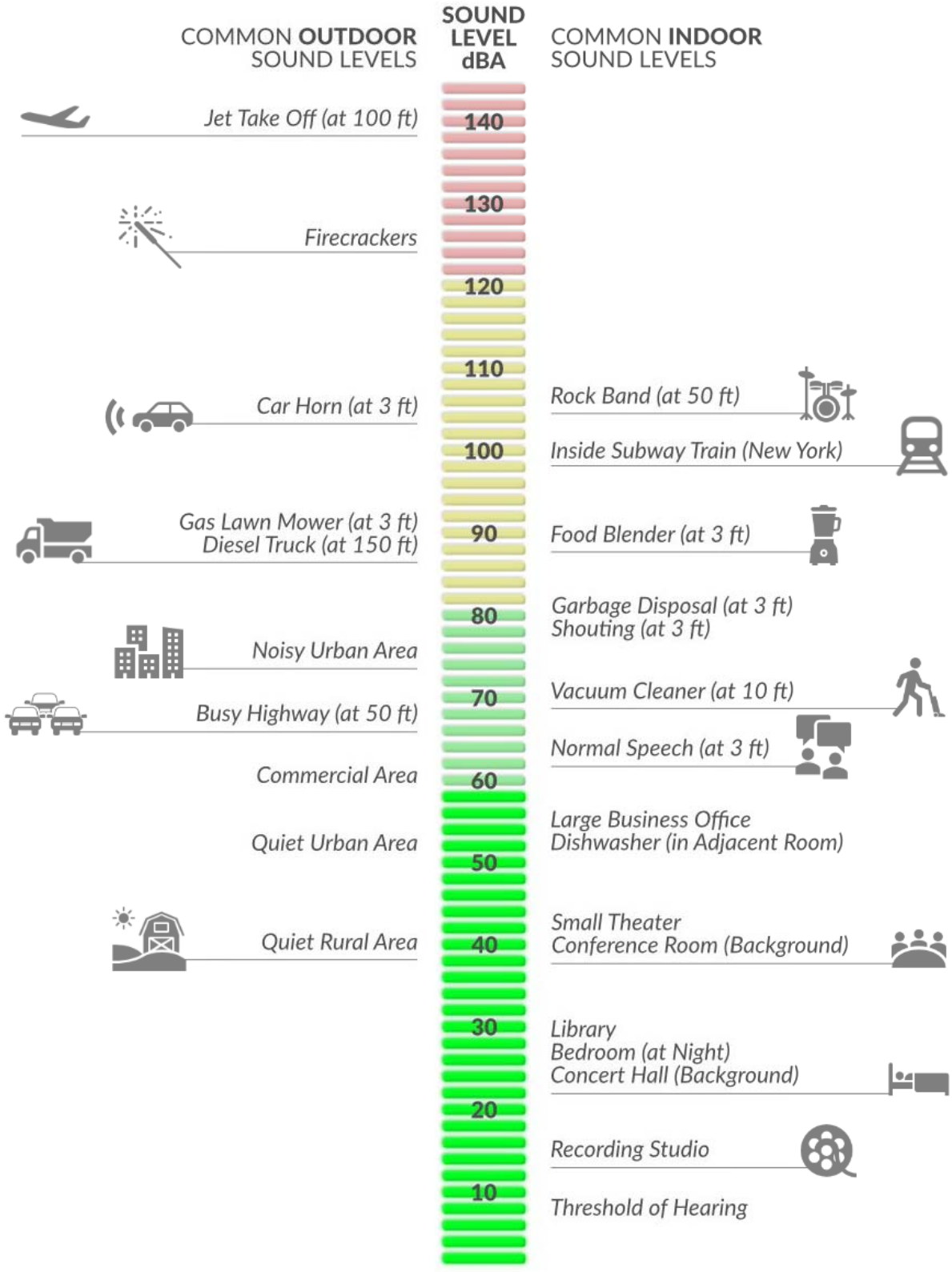
The way in which vibration is transmitted through the earth is called propagation. Propagation of earthborn vibrations is complicated and difficult to predict because of the endless variations in the soil through which

waves travel. There are three main types of vibration propagation: surface, compression, and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation".

As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

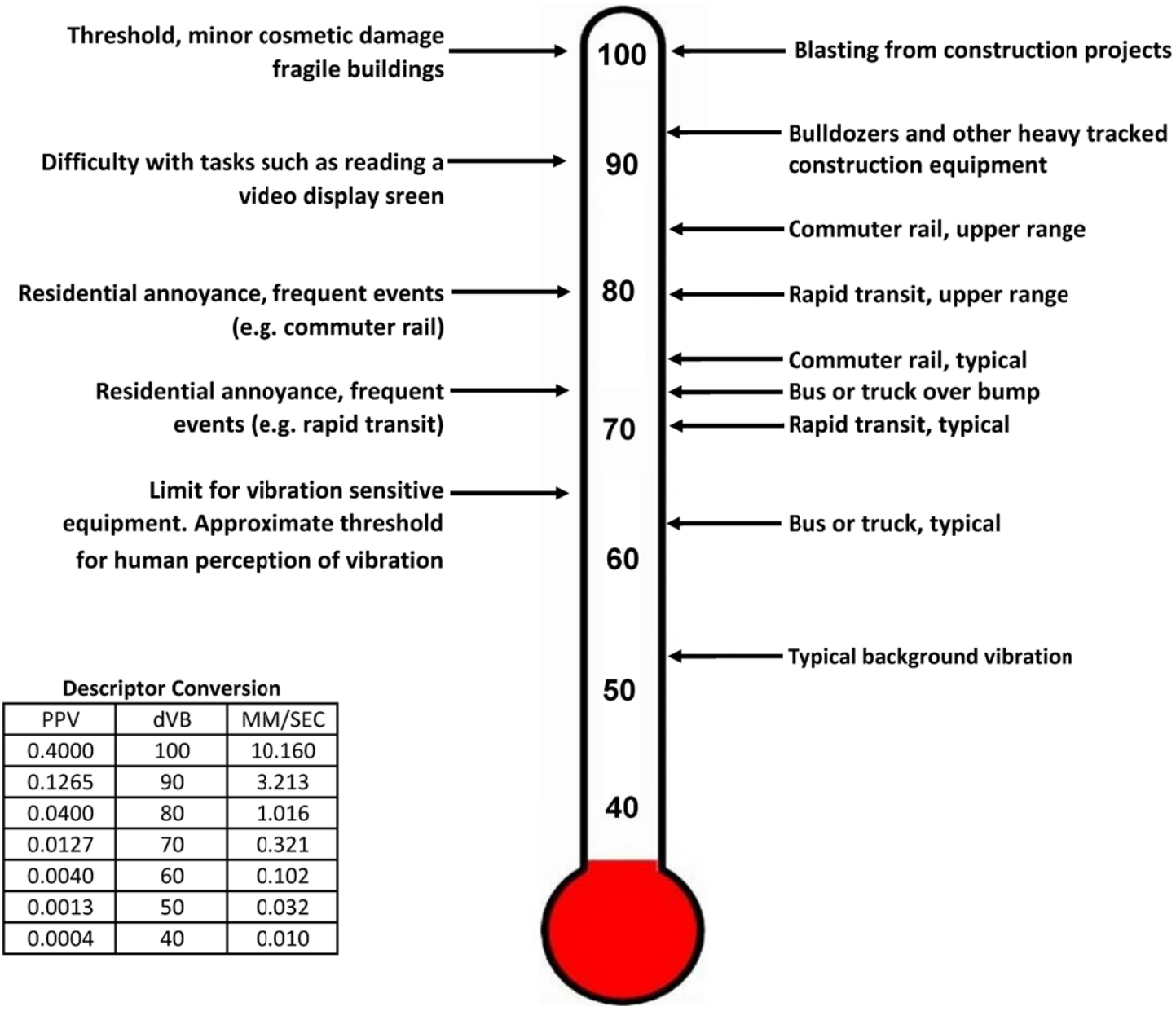
Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal in inches per second. The RMS of a signal is the average of the squared amplitude of the signal in vibration decibels (VdB), ref one micro-inch per second. The Federal Railroad Administration uses the abbreviation "VdB" for vibration decibels to reduce the potential for confusion with sound decibel.

PPV is appropriate for evaluating the potential of building damage and VdB is commonly used to evaluate human response. Decibel notation acts to compress the range of numbers required in measuring vibration. Similar to the noise descriptors, L_{eq} and L_{max} can be used to describe the average vibration and the maximum vibration level observed during a single vibration measurement interval. Figure 4 illustrates common vibration sources and the human and structural responses to ground-borne vibration. As shown in the figure, the threshold of perception for human response is approximately 65 VdB; however, human response to vibration is not usually substantial unless the vibration exceeds 70 VdB. Vibration tolerance limits for sensitive instruments such as magnetic resonance imaging (MRI) or electron microscopes could be much lower than the human vibration perception threshold.



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Based on Policy & Guidance from Federal Aviation Administration

Figure 3
A-Weighted Comparative Sound Levels



Descriptor Conversion

PPV	dVB	MM/SEC
0.4000	100	10.160
0.1265	90	3.213
0.0400	80	1.016
0.0127	70	0.321
0.0040	60	0.102
0.0013	50	0.032
0.0004	40	0.010

Source: FRA, 2012. Federal Railroad Administration High-Speed Ground Transportation Noise and Vibration Impact Assessment. Office of Railroad Policy Development, Washington, D.C. DOT/FRA/ORD-12/15. September.

Figure 4
Typical Levels of Groundborne Vibration

3. EXISTING NOISE ENVIRONMENT

This section describes the existing noise setting in the project vicinity.

EXISTING LAND USES AND SENSITIVE RECEPTORS

The project site is bordered by single-family residential uses to the north and east, Landy Lane to the west, and Giner Rogers Drive to the south of the project site.

The State of California defines sensitive receptors as those land uses that require serenity or are otherwise adversely affected by noise events or conditions. Schools, libraries, churches, hospitals, single and multiple-family residential, including transient lodging, motels and hotel uses make up the majority of these areas. Sensitive land uses that may be affected by project noise include the existing single-family residential uses located adjacent to the north and east of the project site and approximately 566 feet to the southwest, 590 feet to the west, 1,340 feet to the south, and 1,296 feet to the southeast of the project site.

Bob Hope Drive parallels the site approximately 400 feet to the west in a north/south direction. It is designated as a six-lane divided Major Arterial with a 120-foot right-of-way. Vehicle traffic traveling on Bob Hope Drive dominates the existing noise environment at the project site and is expected to continue to be the dominant noise source in the future. Existing noise levels at the site associated with vehicles traveling on Bob Hope Drive was modeled using a level of service buildout capacity of 20,806 average daily trips (ADT),[1] a vehicle mix of 92 % automobiles, 3% medium trucks, and 5 percent heavy trucks, and a speed of 40 miles per hour.[2] The modeling sheets are provided in Appendix D. The existing modeled noise level at the project site is 54.1 dBA CNEL.

[1] City of Rancho Mirage Street Traffic Counts. https://ranchomirageca.gov/our-city/city-departments/public-works/street-traffic-counts/. Accessed Oct. 19, 2023.

[2] Riverside County Public Health Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures. Jan. 15, 2004

4. REGULATORY SETTING

FEDERAL REGULATION

Federal Noise Control Act of 1972

The U.S. Environmental Protection Agency (EPA) Office of Noise Abatement and Control was originally established to coordinate federal noise control activities. After its inception, EPA's Office of Noise Abatement and Control issued the Federal Noise Control Act of 1972, establishing programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In response, the EPA published Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety (Levels of Environmental Noise). The Levels of Environmental Noise recommended that the Ldn should not exceed 55 dBA outdoors or 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas.

In 1981, EPA administrators determined that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to State and local governments. However, noise control guidelines and regulations contained in EPA rulings in prior years remain in place by designated Federal agencies, allowing more individualized control for specific issues by designated Federal, State, and local government agencies.

STATE REGULATIONS

California Code of Regulations

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, including residential buildings, are developed near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dB CNEL or higher. Acoustical studies that accompany building plans for noise-sensitive land uses must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings the acceptable interior noise limit for new construction is 45 dB CNEL

State of California General Plan Guidelines 2017

Though not adopted by law, the State of California General Plan Guidelines 2017, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provides guidance for the compatibility of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendations of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e., Ldn or CNEL) and in the upper limits for the normally acceptable outdoor exposure of noise-sensitive uses.

The OPR Guidelines include a Noise and Land Use Compatibility Matrix which identifies acceptable and unacceptable community noise exposure limits for various land use categories. Where the "normally acceptable" range is used, it is defined as the highest noise level that should be considered for the construction of the buildings which do not incorporate any special acoustical treatment or noise mitigation. The "conditionally acceptable" or "normally unacceptable" ranges include conditions calling for detailed acoustical study prior to the construction or operation of the proposed project.

Department of Transportation

The California Department of Transportation (Caltrans) has developed several publications on groundborne vibration. The *Transportation and Construction Vibration Guidance Manual* (Caltrans, 2020) provides informational content that supplements previous publications with improved knowledge and information relating to groundborne transportation- and construction-induced vibrations. Although the *Transportation and Construction Vibration Guidance Manual* is not an official policy, standard, specification, or regulation, it serves as a useful guide for evaluating vibration impacts.

Table 1 and Table 2 show the guideline criteria for potential damage and annoyance resulting from groundborne vibration. As shown in Table 1, these guidelines recommend that the threshold at which there is a risk of architectural damage is a peak particle velocity (PPV) of 0.25 inches/second (in/sec) for historic buildings, PPV of 0.3 in/sec at older residential structures, and a PPV of 0.5 in/sec at new residential structures and modern commercial/industrial buildings. Table 2 shows that a PPV of 0.4 in/sec is the threshold at which groundborne vibration becomes severe in regard to annoyance (Caltrans, 2020).

LOCAL REGULATIONS

City of Rancho Mirage General Plan

The City of Rancho Mirage General Plan Noise Element provides goals, policies and programs that are intended to ensure compatible development, protect noise sensitive land uses, and minimize the effects of excessive and nuisance noise. As shown in Table 3, per the City of Rancho Mirage General Plan, noise levels of up to 57.5 dBA CNEL are considered "normally acceptable" and up to 70 dBA CNEL are considered "conditionally acceptable" for single-family residential uses. These thresholds apply to the project itself.

Goals, policies, and programs from the Noise Element of the City's General Plan that are applicable to the proposed project are presented below:

Goal N 1 A noise environment providing peace and quiet that complements and is consistent with Rancho Mirage's resort residential character.

Policies:

N 1.1 Land use patterns, associated traffic and its distribution, and individual developments shall be assessed for their potential to generate adverse and incompatible noise impacts. Noise exceeding normally acceptable levels shall be appropriately mitigated.

Program N 1.1A Expand the City's Noise Ordinance to include noise exposure thresholds triggering project-specific noise impact studies. Provide development standards and project design guidelines that include a variety of mitigation measures that can be applied to meet City standards.

Program N 1.1B Develop and utilize an outline of minimal requirements for noise studies for future development projects. Studies shall analyze project impacts and the effectiveness of proposed mitigation measures.

N 1.2 Noise sensitive land uses, including residences, resorts, community open space, schools, libraries, churches, hospitals, and convalescent homes, shall be protected from high noise levels emitted by both existing and future noise sources.

Program N 1.2A On a project-specific basis, apply noise mitigating site planning and require the installation of sound walls, earthen berms, wall, and

window noise insulation, and/or other mitigation measures in areas exceeding the City's normally acceptable noise limits.

N 1.3 Project designs shall be required to include measures that assure that interior noise levels for residential development do not exceed 45 dBA CNEL.

Program N 1.3A In areas subject to exterior noise levels exceeding 65 dBA CNEL, the City shall require new residential development, upon construction, to demonstrate compliance with all applicable noise level limits at project completion.

N 1.4 Land uses allowed adjacent to Rancho Mirage's major arterial roads and highways, or the Southern Pacific Railroad/I-10 corridor, should generally be limited to those that are compatible with higher noise levels to maximize noise-related land use compatibility.

N 1.5 Develop and maintain a circulation plan that is consistent with the resort residential character of Rancho Mirage, avoids impacts to existing and planned sensitive receptors/uses, and provides fixed routes for existing and future truck traffic.

Program N 1.5A Employ noise mitigation practices, as necessary, when designing future streets and highways, and when improvements occur along existing road segments. Mitigation measures should emphasize the establishment of natural buffers or setbacks between the arterial roadways and adjoining noise-sensitive areas.

City of Rancho Mirage Municipal Code

The City's Municipal Code sets forth standards, guidelines, and procedures concerning the regulation of noise in Rancho Mirage. Section 8.45 cites the value and importance given by residents, visitors, and businesses to the exceptional quality of life and peace and quiet of the community. Portions applicable to the proposed project are presented below.

8.45.030 Exterior noise level limits.

Section 8.45.030 defines exterior noise level standards for the emission of noise from one property to another based on the zoning and time-of-day.

The noise level limits, presented in Table 4, are for a cumulative period of thirty minutes during any hour of the applicable time period. For cumulative periods of time less than thirty minutes in an hour, all the noise standards in Table 4 are increased according to Table 5. Per the ordinance, if the measured ambient noise level exceeds the dBA limits in Table 4, the noise limits and their adjustments for the first three categories in Table 5 shall be increased in five dBA increments as needed to encompass or reflect said ambient noise level. The maximum noise level under the last two categories in Table 4 shall be increased, if necessary, only to equal the ambient noise level.

8.45.050 Special provisions and exemptions.

The following activities and noise sources shall be exempted from the provisions of Section 8.45 of the City's Municipal Code.

E. Construction, alteration, repair, grading or improvement of any building, structure, road, or improvement to real property for which a permit has been issued by the city if said construction occurs within the allowable hours set forth in Section 15.04.030.

F. The operation of any equipment and machinery at any time within any zone by the city, its employees, or any agent or franchisee of the city in the course of performing maintenance, construction, or trash collection.

Section 15.04.030 Adoption, modifications, amendments, and deletions to Chapter 1 of the Building Code.

117.1 Restricted hours; Construction work. Except as otherwise provided herein, no person other than the person actually occupying any buildings to be altered, repaired or improved, shall be engaged or employed, nor shall any person cause any other person to be engaged or employed in any work of construction, erection, alteration, repair, addition to or improvement of any building, structure, road or improvement to realty, between the hours of 7:00 PM of each day and 7:00 AM of the next succeeding day or on Sundays and holidays, without written permission of the Building Official being first obtained. The Building Official may grant permission to work during those periods under appropriate circumstances after first having determined that such work will not unduly or unreasonably interfere with the peaceful enjoyment of property adjacent to such work.

117.2 Restricted hours; Landscape maintenance. Within gated communities, shopping centers, commercial centers, vacant residential or commercial parcels, or developed residential or commercial parcels, landscape activities such as leaf blowing, tree trimming, re-seeding, or mowing of grass as associated with the re-seeding process and any other landscaping activities which generate unusual noise, are prohibited between the hours of 6:00 PM of each day and 7:00 AM of the next succeeding day or on Sundays or on holidays.

8.45.065 Landscape maintenance.

A. It is unlawful and a public nuisance for any person to permit or perform for-hire landscape and non-emergency exterior hardscape maintenance activities such as, but not limited to, tree trimming, re-seeding, lawn mowing, leaf blowing, dust and debris clearing and any other landscaping or nonemergency exterior hardscape maintenance activities which utilize any motorized saw, sander, drill, grinder, leaf-blower, lawnmower, hedge trimmer, edger, or any other similar tool or device any time on Saturday and Sunday and between the hours of 6:00 PM and 7:00 AM the next day during weekdays, unless otherwise provided in this section.

17.18.080 Vibration.

No vibration associated with any use shall be allowed which is discernible beyond the boundary line of the subject property.

Table 1
Guideline Vibration Damage Potential Threshold Criteria

Structure Condition	Maximum PPV (in/sec)	
	Transient Sources[1]	Intermittent Sources[1]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual, Chapter 7 Table 19, April 2020.

Notes:

(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 2
Guideline Vibration Annoyance Potential Criteria

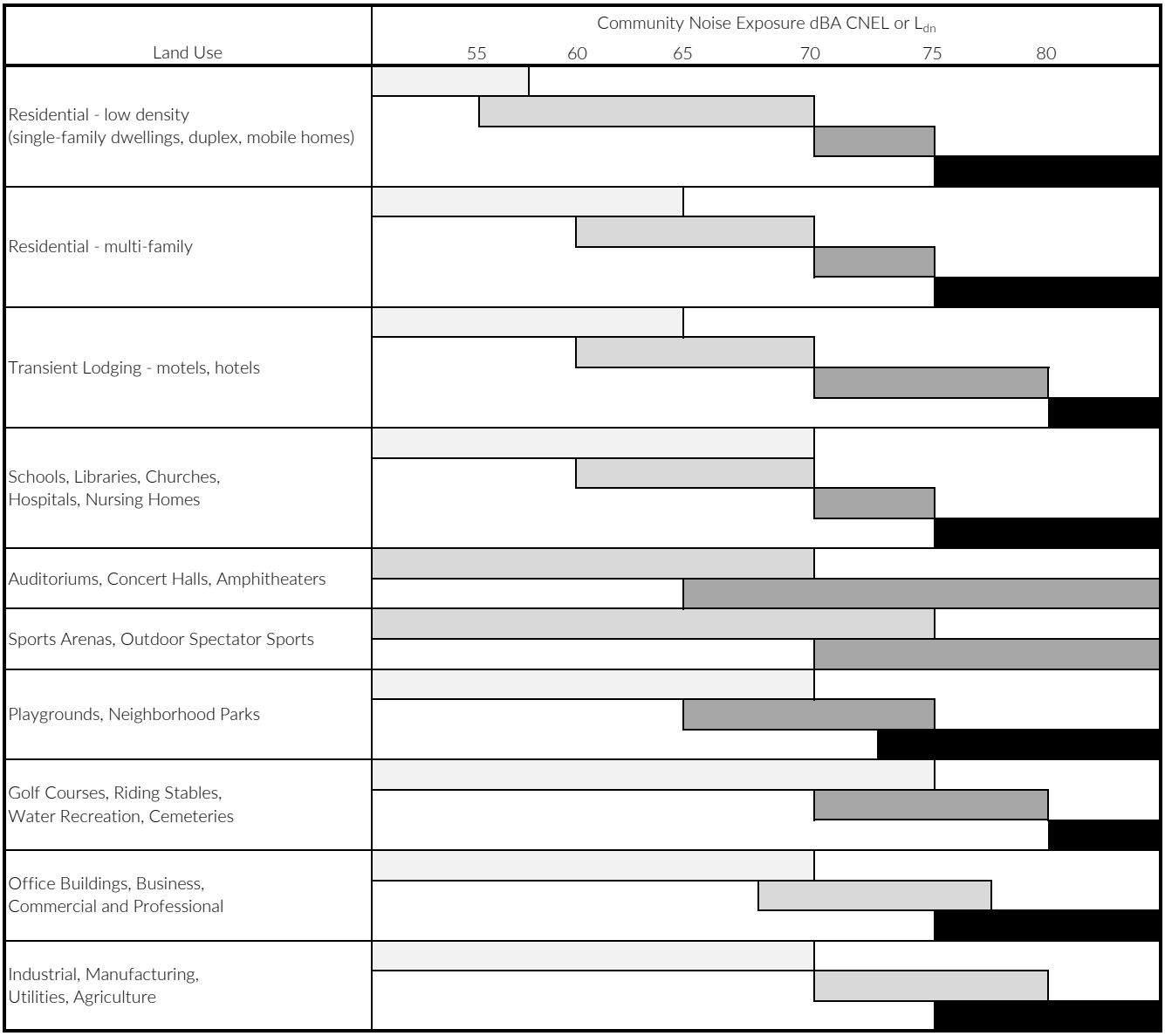
Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation. Transportation and Construction Vibration Guidance Manual,

Notes:

(1) Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Table 3
City of Rancho Mirage Noise Level and Land Use Compatibility



Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings are conventionally constructed with no special noise installation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Outdoor environment will seem noisy.

Normally Unacceptable: New construction or development should generally be discouraged, but if it does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design and outdoor areas must be shielded.

Clearly Unacceptable: New construction or development should generally not be undertaken. Construction cost to make indoor environment acceptable would be prohibitive and outdoor environment would not be usable.

Source: City of Rancho Mirage 2017 General Plan.

Table 4
City of Rancho Mirage Exterior Noise Level Standards (More than 30 Minutes)

Land Use/Zone	Time of Day	Noise Level (dBA)
Residential, Low Density (R-E, H-R, R-L-2, R-L-3)	7:00 AM to 6:00 PM	55
	6:00 PM to 10:00 PM	50
	10:00 PM to 7:00 AM	45
Residential, Medium and High Density, Hospital, Open Space (OS, R-M, R-H, MHP)	7:00 AM to 6:00 PM	60
	6:00 PM to 10:00 PM	55
	10:00 PM to 7:00 AM	50
Commercial Office, Resort Commercial, Mixed Use, Institutional (O, P, Rs-H, M-U)	7:00 AM to 6:00 PM	65
	6:00 PM to 10:00 PM	60
	10:00 PM to 7:00 AM	55
Commercial Neighborhood, General Commercial, Commercial Recreation, Light Industrial (C-N, C-G, I-L)	7:00 AM to 6:00 PM	70
	6:00 PM to 10:00 PM	65
	10:00 PM to 7:00 AM	60

Notes:

Source: City of Rancho Mirage Municipal Code 8.45.030 (Table A-1).

Table 5

City of Rancho Mirage Adjustments
For Exterior Noise Level Standards (30 Minutes and Less)

Duration of Sound	dBA Adjustment
15—30 minutes per hour	3
10—15 minutes per hour	5
5—10 minutes per hour	10
1—5 minutes per hour	15
Any period of time less than 1 minute per hour	20

Notes:

Source: City of Rancho Mirage Municipal Code 8.45.030 (Table B-1).

5. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

This section discusses the analysis methodologies used to assess noise impacts.

CONSTRUCTION NOISE MODELING

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work.

Construction noise associated with the proposed project was calculated at the sensitive receptor locations, utilizing methodology presented in the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (2018) together with several key construction parameters, including: distance to each sensitive receiver, equipment usage, percent usage factor, and baseline parameters for the project site. Distances to receptors were based on the acoustical center of the project site.

The equipment used to calculate the construction noise levels for each phase were based on the assumptions provided in the California Emissions Estimator Model (CalEEMod) modeling provided in the Air Quality, Global Climate Change, and Energy Impact Analysis prepared for the proposed project (Ganddini Group, Inc., 2023). For analysis purposes, the distance measured from the project site to sensitive receptors was assumed to be the acoustical center of the project site to the property line of residential properties with existing residential buildings. Sound emission levels associated with typical construction equipment as well as typical usage factors are provided in Table 6. Construction noise worksheets are provided in Appendix C.

SOUNDPLAN NOISE MODEL

The SoundPLAN acoustical modeling software was utilized to model existing, existing plus project, and future roadway noise levels at the proposed sensitive receptors (e.g., residences). SoundPLAN is capable of evaluating both mobile and stationary noise sources (e.g., vehicle traffic, rail, parking lots, drive-thru menus, car wash equipment, vacuums, etc.). The SoundPLAN software utilizes algorithms (based on the inverse square law) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

Landy Lane borders the project site to the west and Ginger Rogers Road borders the project site to the south. Both of these roadways are designated as two-lane "Local" roadways with 60-foot rights-of-way in the City of Rancho Mirage 2017 General Plan Circulation Element. Neither of these roadways will generate enough vehicle traffic to be considered acoustically significant. Bob Hope Drive parallels the site approximately 400 feet to the west in a north/south direction. It is designated as a six-lane divided Major Arterial with a 120-foot right-of-way. Vehicle traffic traveling on Bob Hope Drive dominates the existing noise environment at the project site and is expected to continue to be the dominant noise source in the future. Bob Hope Drive was modeled using a level of service buildout capacity of 43,100 average daily trips (ADT), a vehicle mix of 92 % automobiles, 3% medium trucks, and 5 percent heavy trucks, and a speed of 40 miles per hour[3]. The modeling sheets are provided in Appendix D.

GROUNDBORNE VIBRATION MODELING

Groundborne vibration modeling was performed using vibration propagation equations and construction equipment source levels obtained from the FTA *Transit Noise and Vibration Impact Assessment Manual* (2018). Table 7 shows typical vibration levels associated with commonly used construction equipment based on data from the FTA.

[3] Riverside County Public Health Requirements for Determining and Mitigating Traffic Noise Impacts to Residential Structures. Jan. 15, 2004

There are several types of construction equipment that can cause vibration levels high enough to annoy persons in the vicinity and/or result in architectural or structural damage to nearby structures and improvements. For example, as shown in Table 7, a vibratory roller could generate up to 0.21 in/sec PPV at and operation of a large bulldozer could generate up to 0.089 PPV at a distance of 25 feet (two of the most vibratory pieces of construction equipment). Groundborne vibration at sensitive receptors associated with this equipment would drop off as the equipment moves away. For example, as the vibratory roller moves further than 100 feet from the sensitive receptors, the vibration associated with it would drop below 0.0026 in/sec PPV. It should be noted that these vibration levels are reference levels and may vary slightly depending upon soil type and specific usage of each piece of equipment.

The fundamental equation used to calculate vibration propagation through average soil conditions and distance is as follows:

$$PPV_{equipment} = PPV_{ref} (25/D_{rec})^n$$

Where: PPV_{ref} = *reference PPV at 25ft.*
D_{rec} = *distance from equipment to receiver in ft.*
n = 1.5 (*the value related to the attenuation rate through ground*)

Groundborne vibration calculations are provided in Appendix E.

Table 6 (1 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	-N/A-	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	-N/A-	0
Blasting	Yes	-N/A-	94	-N/A-	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	-N/A-	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Forklift[2,3]	No	50	n/a	61	n/a
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	-N/A-	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydr. Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	-N/A-	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarafier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	50	85	77	9
Paving Equipment	No	50	85	77	9
Pneumatic Tools	No	50	85	85	90

Table 6 (2 of 2)
CA/T Equipment Noise Emissions and Acoustical Usage Factor Database

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Spec. Lmax @ 50ft (dBA, slow)	Actual Measured Lmax @ 50ft (dBA, slow)	No. of Actual Data Samples (Count)
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/chipping gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (Single Nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Shears (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	-N/A-	0
Tractor	No	40	84	-N/A-	0
Vacuum Excavator (Vac-truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Notes:

(1) Source: FHWA Roadway Construction Noise Model User's Guide January 2006.

(2) Warehouse & Forklift Noise Exposure - NoiseTesting.info Carl Stautins, November 4, 2014 http://www.noisetesting.info/blog/carl-strautins/page-3/

(3) Data provided Leq as measured at the operator. Sound Level at 50 feet is calculated using Inverse Square Law.

Table 7
Construction Equipment Vibration Source Levels

Equipment		PPV at 25 ft, in/sec	Approximate Lv* at 25 ft
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment Manual, 2018.
*RMS velocity in decibels, VdB re 1 micro-in/sec

6. NOISE AND VIBRATION IMPACTS

This section analyzes the significance of project-related noise and groundborne vibration impacts relative to standards established by the City of Rancho Mirage and other applicable agencies in the context of CEQA. Appendix G of the California Environmental Quality Act Guidelines (Title 14, Division 6, Chapter 3 of the California Code of Regulations) includes an environmental checklist that identifies issues upon which findings of significance should be made. The CEQA Environmental Checklist Appendix G, XIII. Noise, requires determination if the project would result in:

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*
b) *Generation of excessive groundborne vibration or groundborne noise levels?*
c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?*

NOISE IMPACTS

Would the project result in:

a) *Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Finding: Less Than Significant

In relation to the Environmental Checklist noise issue "a", applicable standards established by the City of Rancho Mirage can be categorized into the following areas:

- Construction Noise
- Mobile Source Noise

Project Construction Noise (On-Site Equipment)

The project site is adjacent to existing single family residential land uses to the north and to the east. Construction, alteration, repair, grading or improvement of any building, structure, road, or improvement to real property for which a permit has been issued by the city if said construction occurs within the allowable hours set forth in Section 15.04.030 is exempt from the provisions of Section 8.45 of the City's Municipal Code. Therefore, as long as project construction occurs outside the hours of 7:00 PM to 7:00 AM or on Sundays or holidays, or if written permission of the Building Official is obtained, project construction will be consistent with the applicable ordinance. The project is expected to comply with this ordinance and therefore, will be consistent with applicable ordinances.

Existing noise levels and project construction noise levels were modeled at the northern and eastern property lines using the FTA methodology in order to determine the expected increase in noise levels due to project construction. Existing noise levels along the northern property line are estimated to average 52.5 dBA L_{eq} and existing noise levels along the eastern property line are estimated to be 45.1 dBA L_{eq}. Construction noise levels are estimated to reach 61.6 dBA L_{eq} at the nearest residential property to the north and 66.8 at the nearest residential property to the east. Increases in ambient noise levels due to project construction will reach up to 9.1 along the northern property line and reach up to 21.7 along the

eastern property line. Construction noise modeling worksheets for each phase are provided in Appendix C. Anticipated noise levels during each construction phase are presented in Table 8.

Best management practices (BMPs) provided in the Project Description will be included on the project plans and in contract specifications to minimize construction noise emanating from the proposed project.

Project Construction Noise (Off-Site Traffic)

Construction truck trips would occur throughout the construction period. Given the project site's proximity to Interstate 10 Freeway, it is anticipated that vendor and/or haul truck traffic would take the most direct route to the appropriate freeway ramps.

According to the TTM 38636 *Air Quality, Global Climate Change, and Energy Impact Analysis* (Ganddini Group, Inc., 2023), the greatest number of construction-related vehicle trips per day would be during grading and paving at up to 15 vehicle trips per day (for worker trips). The addition of 15 trips will result in an increase of less than 1 dB. Therefore, vehicle traffic generated during project construction is nominal relative to existing roadway volumes. The project impact is less than significant; no mitigation is required.

Project Operational Noise (Project Generated Traffic Noise)

The proposed project is the development of the approximately 4.37 net-acre project site with 9 single-family residential lots. Due to the project's size, it is anticipated that it will screen out and will not require a traffic study. Therefore, based on the Institute of Transportation Engineers (ITE) 11th Edition Trip Generation Manual (2021) rate for single-family housing (ITE 210), the proposed project will have trip generation rates of 9.43 trips per dwelling unit per weekday, 9.48 trips per dwelling unit per Saturday, and 8.48 trips per dwelling unit per Sunday. Considering these trip generation rates and that the project is only 9 dwelling units, the proposed project would be anticipated to generate up to approximately 85 vehicle trips per day.

As discussed in Section 3, existing noise levels at the project site were modeled at 54.1 dBA CNEL. Existing plus project generated vehicle traffic were modeled at 54.2 dBA CNEL and would result in an increase of 0.1 dBA CNEL over existing noise levels. Project generated vehicle traffic would not result in substantial increases in ambient noise levels. The project impact is less than significant; no mitigation is required.

Future Traffic Noise at the Project Site

As shown in Table 3, per the City of Rancho Mirage General Plan, noise levels of up to 57.5 dBA CNEL are considered "normally acceptable" and up to 70 dBA CNEL are considered "conditionally acceptable" for single-family residential uses. Per the City, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. Noise levels at the western property line

As shown in Figure 5 and in Figure 6, future traffic noise levels at the project site are expected to reach 57.3 at proposed residential lots and will not exceed the City's criteria of normally acceptable (57.5 dBA CNEL). The proposed project would be consistent with the City's General Plan Noise Element Noise Level and Land Use Compatibility Criteria (Table 3).

GROUNDBORNE VIBRATION IMPACTS

Would the project result in:

b) Generation of excessive groundborne vibration or groundborne noise levels?

Finding: Less Than Significant

In relation to the Environmental Checklist noise issue "b", the City of Rancho Mirage Municipal Code Section 17.18.080 states that no vibration associated with any use shall be allowed which is discernible beyond the boundary line of the subject property. However, the City has not established thresholds of significance concerning groundborne vibration. In the absence of City-established thresholds, groundborne vibration impacts are based on guidance from the *Transportation and Construction Vibration Guidance Manual* (California Department of Transportation, 2020) (see Regulatory Setting section). Accordingly, the project would result in a significant impact if:

- Groundborne vibration levels generated by the project have the potential to cause architectural damage at nearby buildings by exceeding the following PPV:
  - 0.08 in/sec at extremely fragile historic buildings, ruins, ancient monuments
  - 0.10 in/sec at fragile buildings
  - 0.25 in/sec at historic and some old buildings
  - 0.30 in/sec at older residential structures
  - 0.50 in/sec at new residential structures and modern industrial/commercial buildings.
- Groundborne vibration levels generated by the project have the potential to cause severe annoyance to people living or working in nearby buildings by exceeding a PPV of 0.4 in/sec.

Groundborne vibration modeling worksheets are provided in Appendix E.

Construction-Related Vibration Impacts

Existing structures in the immediate vicinity of the project site include the single-family residential dwelling units located as close as approximately 15 feet to the north and 26 feet to the east of the project site and the commercial building located as close as approximately 195 feet to the southwest of the project site.

Groundborne vibration levels associated with project construction are provided in Table 9. As shown in Table 9, the residential threshold of 0.3 PPV in/sec will be exceeded at the residential uses to the north. BMPs prohibiting the use of vibratory rollers, or other similar vibratory equipment, within 20 feet of residential structures to the north will reduce potential architectural damage impacts. With incorporation of the needed best management practice for architectural damage, potential annoyance at the nearest residential uses would be below the 0.4 in/sec PPV threshold. Furthermore, annoyance is expected to be temporary, occurring during the daytime hours and only when vibratory equipment, such as vibratory rollers, are in proximity to a residential structure. Project construction would not result in the exposure of persons to excessive groundborne vibration and impacts would be less than significant with incorporation of BMPs management practices listed in the Project Description.

The most substantial sources of groundborne vibration during post-construction project operations will include the movement of passenger vehicles and trucks on paved and generally smooth surfaces. Loaded trucks generally have a PPV of 0.076 at a distance of 25 feet (Caltrans 2020), which is a substantially lower PPV than that of a vibratory roller (0.210 in/sec PPV at 25 feet). Therefore, groundborne vibration levels generated by project operation would not exceed those modeled for project construction.

Air Traffic Impacts

Would the project result in:

c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?*

Finding: No Impact

The closest airport to the project site is the Palm Springs International Airport, with associated airport runways located as close as approximately 5.55 miles northwest of the project site. As shown on Map PS-3, Noise Compatibility Contours, of the Riverside County Airport Land Use Compatibility Plan Policy Document (adopted March 2005) the project site is located well outside the 60 dBA CNEL noise contour of Palm Springs Airport. Therefore, the proposed project would not expose people residing or working in the area to excessive noise levels. There is no impact, and no mitigation is required.

Table 8
Construction Noise Levels (dBA L_{eq})

Receptor Location	Representative Noise Measurement[1]	Existing Ambient Noise Levels (dBA Leq)	Construction Noise Levels (dBA Leq)[2]	Increase Due to Construction
Phase: Demolition				
Residential Adjacent on the North	NM1	52.5	60.5	8.0
Residential Adjacent on the East	NM2	45.1	65.7	20.6
Phase: Grading				
Residential Adjacent on the North	NM1	52.5	61.6	9.1
Residential Adjacent on the East	NM2	45.1	66.8	21.7
Phase: Building Construction				
Residential Adjacent on the North	NM1	52.5	58.0	5.5
Residential Adjacent on the East	NM2	45.1	63.2	18.1
Phase: Paving				
Residential Adjacent on the North	NM1	52.5	58.4	5.9
Residential Adjacent on the East	NM2	45.1	63.5	18.4
Phase: Architectural Coating				
Residential Adjacent on the North	NM1	52.5	48.8	0.0
Residential Adjacent on the East	NM2	45.1	53.9	8.8

Notes:
(1) Estimated per existing traffic noise levels associated with Bob Hope Drive (see Appendix *)
(2) Construction noise worksheets are provided in Appendix D.

Table 9
Construction Vibration Levels at the Nearest Receptors

Receptor Location	Distance from Property Line to Nearest Structure (feet)	Equipment	Vibration Level[1]	Threshold Exceeded?[2]	Vibration Level with BMPs?	Threshold Exceeded?
Architectural Damage Analysis in (PPV)						
Residential to North (9 Siena Vista Court, Rancho Mirage)	15	Vibratory Roller	0.452	Yes	0.293	No
	15	Large Bulldozer	0.191	No	-	-
Residential to East (7 Echo Lane, Rancho Mirage)	26	Vibratory Roller	0.198	No	-	-
	26	Large Bulldozer	0.084	No	-	-
Commercial to Southwest (Resuscitation International (Surgical Supply Store), 35100 Bob Hope Drive #200)	195	Vibratory Roller	0.010	No	-	-
	195	Large Bulldozer	0.004	No	-	-

Notes:

(1) Vibration levels are provided in PPV in/sec.

(2) Caltrans identifies the threshold at which there is a risk to "architectural" damage older residential structures as 0.3 in/sec PPV and 0.5 in/sec PPV at modern industrial/commercial buildings (see Table 2).

(3) Needed Best Management Practices (BMPs) for architectural damage would include prohibiting the use of vibratory rollers, or other similar vibratory equipment, within 20 feet of residential strucures to the north of the project site.

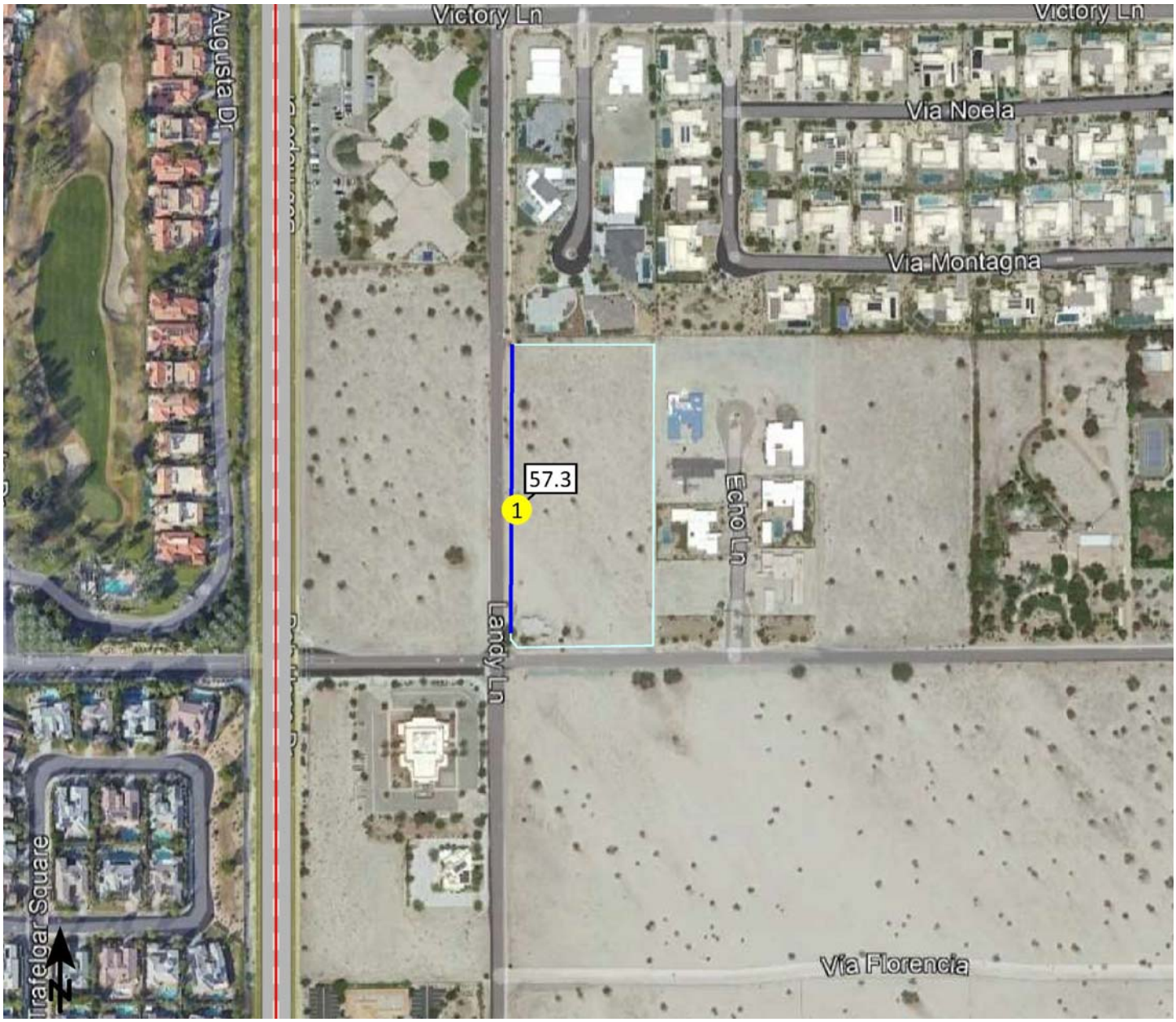


Figure 5
Future Traffic Noise Levels (dBA, CNEL)

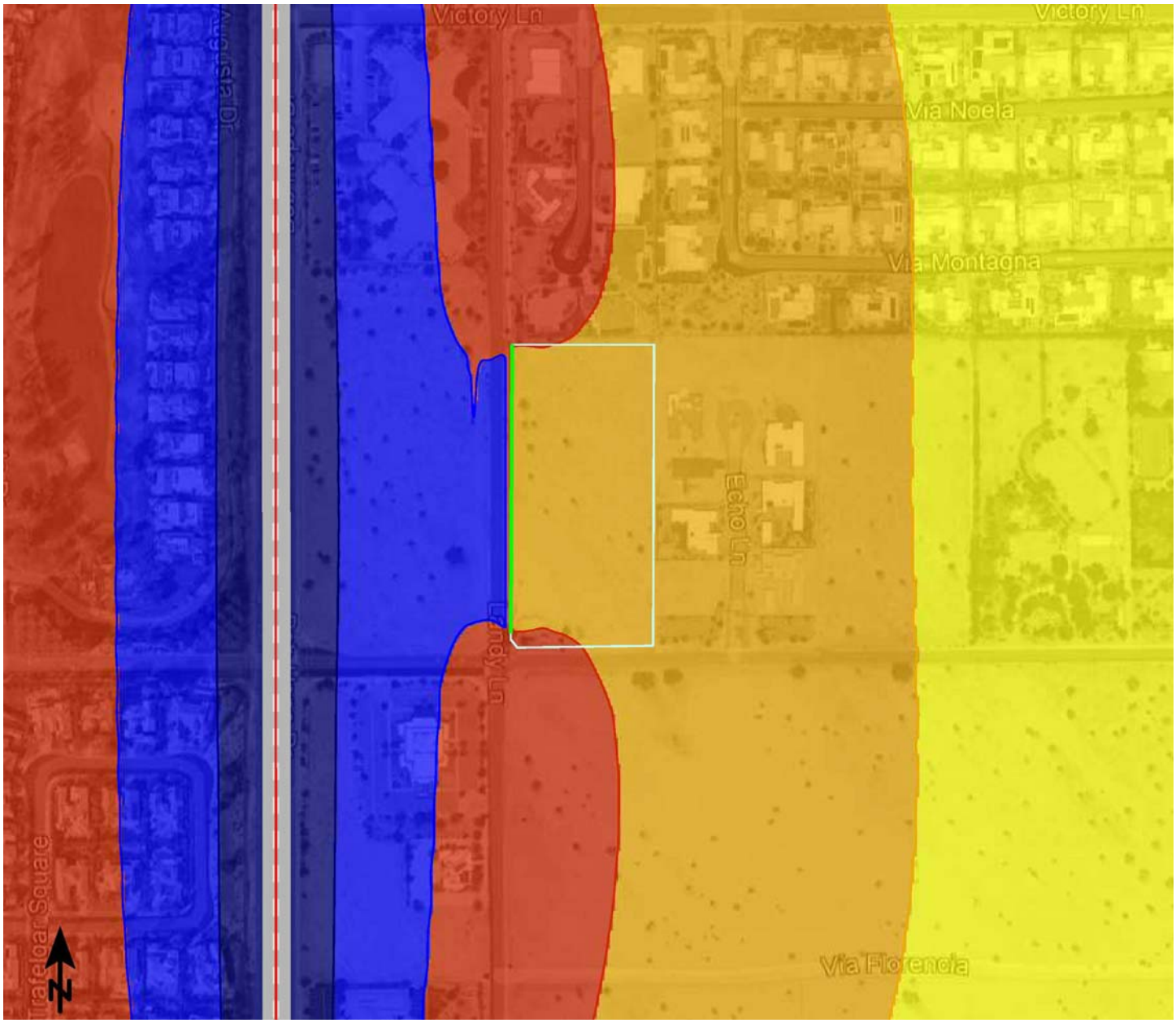


Figure 6
Future Traffic Noise Contours (dBA, CNEL)

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APPENDICES

Appendix A List of Acronyms
Appendix B Glossary
Appendix C Construction Noise Model Worksheets
Appendix D SoundPLAN Worksheets
Appendix E Groundborne Vibration Worksheets

APPENDIX A

LIST OF ACRONYMS

Term	Definition
ADT	Average Daily Traffic
ANSI	American National Standard Institute
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
D/E/N	Day / Evening / Night
dB	Decibel
dBA or dB(A)	Decibel "A-Weighted"
dBA/DD	Decibel per Double Distance
dBA L_{eq}	Average Noise Level over a Period of Time
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
L_{02},L_{08},L_{50},L_{90}	A-weighted Noise Levels at 2 percent, 8 percent, 50 percent, and 90 percent, respectively, of the time period
DNL	Day-Night Average Noise Level
$L_{eq(x)}$	Equivalent Noise Level for '"x" period of time
L_{eq}	Equivalent Noise Level
L_{max}	Maximum Level of Noise (measured using a sound level meter)
L_{min}	Minimum Level of Noise (measured using a sound level meter)
LOS C	Level of Service C
OPR	California Governor's Office of Planning and Research
PPV	Peak Particle Velocities
RCNM	Road Construction Noise Model
REMEL	Reference Energy Mean Emission Level
RMS	Root Mean Square

APPENDIX B

GLOSSARY

Term	Definition
Ambient Noise Level	The all-encompassing noise environment associated with a given environment, at a specified time, usually a composite of sound from many sources, at many directions, near and far, in which usually no particular sound is dominant.
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear.
CNEL	Community Noise Equivalent Level. CNEL is a weighted 24-hour noise level that is obtained by adding five decibels to sound levels in the evening (7:00 PM to 10:00 PM), and by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours.
Decibel, dB	A logarithmic unit of noise level measurement that relates the energy of a noise source to that of a constant reference level; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
DNL, Ldn	Day Night Level. The DNL, or Ldn is a weighted 24-hour noise level that is obtained by adding ten decibels to sound levels at night (10:00 PM to 7:00 AM). This weighting accounts for the increased human sensitivity to noise during the nighttime hours.
Equivalent Continuous Noise Level, L_{eq}	A level of steady state sound that in a stated time period, and a stated location, has the same A-weighted sound energy as the time-varying sound.
Fast/Slow Meter Response	The fast and slow meter responses are different settings on a sound level meter. The fast response setting takes a measurement every 100 milliseconds, while a slow setting takes one every second.
Frequency, Hertz	In a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., the number of cycles per second).
L_{02}, L_{08}, L_{50}, L_{90}	The A-weighted noise levels that are equaled or exceeded by a fluctuating sound level, 2 percent, 8 percent, 50 percent, and 90 percent of a stated time period, respectively.
L_{max}, L_{min}	Lmax is the RMS (root mean squared) maximum level of a noise source or environment measured on a sound level meter, during a designated time interval, using fast meter response. Lmin is the minimum level.
Offensive/ Offending/Intrusive Noise	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of sound depends on its amplitude, duration, frequency, and time of occurrence, and tonal information content as well as the prevailing ambient noise level.
Root Mean Square (RMS)	A measure of the magnitude of a varying noise source quantity. The name derives from the calculation of the square root of the mean of the squares of the values. It can be calculated from either a series of lone values or a continuous varying function.

APPENDIX C

CONSTRUCTION NOISE MODEL WORKSHEETS

Receptor - Residential Uses to North

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	With 6 Ft Wall Reduction
Demolition										
Concrete/Industrial Saws	1	82	290	40	0.40	-15.3	-4.0	66.7	62.8	**52.8**
Excavators	3	82	290	40	1.20	-15.3	0.8	66.7	67.5	**57.5**
Rubber Tired Dozers	2	82	290	40	0.80	-15.3	-1.0	66.7	65.8	**55.8**
								Log Sum	70.5	**60.5**
Grading										
Excavators	1	82	290	40	0.40	-15.3	-4.0	66.7	62.8	**52.8**
Rubber Tired Dozers	1	82	290	40	0.40	-15.3	-4.0	66.7	62.8	**52.8**
Tractors/Loaders/Backhoes	3	84	290	40	1.20	-15.3	0.8	68.7	69.5	**59.5**
Graders	1	85	290	40	0.40	-15.3	-4.0	69.7	65.8	**55.8**
								Log Sum	71.6	**61.6**
Building Construction										
Cranes	1	81	290	16	0.16	-15.3	-8.0	65.7	57.8	**47.8**
Forklifts[2]	3	48	290	40	1.20	-15.3	0.8	32.7	33.5	**23.5**
Generator Sets	1	81	290	50	0.50	-15.3	-3.0	65.7	62.7	**52.7**
Welders	3	74	290	40	1.20	-15.3	0.8	58.7	59.5	**49.5**
Tractors/Loaders/Backhoes	1	84	290	40	0.40	-15.3	-4.0	68.7	64.8	**54.8**
								Log Sum	68.0	**58.0**
Paving										
Concrete Mixer	2	80	290	20	0.40	-15.3	-4.0	64.7	60.8	**50.8**
Pavers	1	77	290	50	0.50	-15.3	-3.0	61.7	58.7	**48.7**
Paving Equipment	2	77	290	50	1.00	-15.3	0.0	61.7	61.7	**51.7**
Rollers	2	80	290	20	0.40	-15.3	-4.0	64.7	60.8	**50.8**
Tractors/Loaders/Backhoes	1	84	290	40	0.40	-15.3	-4.0	68.7	64.8	**54.8**
								Log Sum	68.4	**58.4**
Architectural Coating										
Air Compressors	1	78	290	40	0.40	-15.3	-4.0	62.7	58.8	**48.8**
								Log Sum	58.8	**48.8**

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

Receptor - Residential Uses to East

Construction Phase Equipment Item	# of Items	Item Lmax at 50 feet, dBA[1]	Distance to Receptor[3]	Item Usage Percent	Usage Factor	Dist. Correction dB	Usage Adj. dB	Receptor Item Lmax, dBA	Receptor Item Leq, dBA	With 6 Ft Wall Reduction
Demolition										
Concrete/Industrial Saws	1	82	160	40	0.40	-10.1	-4.0	71.9	67.9	**57.9**
Excavators	3	82	160	40	1.20	-10.1	0.8	71.9	72.7	**62.7**
Rubber Tired Dozers	2	82	160	40	0.80	-10.1	-1.0	71.9	70.9	**60.9**
								Log Sum	75.7	**65.7**
Grading										
Excavators	1	82	160	40	0.40	-10.1	-4.0	71.9	67.9	**57.9**
Rubber Tired Dozers	1	82	160	40	0.40	-10.1	-4.0	71.9	67.9	**57.9**
Tractors/Loaders/Backhoes	3	84	160	40	1.20	-10.1	0.8	73.9	74.7	**64.7**
Graders	1	85	160	40	0.40	-10.1	-4.0	74.9	70.9	**60.9**
								Log Sum	76.8	**66.8**
Building Construction										
Cranes	1	81	160	16	0.16	-10.1	-8.0	70.9	62.9	**52.9**
Forklifts[2]	3	48	160	40	1.20	-10.1	0.8	37.9	38.7	**28.7**
Generator Sets	1	81	160	50	0.50	-10.1	-3.0	70.9	67.9	**57.9**
Welders	3	74	160	40	1.20	-10.1	0.8	63.9	64.7	**54.7**
Tractors/Loaders/Backhoes	1	84	160	40	0.40	-10.1	-4.0	73.9	69.9	**59.9**
								Log Sum	73.2	**63.2**
Paving										
Concrete Mixer	2	80	160	20	0.40	-10.1	-4.0	69.9	65.9	**55.9**
Pavers	1	77	160	50	0.50	-10.1	-3.0	66.9	63.9	**53.9**
Paving Equipment	2	77	160	50	1.00	-10.1	0.0	66.9	66.9	**56.9**
Rollers	2	80	160	20	0.40	-10.1	-4.0	69.9	65.9	**55.9**
Tractors/Loaders/Backhoes	1	84	160	40	0.40	-10.1	-4.0	73.9	69.9	**59.9**
								Log Sum	73.5	**63.5**
Architectural Coating										
Air Compressors	1	78	160	40	0.40	-10.1	-4.0	67.9	63.9	**53.9**
								Log Sum	63.9	**53.9**

Notes:

(1) Source: Referenced noise levels from the Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (September 2018) and the FHWA Roadway Construction Noise Model User's Guide (January 2006)

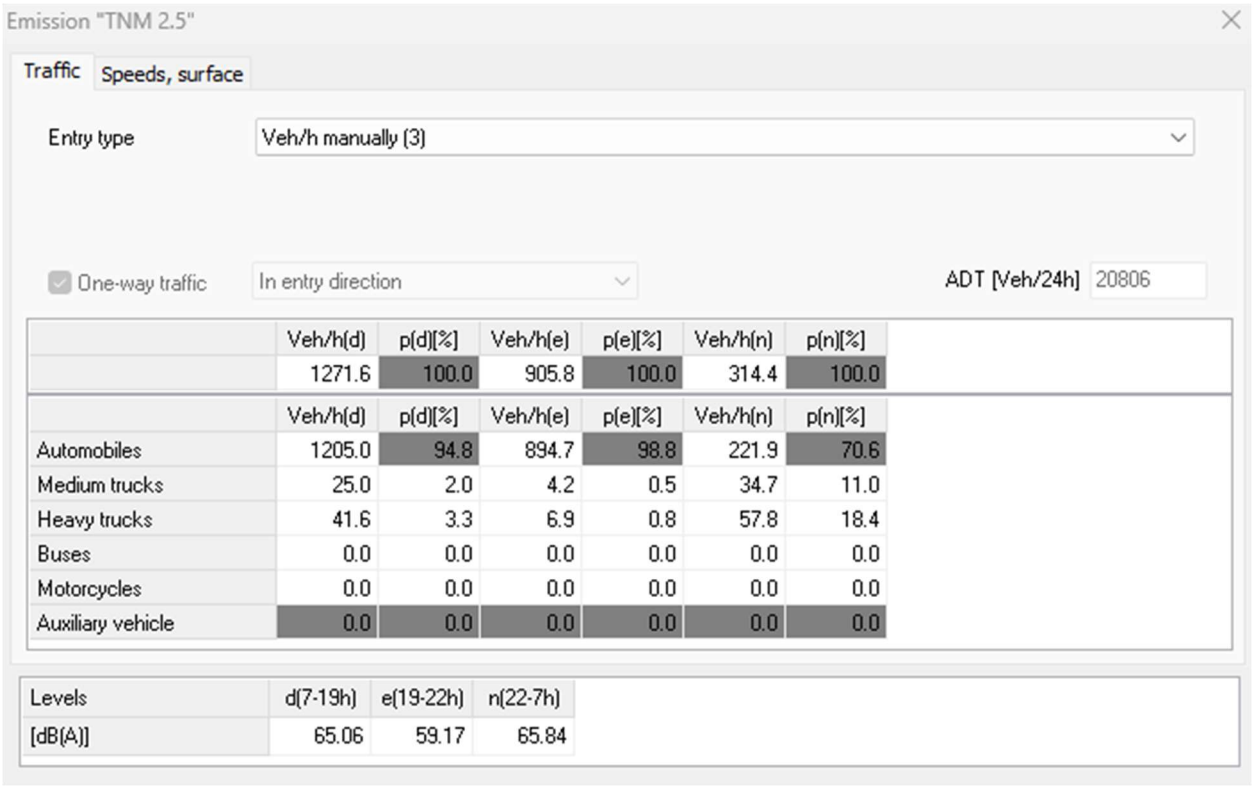
(2) Source: SoundPLAN reference list.

(3) Distance to receptor calculated from center of site. Construction noise projected from the center of the project site to nearest sensitive use (property line).

APPENDIX D

SOUNDPLAN WORKSHEETS

Existing Traffic - SoundPlan



Emission "TNM 2.5"

Traffic | Speeds, surface

Entry type: Veh/h manually (3)

One-way traffic: In entry direction

ADT [Veh/24h]: 20806

	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
	1271.6	100.0	905.8	100.0	314.4	100.0
	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
Automobiles	1205.0	94.8	894.7	98.8	221.9	70.6
Medium trucks	25.0	2.0	4.2	0.5	34.7	11.0
Heavy trucks	41.6	3.3	6.9	0.8	57.8	18.4
Buses	0.0	0.0	0.0	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary vehicle	0.0	0.0	0.0	0.0	0.0	0.0

Levels	d(7-19h)	e(19-22h)	n(22-7h)
[dB(A)]	65.06	59.17	65.84

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level Lden dB(A)	Conflict Lden dB
1	1	-	EG	-	54.1	-

Existing Plus Project Traffic - SoundPlan

Emission "TNM 2.5"

Traffic | Speeds, surface

Entry type: Veh/h manually (3)

One-way traffic: In entry direction

ADT [Veh/24h]: 20880

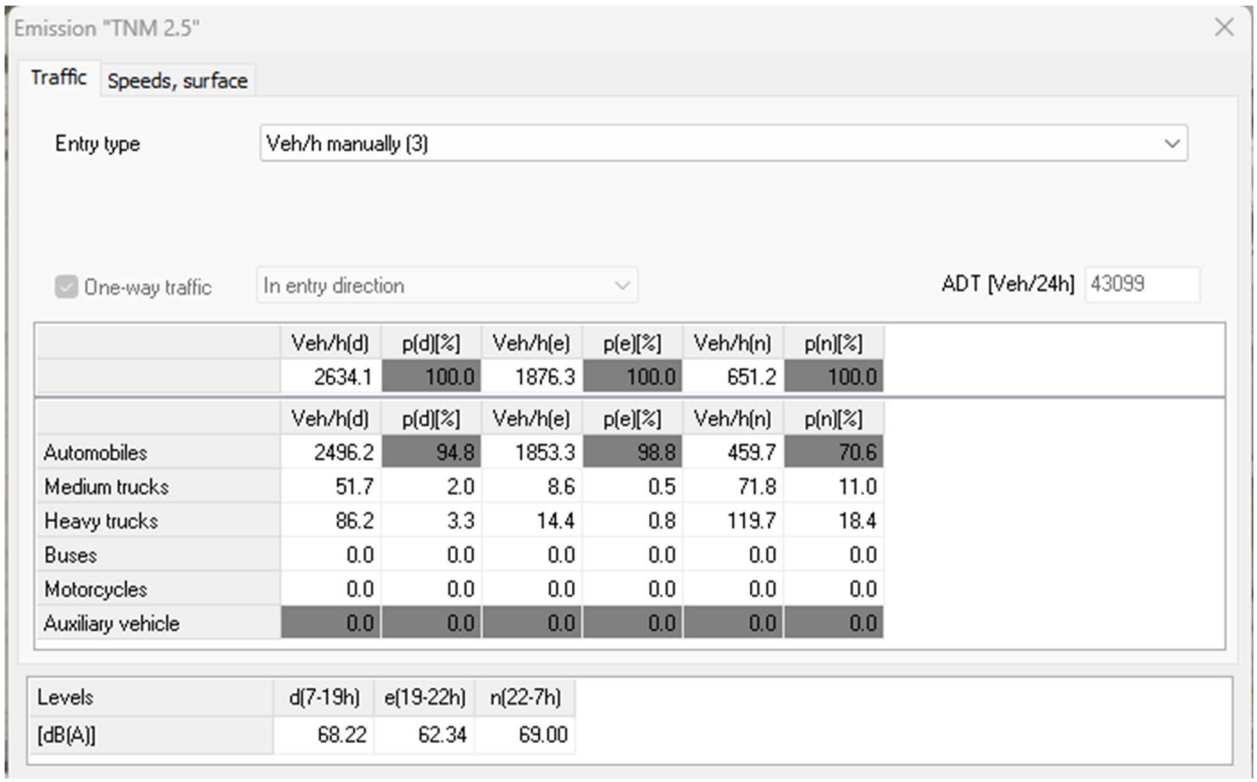
	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
	1275.9	100.0	909.5	100.0	315.6	100.0
	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
Automobiles	1209.0	94.8	898.3	98.8	222.8	70.6
Medium trucks	25.1	2.0	4.2	0.5	34.8	11.0
Heavy trucks	41.8	3.3	7.0	0.8	58.0	18.4
Buses	0.0	0.0	0.0	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary vehicle	0.0	0.0	0.0	0.0	0.0	0.0

Levels	d(7-19h)	e(19-22h)	n(22-7h)
[dB(A)]	65.08	59.21	65.86

Receiver list

No.	Receiver name	Building side	Floor	Limit Lden dB(A)	Level Lden dB(A)	Conflict Lden dB
1	1	-	EG	-	54.2	-

Future Traffic - SoundPlan



Emission "TNM 2.5"

Traffic | Speeds, surface

Entry type: Veh/h manually (3)

One-way traffic: In entry direction

ADT [Veh/24h]: 43099

	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
	2634.1	100.0	1876.3	100.0	651.2	100.0

	Veh/h(d)	p(d)[%]	Veh/h(e)	p(e)[%]	Veh/h(n)	p(n)[%]
Automobiles	2496.2	94.8	1853.3	98.8	459.7	70.6
Medium trucks	51.7	2.0	8.6	0.5	71.8	11.0
Heavy trucks	86.2	3.3	14.4	0.8	119.7	18.4
Buses	0.0	0.0	0.0	0.0	0.0	0.0
Motorcycles	0.0	0.0	0.0	0.0	0.0	0.0
Auxiliary vehicle	0.0	0.0	0.0	0.0	0.0	0.0

Levels	d(7-19h)	e(19-22h)	n(22-7h)
[dB(A)]	68.22	62.34	69.00

Receiver list

No.	Receiver name	Building side	Floor	Limit				Level				Conflict			
				Day	Evenin	Night	Lden	Day	Evenin	Night	Lden	Day	Evenin	Night	Lden
				dB(A)				dB(A)				dB			
1	1	-	EG	-	-	-	-	50.1	43.8	51.0	57.3	-	-	-	-

APPENDIX E

GROUNDBORNE VIBRATION WORKSHEETS

GROUNDBORNE VIBRATION ANALYSIS

Project:	19669 TTM 38636	Date:	10/4/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Residential to North		
Address:	9 Siena Vista Court, Rancho Mirage		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type =	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	15.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.452	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19669 TTM 38636	Date:	10/4/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Residential to North		
Address:	9 Siena Vista Court, Rancho Mirage		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type =	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	15.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.191	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19669 TTM 38636		Date: 10/4/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Residential to East		
Address:	7 Echo Lane, Rancho Mirage		
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment Type =	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	26.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.198	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19669 TTM 38636		Date: 10/4/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Residential to East		
Address:	7 Echo Lane, Rancho Mirage		
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	26.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.084	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19669 TTM 38636		Date: 10/4/23
Source:	Vibratory Roller		
Scenario:	Unmitigated		
Location:	Commercial to Southwest		
Address:	Resuscitation International (Surgical Supply Store), 35100 Bob Hope Drive #200, Rancho Mirage		
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	195.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.010	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS

Project:	19669 TTM 38636	Date:	10/4/23
Source:	Large Bulldozer		
Scenario:	Unmitigated		
Location:	Commercial to Southwest		
Address:	Resuscitation International (Surgical Supply Store), 35100 Bob Hope Drive #200, Rancho Mirage		

PPV = PPVref(25/D)^n (in/sec)

INPUT

Equipment Type	2	Large Bulldozer	INPUT SECTION IN GREEN
PPVref =	0.089	Reference PPV (in/sec) at 25 ft.	
D =	195.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	

Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.

RESULTS

PPV =	0.004	IN/SEC	OUTPUT IN BLUE

GROUNDBORNE VIBRATION ANALYSIS			
Project:	19669 TTM 38636		Date: 10/4/23
Source:	Vibratory Roller		
Scenario:	With Incorporation of BMPs		
Location:	Residential to North		
Address:	9 Siena Vista Court, Rancho Mirage		
PPV = PPVref(25/D)^n (in/sec)			
INPUT			
Equipment = Type	1	Vibratory Roller	INPUT SECTION IN GREEN
PPVref =	0.21	Reference PPV (in/sec) at 25 ft.	
D =	20.00	Distance from Equipment to Receiver (ft)	
n =	1.50	Vibration attenuation rate through the ground	
Note: Based on reference equations from Vibration Guidance Manual, California Department of Transportation, 2006, pgs 38-43.			
RESULTS			
PPV =	0.293	IN/SEC	OUTPUT IN BLUE



GANDDINI GROUP INC.

714.795.3100 | ganddini.com

Appendix I Tribal Consultation Letters

CITY OF RANCHO MIRAGE

July 31, 2024

Agua Caliente Band of Cahuilla Indians
Attn: Lacy Padilla, Director of Historic Preservation/THPO
5401 Dinah Shore Drive
Palm Springs, CA 92264

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Director of Historic Preservation/THPO Padilla,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 square feet to 16,932 square feet. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The project involves the demolition of an existing single-family residence built in 1958.

In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

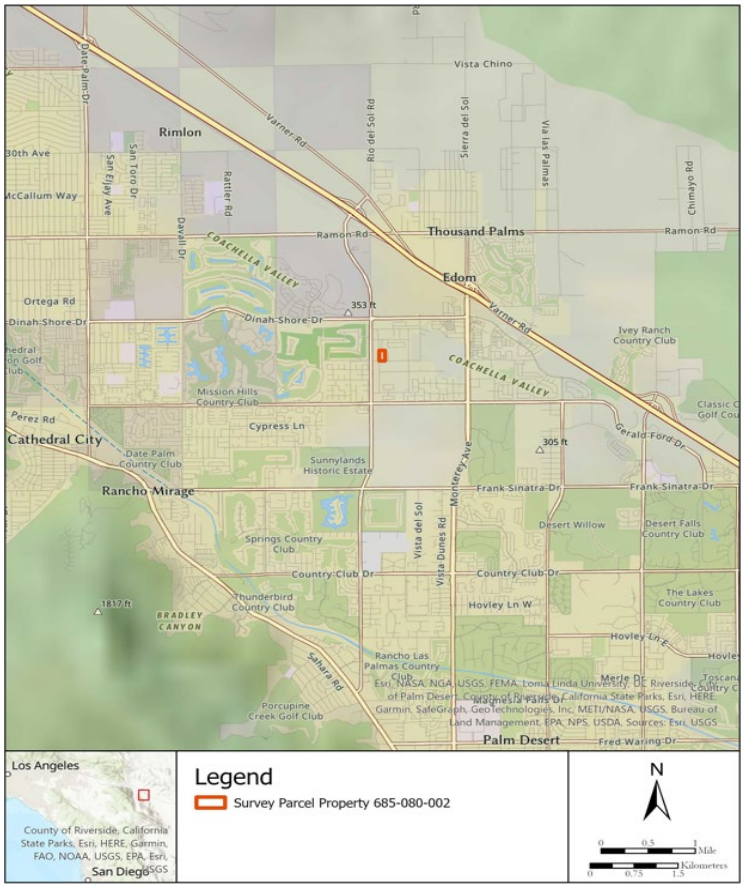


FIGURE 1. REGIONAL LOCATION MAP



FIGURE 2. PROJECT VICINITY MAP

CITY OF RANCHO MIRAGE

July 31, 2024

Augustine Band of Cahuilla Indians
Attn: , Tribal Operations
84-001 Avenue 54
Coachella, CA 92236

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Sir or Madam,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 square feet to 16,932 square feet. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The project involves the demolition of an existing single-family residence built in 1958.

In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Cabazon Band of Cahuilla Indians
Attn: Doug Welmas, Chairperson
84-245 Indio Springs Parkway
Indio, CA 92203

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Welmas,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Cahuilla Band of Indians
Attn: Anthony Madrigal, Tribal Historic Preservation Officer
52701 CA Highway 371
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Tribal Historic Preservation Officer Madrigal,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Cahuilla Band of Indians
Attn: Erica Schenk, Chairperson
52701 CA Highway 371
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Schenk,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Cahuilla Band of Indians
Attn: Bobby Ray Esparza, Cultural Director
52701 CA Highway 371
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Cultural Director Esparza,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Los Coyotes Band of Cahuilla and Cupeño Indians
Attn: Ray Chapparosa, Chairperson
P.O. Box 189
Warner Springs, CA 92086-0189

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Chapparosa,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Morongo Band of Mission Indians
Attn: Robert Martin, Chairperson
12700 Pumarra Road
Banning, CA 92220

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Martin,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 square feet to 16,932 square feet. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The project involves the demolition of an existing single-family residence built in 1958.

In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Morongo Band of Mission Indians
Attn: Ann Brierty, Tribal Historic Preservation Officer
12700 Pumarra Road
Banning, CA 92220

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Tribal Historic Preservation Officer Brierty,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Quechan Tribe of the Fort Yuma Reservation
Attn: Manfred Scott, Acting Chairman - Kw'ts'an Cultural Committee
P.O. Box 1899
Yuma, AZ 85366

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Acting Chairman - Kw'ts'an Cultural Committee Scott,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Quechan Tribe of the Fort Yuma Reservation
Attn: Jill McCormick, Historic Preservation Officer
P.O. Box 1899
Yuma, AZ 85366

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Historic Preservation Officer McCormick,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 square feet to 16,932 square feet. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The project involves the demolition of an existing single-family residence built in 1958.

In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Quechan Tribe of the Fort Yuma Reservation
Attn: Jordan Joaquin, President, Quechan Tribal Council
P.O. Box 1899
Yuma, AZ 85366

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear President, Quechan Tribal Council Joaquin,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 square feet to 16,932 square feet. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 square feet to 16,000 square feet in order to be compatible with the established lot sizes with the immediate area. The project involves the demolition of an existing single-family residence built in 1958.

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You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Ramona Band of Cahuilla
Attn: Joseph Hamilton, Chairperson
P.O. Box 391670
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Hamilton,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Santa Rosa Band of Cahuilla Indians
Attn: Vanessa Minott, Tribal Administrator
P.O. Box 391820
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Tribal Administrator Minott,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Santa Rosa Band of Cahuilla Indians
Attn: Steven Estrada, Tribal Chairman
P.O. Box 391820
Anza, CA 92539

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Tribal Chairman Estrada,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Soboba Band of Luiseno Indians
Attn: Jessica Valdez, Cultural Resource Specialist
P.O. Box 487
San Jacinto, CA 92581

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Cultural Resource Specialist Valdez,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Soboba Band of Luiseno Indians
Attn: Joseph Ontiveros, Tribal Historic Preservation Officer
P.O. Box 487
San Jacinto, CA 92581

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Tribal Historic Preservation Officer Ontiveros,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
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You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Torres-Martinez Desert Cahuilla Indians
Attn: Alesia Reed, Cultural Committee Chairwoman
P.O. Box 1160
Thermal, CA 92274

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Cultural Committee Chairwoman Reed,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Torres-Martinez Desert Cahuilla Indians
Attn: Thomas Tortez, Chairperson
P.O. Box 1160
Thermal, CA 92274

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Chairperson Tortez,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Torres-Martinez Desert Cahuilla Indians
Attn: Abraham Becerra, Cultural Coordinator
P.O. Box 1160
Thermal, CA 92274

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Cultural Coordinator Becerra,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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In accordance with PRC § 21080.3.1, you have thirty (30) days from the receipt of this letter to request consultation in writing for this project.

You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Torres-Martinez Desert Cahuilla Indians
Attn: Gary Resvaloso, TM MLD
P.O. Box 1160
Thermal, CA 92274

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear TM MLD Resvaloso,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

Project Title: Tentative Tract Map No. 38636
Project No.: EA23-0003, VAR24-0002, and TTM23-0001
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You may obtain more information about the project or request consultation by contacting the Planner directly at (760) 328-2266 or via email at JoyT@RanchoMirageCA.gov. In your request, please reference the project name and number as indicated above.

Sincerely,

Joy Tsai
Senior Planner

CITY OF RANCHO MIRAGE

July 31, 2024

Torres-Martinez Desert Cahuilla Indians
Attn: Mary Belardo, Cultural Committee Vice Chair
P.O. Box 1160
Thermal, CA 92274

RE: AB 52 Consultation for Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001) in the City of Rancho Mirage, Riverside County, California (Assessor Parcel Number 685-080-002)

Dear Cultural Committee Vice Chair Belardo,

The City of Rancho Mirage is the lead agency, pursuant to the California Environmental Quality Act (CEQA), for the proposed project described below. The Native American Heritage Commission has identified your organization as having or potentially having traditional lands or cultural places located within the City boundaries. Pursuant to the provisions of Assembly Bill (AB) 52, the City hereby extends an invitation to consult on the CEQA review of this proposed project in order to identify tribal cultural resources that may be impacted by the project.

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Sincerely,

Joy Tsai
Senior Planner

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

RECEIVED
DEVELOPMENT SERVICES DEPT
08/22/2024 11:41:10 AM

03-008-2024-008

August 22, 2024

[VIA EMAIL TO:joyt@ranchomirageca.gov]
City of Rancho Mirage
Ms. Joy Tsai
69-825 Highway 111
Rancho Mirage, California 92270

Re: TTM23-0001

Dear Ms. Joy Tsai,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the TTM23-0001 project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*Formal government to government consultation under California Assembly Bill No. 52 (AB-52).

*A cultural resources inventory of the project area by a qualified archaeologist prior to any development activities in this area.

*Copies of any cultural resource documentation (report and site records) generated in connection with this project.

*A copy of the records search with associated survey reports and site records from the information center.

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION



Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

RECEIVED
DEVELOPMENT SERVICES DEPT
09/11/2024 4:43:21 PM

03-008-2024-008

September 11, 2024

[VIA EMAIL TO:joyt@ranchomirageca.gov]
City of Rancho Mirage
Ms. Joy Tsai
69-825 Highway 111
Rancho Mirage, California 92270

Re: TTM23-0001

Dear Ms. Joy Tsai,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the TTM23-0001 project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

*The presence of an archaeologist that meets the Secretary of Interior's standards during any ground disturbing activities.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

AUGUSTINE BAND OF CAHUILLA INDIANS

84-001 AVENUE 54 COACHELLA, CA 92236 | T: 760-398-4722 F: 760-369-7161

TRIBAL CHAIRPERSON: AMANDA AUGUSTINE TRIBAL TREASURER: WILLIAM VANCE

TRIBAL COUNCIL MEMBER: RONNIE VANCE

RECEIVED
DEVELOPMENT SERVICES DEPT
08/06/2024 1:17:46 PM

Date: 08/06/2024

Dear: Joy Tsai
Senior Planner

SUBJECT: Tentative Tract Map No. 38636 (Planning Case Nos. EA23-0003, VAR24-0002, TTM23-0001)

Thank you for the opportunity to offer input concerning the development of the above-identified project. We appreciate your sensitivity to the cultural resources that may be impacted by your project and the importance of these cultural resources to the Native American peoples that have occupied the land surrounding the area of your project for thousands of years. Unfortunately, increased development and lack of sensitivity to cultural resources have resulted in many significant cultural resources being destroyed or substantially altered and impacted. Your invitation to consult on this project is greatly appreciated.

At this time, we are unaware of specific cultural resources that may be affected by the proposed project, however, in the event, you should discover any cultural resources during the development of this project please contact our office immediately for further evaluation.

Very truly yours,

Jacobia Kirksey

Jacobia Kirksey, Tribal Operations Specialist
Augustine Band of Cahuilla Indians



TRIBAL HISTORIC PRESERVATION OFFICE

RECEIVED
DEVELOPMENT SERVICES DEPT
08/13/2024 9:44:54 AM

MORONGO BAND OF MISSION INDIANS
A SOVEREIGN NATION

VIA ELECTRONIC MAIL

JoyT@RanchoMirageCA.gov

Joy Tsai, Senior Planner
DEVELOPMENT SERVICES DEPARTMENT
69-825 Highway 111
Rancho Mirage CA 92270

August 12, 2024

Re: AB 52 Consultation for Tentative Tract Map No. 38636, City of Rancho Mirage, California

The Morongo Band of Mission Indians (Tribe/MBMI) Tribal Historic Preservation Office received your letter regarding the above referenced Project. The proposed Project is not located within the boundaries of the ancestral territory or traditional use area of the Cahuilla and Serrano people of the Morongo Band of Mission Indians.

Thank you for notifying the MBMI about this project. MBMI encourages your consultation with tribes more closely associated with the lands upon which the project is located.

Respectfully,

Bernadette Ann Brierty

Bernadette Ann Brierty
Tribal Historic Preservation Officer
Morongo Band of Mission Indians

CC: Morongo THPO

Appendix J Agency Comment Letters

COACHELLA VALLEY WATER DISTRICT
Established in 1918 as a public agency

GENERAL MANAGER
Jim Barrett

CLERK OF THE BOARD
Sylvia Bermudez

23 JUN 15 PM 1:40

ASSISTANT GENERAL MANAGER
Robert Cheng

ASSISTANT GENERAL MANAGER
Dan Charlton

June 12, 2023

Joy Tsai, Senior Planner
Development Services Department
City of Rancho Mirage
69825 Highway 111
Rancho Mirage, CA 92270

Dear Ms. Tsai:

Subject: City of Rancho Mirage, Development Services Department, Request for Comments, Tentative Tract Map No. 38636 (EA23-003, TTM23-0001)

This area is designated Zone X on Federal Flood Insurance rate maps, which are in effect at this time by the Federal Emergency Management Agency (FEMA).

Flood protection measures for local drainage shall comply with California Drainage Law and provide that stormwater flows are received onto and discharged from this property in a manner that is reasonably compatible with predevelopment conditions.

The City of Rancho Mirage (City) shall require mitigation measures to be incorporated into the development to prevent flooding of the site or downstream properties. These measures shall require 100 percent on-site retention of the incremental increase of runoff from the 100-year storm. In addition, flood protection measures shall comply with California Drainage Law and provide that offsite stormwater flows are received onto the property and discharged from the property in a manner that is reasonably compatible with redevelopment conditions. Coachella Valley Water District (CVWD) requests review of said flood protection measures for compliance with California Drainage Law from a regional valley floor drainage perspective.

The project is located within the service area of CVWD for the provision of domestic water and sanitation service. The initiation of said service to this area will be subject to the satisfaction of terms and conditions established by CVWD and imposed from time to time, including but not limited to fees and charges, water conservation measures, etc.

CVWD may need additional facilities to provide for the orderly expansion of its domestic water and sanitation systems. These facilities may include pipelines, wells, reservoirs, booster pumping stations, lift stations, treatment plants and other facilities. The developer may be required to construct/install these facilities and then convey said facilities to CVWD along with the land and/or easements on which these facilities will be located. The terms and conditions for the planning, design, construction/installation, and conveyance of property interests shall be determined by CVWD pursuant to its rules and regulations as said requirements may be revised from time to time. These sites shall be shown on the tract map as lots and/or easements to be deeded to CVWD for "CVWD public services" purposes.

This notice of domestic water and sanitation service availability only applies to the specific property for which it was issued and shall expire three (3) years from date of issuance. Unless or until all requirements for the initiation of service are met, the developer shall not be deemed to have any vested right or other commitment to receive water and/or sanitation service. In the event all of the terms, conditions, fees and charges are not satisfied on or before the expiration date, this notice shall expire. Upon expiration, the developer will be required to submit a new application and otherwise comply with any and all new or amended requirements for the provision of service as may be determined by CVWD pursuant to its rules and regulations.

Domestic water and sanitation service remain at all times subject to changes in regulations adopted by CVWD's Board of Directors including reductions in, or suspensions of, service.

The project lies within the Whitewater River Subbasin Area of Benefit. Groundwater production within the area of benefit is subject to a replenishment assessment in accordance with the State Water Code.

Any entity producing more than 25 acre-feet of water during any year from one or more wells must equip the well(s) with a water-measuring device. A CVWD Water Production Metering Agreement is required to provide CVWD staff with the authority to regularly read and maintain this water-measuring device.

The Sustainable Groundwater Management Act (SGMA) is a law requiring that groundwater basins are managed to achieve sustainability. In accordance with the SGMA, CVWD submitted the Coachella Valley Water Management Plan as an alternative to a Groundwater Sustainability Plan (Alternative Plan) for the Indio Subbasin. On July 17, 2019, the Department of Water Resources (DWR) sent a notification approving the Alternative Plan. The goal of the Alternative Plan is to reliably meet current and future water demands in a cost-effective and sustainable manner. This development lies within the Indio Subbasin and will contribute to the total water demand in the subbasin. The elements and actions described in the Alternative Plan shall be incorporated into the design, construction, and operation of this development to reduce its negative impact on the Indio Subbasin.

If you have any questions, please call Tommy Fowlkes, Development Services Supervisor, extension 3535.

Sincerely,

Carrie Oliphant

Carrie Oliphant
Director of Engineering

cc: Shantel Bacon
Supervising Environmental Health Specialist
Riverside County Department of Environmental Health
Environmental Protection and Oversight Division
47-950 Arabia Street, Suite A
Indio, CA 92201

TH: al\Eng\Dev Srvs\2023\June\DRL PZ 23-14772 City of Rancho Mirage TTM 38636.doc
File: 0163.1, 0421.1, 0721.1, 1150.08
Geo. 040630-2
PZ 23-14772

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06/08/2023 3:41:08 PM

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Since 1911

June 8, 2023

Ms. Joy Tsai
Senior Planner
Development Services Department
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage CA 92270

SUBJECT: Request for Agency Comments - Tentative Tract Map TTM 38636 in Rancho Mirage

Dear Ms. Tsai:

On May 24, 2023, the Imperial Irrigation District received from the City of Rancho Mirage Development Services Department, a request for agency comments on Tentative Tract Map 38636. The applicant proposes to subdivide a 5.04-acre parcel into nine (9) single-family residential lots and common area lots. The subject property is located at 72094 Ginger Rogers Road, at the northeast corner of Ginger Rogers Road and Landy Lane, in Rancho Mirage, CA (APN 685-080-002).

IID has reviewed the project information and, although no residential development is being proposed at this time, has the following comments when the project reaches the design and implentation phase:

1. IID will not begin any studies, engineering or estimate costs to provide electrical service to the development project until the applicant submits a customer project application (available at http://www.iid.com/home/showdocument?id=12923 and detailed loading information, panel sizes, project schedule and estimated in-service date. Applicant shall bear all costs associated with providing electrical service to the development project, including but not limited to the construction of distribution backbone feeder and line extensions, underground conduit systems and the re-configuration of distribution lines and related upgrades as well as applicable permits, zoning changes, landscaping (if required by the City) and rights-of-way and easements.

2. However, based on the preliminary information provided to IID, the district can accommodate the power requirements of the project by extending distribution primary backbone lines (conduit and cable) from existing distribution lines running on the south side of the project site, up to the edge of property along Landy Lane.

3. The district's ability to provide service from existing infrastructure is based on current available capacity, which may be impacted by future development in the area.

4. It is important to note that a detailed and final study will be developed once a customer project application and loading calculations are received. This detailed information will allow IID to perform an accurate assessment and provide a full report of any potential impacts and mitigation measures. The conditions of service could change as a result of the additional studies.

5. Underground infrastructure that includes trenching, conduits, pull boxes, switch boxes and pads should be installed following IID approved plans. Physical field installation of underground infrastructures should be verified and approved by an IID inspector prior to cable installation as per IID Developer's Guide (available at the district website https://www.iid.com/home/showdocument?id=14229).

6. IID Regulations governing line extensions can be found at:
   No. 2 (http://www.iid.com/home/showdocument?id=2540),
   No. 13 (http://www.iid.com/home/showdocument?id=2553),
   No. 15 (http://www.iid.com/home/showdocument?id=2555),
   No. 20 (http://www.iid.com/home/showdocument?id=2560) and
   No. 23 (https://www.iid.com/home/showdocument?id=17897).

7. For additional information regarding electrical service for the projects, the applicant should be advised to contact the IID Energy - La Quinta Division Customer Operations, 81-600 Avenue 58 La Quinta, CA 92253, at (760) 398-5841 and speak with the project development planner assigned to the area.

8. It is important to note that IID's policy is to extend its electrical facilities only to those projects that have obtained the approval of a city or county planning commission and such other governmental authority or decision-making body having jurisdiction over said projects.

9. The applicant will be required to provide rights-of-way and easements for power line extensions and/or any other infrastructure needed to serve the project.

10. The applicant will be required to provide and bear all costs associated with acquisition of rights of way, easements, and infrastructure relocations deemed necessary to accommodate street or road improvements imposed by the municipality.

11. Any construction or operation on IID property or within its existing and proposed right of way or easements including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; and all water, sewer,

storm water, or any other above ground or underground utilities; will require an encroachment permit, or encroachment agreement (depending on the circumstances). A copy of the IID encroachment permit application and instructions for its completion are available at https://www.iid.com/about-iid/department-directory/real-estate. The IID Real Estate Section should be contacted at (760) 339-9239 for additional information regarding encroachment permits or agreements.

12. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and/or distribution lines, ancillary facilities associated with the conveyance of energy service; the acquisition and dedication of real property, rights of way and/or easements for the siting and construction of electrical utility substations, electrical transmission and/or distribution lines and ancillary facilities associated with the conveyance of energy service, etc.) need to be included as part of the project's California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until such time as the environmental documentation is amended and environmental impacts are fully mitigated. **Any mitigation necessary as a result of the construction, relocation and/or upgrade of IID facilities is the responsibility of the project proponent**.

13. Dividing a project into two or more pieces and evaluating each piece in a separate environmental document (Piecemealing or Segmenting), rather than evaluating the whole of the project in one environmental document, is explicitly forbidden by CEQA, because dividing a project into a number of pieces would allow a Lead Agency to minimize the apparent environmental impacts of a project by evaluating individual pieces separately, each of which may have a less-than-significant impact on the environment, but which together may result in a significant impact. Segmenting a project may also hinder developing comprehensive mitigation strategies. In general, if an activity or facility is necessary for the operation of a project, or necessary to achieve the project objectives, or a reasonably foreseeable consequence of approving the project, then it should be considered an integral project component that should be analyzed within the environmental analysis. The project description should include all project components, including those that will have to be approved by responsible agencies. The State CEQA Guidelines define a project under CEQA as "the whole of the action" that may result either directly or indirectly in physical changes to the environment. This broad definition is intended to provide the maximum protection of the environment. CEQA case law has established general principles on project segmentation for different project types. For a project requiring construction of offsite infrastructure, the offsite infrastructure must be included in the project description. *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App. 4th 713.

14. Applicant should be advised that landscaping can be dangerous if items are planted too close to IID's electrical equipment. In the event of an outage, or equipment failure, it is vital that IID personnel have immediate and safe access to its equipment to make the needed repairs. For public safety, and that of the electrical workers, it is important to adhere to standards that limit landscaping around electrical facilities. IID landscaping guidelines are available at https://www.iid.com/energy/vegetation-management.

Should you have any questions, please do not hesitate to contact me at (760) 482-3609 or at dvargas@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,

Donald Vargas
Compliance Administrator II

Sergio Quiroz – Interim General Manager
Mike Pacheco – Manager, Water Dept.
Jamie Asbury – Manager, Energy Dept.
Matthew H Smelser – Deputy Mgr. Energy Dept.
Daryl Buckley – Mgr. of Distribution Srvcs. & Maint. Oprtns., Energy Dept.
Geoffrey Holbrook – General Counsel
Michael P. Kemp – Superintendent General, Fleet Services and Reg. & Environ. Compliance
Laura Cervantes. – Supervisor, Real Estate

From: Charnoske, John L
To: Joy Tsai
Cc: Diaz Jr., Pedro
Subject: RE: Request for Comments - Tentative Tract Map TTM 38636 City of Rancho Mirage
Date: Friday, May 26, 2023 7:55:23 AM
Attachments: image001.png
image002.jpg

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Good morning Joy,

The Developer can reach out to me now if they like. All Spectrum can do at this early stage is just keep this project on file. We normally start the ball rolling once the developer receive SCE preliminary plans.

Thanks,

John Charnoske | Construction Coordinator II
83-473 Avenue 45 Indio CA 92001
Office: (760) 904-5457
Cell: (760) 250-2952
John.charnoske@charter.com

From: Joy Tsai <joyt@RanchoMirageCA.gov>
Sent: Thursday, May 25, 2023 1:17 PM
To: Charnoske, John L <John.Charnoske@charter.com>
Cc: Diaz Jr., Pedro <Pedro.Diaz1@charter.com>
Subject: [EXTERNAL] RE: Request for Comments - Tentative Tract Map TTM 38636 City of Rancho Mirage

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Good afternoon John,

Thank you for your response. The tentative map has not received approval yet. Should the developer reach out to Spectrum now, or wait until after they receive tentative map approval from the City?

Joy Tsai

City Seal.jpg

Senior Planner
Phone: 760-328-2266 Ext. 256
E-mail: joyt@RanchoMirageCAgov
69-825 Highway 111, Rancho Mirage, California, 92270
wwwRanchoMirageCa.gov

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Some or all of the content of this e-mail and its attachments may be subject to disclosure pursuant to the California Public Records Act (Government Code section 6250, et seq.)

From: Charnoske, John L <John.Charnoske@charter.com>
Sent: Thursday, May 25, 2023 7:56 AM
To: Joy Tsai <joyt@RanchoMirageCA.gov>
Cc: Diaz Jr., Pedro <Pedro.Diaz1@charter.com>
Subject: RE: Request for Comments - Tentative Tract Map TTM 38636 City of Rancho Mirage

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

Good Morning Joy,

Thank you for reaching out to us. As part of our construction process. We would like the developer to please contact us so we can start our survey process.

Thank you and have a great day,

John Charnoske | Construction Coordinator III
83-473 Avenue 45 Indio CA 92001
Office: (760) 904-5457
Cell: (760) 250-2952
John.charnoske@charter.com

From: Diaz Jr., Pedro <Pedro.Diaz1@charter.com>
Sent: Thursday, May 25, 2023 7:15 AM
To: Charnoske, John L <John.Charnoske@charter.com>
Cc: Diaz Jr., Pedro <Pedro.Diaz1@charter.com>
Subject: FW: Request for Comments - Tentative Tract Map TTM 38636 City of Rancho Mirage

God morning

From: Joy Tsai <joyt@RanchoMirageCA.gov>
Sent: Wednesday, May 24, 2023 4:45 PM
Subject: [EXTERNAL] Request for Comments - Tentative Tract Map TTM 38636 City of Rancho Mirage

CAUTION: The e-mail below is from an external source. Please exercise caution before opening attachments, clicking links, or following guidance.

Good afternoon,

For your comment, attached is a tentative tract map application. The Subject Property is located at 72094 Ginger Rogers Road (APN: 685-080-002), at the northeast corner of Ginger Rogers Road and Landy Lane in the City of Rancho Mirage. The applicant is proposing to subdivide a 5.04-acre parcel into nine (9) single-family residential lots and common area lots. No residential development is being proposed with this request. Please review and return any comments to me by June 8, 2023, to this email (JoyT@RanchoMirageCAgov).

Thank you,
Joy

City Seal.jpg

Joy Tsai
Senior Planner
Phone: 760-328-2266 Ext. 256
E-mail: joyt@RanchoMirageCAgov
69-825 Highway 111, Rancho Mirage, California, 92270
www.RanchoMirageCa.gov

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9-Lot Subdivision
72094 Ginger Rogers Road
Tentative Tract Map No. 38636
Final Initial Study/
Mitigated Negative Declaration

Lead Agency:

City of Rancho Mirage

69-825 Highway 111

Rancho Mirage, California 92270

Prepared by:

PGN

PO Box 2473

Menifee, CA 92586-1473

September 2025

CEQA Requirements Regarding Comments and Responses

CEQA Guidelines, Section 15204(b), outlines parameters for submitting comments on negative declarations. Persons and public agencies should focus the on the proposed finding that the project will not have a significant effect on the environment. If persons and public agencies believe that the project may have a significant effect, they should:

Identify the specific effect,
Explain why they believe the effect would occur, and
Explain why they believe the effect would be significant.

CEQA Guidelines, Section 15204(c), further advises that reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence.

Comments and Responses to the Comments on the Draft IS/MND

The City received one comment letter on the Draft Initial Study/Mitigated Negative Declaration for the proposed Project. The letter dated July 1, 2025 was from the Kim Freeburn, Environmental Program Manager with the California Department of Fish and Wildlife. A response to this comment letter follows.

RESPONSE TO COMMENT
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW)
COMMENT LETTER A (JULY 1, 2025)

RESPONSE COMMENT

A-1 The comment is noted. This comment is understood as an introductory citation and does not raise any specific environmental concerns. It should be noted that the Project lies within the corporate boundaries of the City of Rancho Mirage and not the City of Coachella as referenced in the July 1, 2025 CDFW letter.

A-2 This is an introductory comment describing CDFW's role as a trustee agency and responsible agency. The comment regarding the regulatory requirements for any "take" of an endangered species is acknowledged. The comment does not raise any issue with the analysis if the IS/MND. For this reason, no further response to this comment is provided.

A-3 This comment provides a summary of the Project and does not identify a specific concern or question regarding the adequacy of the IS/MND in identifying and analyzing the potential environmental impacts of the project. For this reason, no further response to this comment is provided.

A-4 The IS/MND adequately discloses the Project's potentially significant impacts on biological resources, includes a complete and stable project description, provides mitigation measures to reduce biological impacts to less than significant levels, and complies with CEQA's requirements. The Project is the subdivision of land and does not authorize the construction of residential structures. Additional review will be required by the City for any development of the land.

A-5 The IS/MND adequately discloses the Project's environmental setting on page 11 and includes more specific detail within the General Biological Assessment prepared by Natural Resources Assessment, Incorporated (NRAI) for the existing single family residential lot. The Project is the subdivision of land and does not authorize the construction of residential structures. Additional review will be required by the City for any development of the land. See response A-8 for Burrowing owl concerns.

A-6 The commenter's opinion is noted.

A-7 The comment is noted. However, the commenter appears to imply that birds may nest on the site outside of the established nesting period, without providing substantial evidence. The City's responsibility is to assure that nesting birds are not disturbed, and that construction be avoided until the young have fledged. It is important to note that Migratory Bird Treaty Act (MBTA) covered species include almost all bird species that could nest on the site, and that since a pre-construction survey will be required, all birds

nesting on the site will be identified, regardless of MBTA status. The Initial Study mitigates impacts to nesting bird species to less than significant levels as written. The mitigation measure and the Initial Study correctly protect nesting birds, and do not require amendment.

A-8 The comment is noted. However, the commenter provides no evidence to contradict the professional biologist's statement that no owl, sign or appropriate burrows are located on the site. To address CDFW's concerns about the methodology employed the following clarification is provided. Two biologists from Natural Resources Assessment Incorporated (NRAI)—one with approximately 40 years of relevant experience and the other with over 30 years—conducted thorough surveys by walking parallel north-south transects across the entire property. Given the small size of the site and the expertise of the two biologists, they confidently assert that 100% of the area was surveyed. Additionally, adjacent areas were walked along their edges and scanned using binoculars to check for the presence of burrowing owls or their burrows. The biologists have experience with the species, including recent sightings of burrowing owls during surveys near the Salton Sea, in San Jacinto, Chino, and Rialto, California, where numerous burrowing owls were identified and mapped on the former airport property in Rialto. It is important to note that while they found no suitable conditions for burrowing owls on the project site at the time of the survey, this does not rule out the possibility that burrowing owls could inhabit the site in the future.

The biologists based their conclusion on Burrowing Owl on the following:

1. No owls, sign (i.e., pellets, feathers, or whitewash), or appropriately-sized burrows were detected on the site or on visible parts of the adjacent property;
2. The presence of domesticated dogs and cats in the Project area; and,
3. Myoma fine sand soils formed from wind-blown sand alluvium are not favorable to the species where there is sparse cover as a quick examination of nearby occurrences from the CNDDB overlaid on NRCS soils and digital imagery shows.

As a result, the biologist had good visibility of site conditions, and would have seen owl, sign or burrows if they occurred.

Small mammal burrows, a potential indicator of burrowing owl presence, were not found. Small mammal consumption increases in spring and summer diets in many places but may be less important in parts where small mammals are less common.[1,2] In such areas, their diets may be subsidized by human activities that attract a wide array of

[1] Wingert, C.M., 2012. *Seasonal food habits of burrowing owls (Athene cunicularia) in human-altered landscapes*. California Polytechnic State University.
[2] York, M.M., Rosenberg, D.K. and Sturm, K.K., 2002. Diet and food-niche breadth of Burrowing Owls (Athene cunicularia) in the Imperial Valley, California. *Western North American Naturalist*, pp.280-287.

insects and rodents.[3,4] They concluded that burrowing owl may occur on the site if temporary or permanent manufactured structures are placed there prior to construction. The Initial Study fully acknowledges the CDFW's requirements. They generally agree with the recommendations for preconstruction surveys, however, they do not agree that the Project requires a protocol survey based on the above findings.

The City is aware that the species could move onto the site prior to construction and has provided the appropriate mitigation to protect the species from take. The mitigation measure is appropriate and complete, lists performance standards should the species be identified, and no further amendment is required.

A-9 The commenter is incorrect. The collection of sand-dependent species is not required under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP), nor is it recommended by the Project biologist. NRAI's General Biological Assessment included an evaluation of the habitats on site and in surrounding areas to determine whether there are other sensitive resources of concern in this area of Rancho Mirage that may be present on site. In addition to those resources identified by the CVMSHCP, the field team focused on evaluating habitat for these sensitive resources potentially both on and in the surrounding area, including but not limited to those listed, or candidates for listing by the USFWS, California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS). The report concluded that the site is disturbed and that the CVMSHCP did not identify the Project area as required for protection and/or the collection of sand-dependent species. As allowed under CEQA, requirements of law are not mitigation measures, and are assumed to be implemented. Additionally, through the Project's payment of the Local Development Mitigation Fee (LDMF) as noted in Mitigation Measure BIO-3, it will offset its impact on sand-dependent species and will be consistent with the CVMSHCP.

A-10 The commenter's opinion is noted, but provides no substantial evidence that the Project (proposed subdivision) will result in substantial lighting, or that the lighting proposed for the Project will impact biological resources. The proposed Project's lighting must be designed so as to prevent emissions of glare or light beyond the property line in accordance with City Municipal Code Section 17.18.050 and the Community Design Element in the City's General Plan. All exterior lighting at the project site would be conditioned to be Dark-Sky compliant, in order to reduce the amount of light emitted at the project site at night and preserve the desert night sky. Further, the City's construction hour restrictions make it unlikely that construction will occur at night. Adherence with the Municipal Code and General Plan will help ensure that lighting is consistent with the recommended standards and guidance and therefore, lighting on the

[3] Bartok, N.D. and Conway, C.J., 2010. Factors affecting the presence of nesting Burrowing Owls in an agricultural landscape. *Journal of Raptor Research*, *44*(4), pp.286-293

[4]. Moulton, C.E., Brady, R.S. and Belthoff, J.R., 2006. Association between wildlife and agriculture: underlying mechanisms and implications in Burrowing Owls. *The Journal of wildlife management*, *70*(3), pp.708-716.

property would not pose significant impacts to wildlife; no change to the IS/MND is required.

A-11 The comment is noted. The Project is the subdivision of land. The landscape lots associated with the proposed Project are landscaped parkways and will be designed to match the existing desert-appropriate landscaped parkways adjacent to the Project site. The Initial Study noted that future development of the residential lots will require further approvals by the City and will be required to comply with both the City's water efficient landscaping standards and CVWD's water conservation requirements in landscaping, which includes water budgeting for landscaped areas. The subsequent development of the land for residential purposes will therefore be regulated to assure low water use in landscaping, as clearly stated in the Initial Study. No further discussion or additional mitigation is required for the subdivision.

A-12 There were no findings that merit inclusion into the CNDDB, since no special status species or sensitive communities were found. This comment does not address the adequacy or completeness of the IS/MND; does not raise environmental issues; and does not request the incorporation of additional information relevant to environmental issues. Such comments do not require a response, pursuant to Section 15088(a) of the State CEQA Guidelines. No further response is required.

A-13 The Project Applicant shall pay the environmental document filing fee upon filing the Notice of Determination.

A-14 The City thanks the CDFW for their participation in the CEQA process. This comment concludes CDFW's letter stating the IS/MND does not adequately mitigate the Project's impacts to biological resources, is otherwise inadequate, and that the City is required to recirculate the IS/MND. The City disagrees with the conclusion for the reasons discussed in Responses A-1 through A-11 above. CDFW's comments do not present significant new information that would require a revised MND, but merely amplify the conclusions of the IS/MND. There are no recommended changes that warrant recirculation of the IS/MND. The City has prepared an IS/MND which complies with CEQA and which will mitigate the impacts of the Project to less than significant levels. No changes to the document are necessary.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Inland Deserts Region
3602 Inland Empire Boulevard, Suite C-220
Ontario, CA 91764
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Letter A – California Department of Fish and Wildlife

July 1, 2025
Sent via email

Joy Tsai
Senior Planner
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, CA
92270 joyt@ranchomirageca.gov

9-Lot Subdivision (Tentative Tract Map No. 38636) Project (PROJECT)
Mitigated Negative Declaration (MND)
SCH# 2025051428

Dear Joy Tsai:

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt a Mitigated Negative Declaration from the City of Coachella (City) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

A-1

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on Projects and related

A-2

[1]CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code. A-2

PROJECT DESCRIPTION SUMMARY

Proponent: 72094 Ginger Rogers Road, LLC

Objective: The Project proposes to subdivide 5.04 gross acres into nine single-family residential lots with lots ranging in size from 16,122 sq. ft. to 16,841 sq. ft. A private street is proposed, in addition to two retention basins and perimeter landscaping within the project common areas. The project involves the demolition of an existing single-family residence. The proposed Project would include streetlights and security lighting. A-3

Location: The proposed Project site is located in the northeastern portion of the City of Rancho Mirage in the County of Riverside. The proposed Project is located at the following address: 72094 Ginger Rogers Road, Rancho Mirage, CA 92270. The Project site is composed of one parcel identified as Assessor Parcel Number 685-080-002.

Timeframe: The MND proposes a Project build-out and start of operations in 2026.

COMMENTS AND RECOMMENDATIONS

CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The MND has not adequately identified and disclosed the Project's impacts (i.e., direct, indirect, and cumulative) on biological resources and whether those impacts are reduced to less than significant. A-4

CDFW's comments and recommendations on the MND are explained in greater detail below and summarized here. CDFW is concerned that the MND does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW requests that additional information and analyses be added

to a revised MND, along with avoidance, minimization, and mitigation measures that avoid or reduce impacts to a level less than significant.

A-4

Existing Environmental Setting

Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed Project. CDFW is concerned that the assessment of the existing environmental setting has not been adequately analyzed in the MND. CDFW is concerned that without a complete and accurate description of the existing environmental setting, the MND may provide an incomplete analysis of Project-related environmental impacts.

A-5

The MND lacks a complete and appropriate assessment of biological resources within the Project site and surrounding area specifically as it relates burrowing owl (*Athene cunicularia*), as discussed in the Burrowing Owl section below. A complete and accurate assessment of the environmental setting and Project-related impacts to biological resources is needed to both identify appropriate avoidance, minimization, and mitigation measures and demonstrate that these measures reduce Project impacts to less than significant.

Mitigation Measures

CEQA requires that an MND include mitigation measures to avoid or reduce significant impacts. CDFW is concerned that the mitigation measures proposed in the MND are not adequate to avoid or reduce impacts to biological resources to below a level of significance. To support the City in ensuring that Project impacts to biological resources are reduced to less than significant, CDFW recommends revising the mitigation measure for nesting birds and burrowing owl and adding mitigation measures for artificial nighttime lighting and the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

A-6

1) Nesting Birds

It is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

A-7

With regard to the CVMSHCP, per its associated Implementing Agreement (IA) and Permits from CDFW and the U.S. Fish and Wildlife Service (the Wildlife Agencies), Take associated with Covered Activities will not be in violation of the Migratory Bird Treaty Act and will be consistent with Fish and Game Code sections 3503 and 3503.5; therefore, all Covered Activities within and outside Conservation Areas must undertake measures to avoid the take of individuals, nests, and eggs of nesting birds. The CVMSHCP includes a general conservation measure that applies to all bird species to avoid impacts to habitat for nesting birds during the nesting season (CVMSHCP Section 9.7). Per IA Section 13.2, the City is obligated to ensure the projects to which it confers Take Authorization under the CVMSHCP comply with all terms and requirements of the CVMSHCP, the Wildlife Agencies' Permits that create the CVMSHCP, and the IA, including compliance with laws that protect nesting birds.

A-7

Page 25 of the Project's General Biological Assessment (Biological Assessment) states that "at the time of the survey, the parcel had nesting habitat for ground-nesting bird species, and suitable scrub habitat in the surrounding neighborhood." CDFW concurs that the Project site contains suitable habitat for ground-nesting birds and birds that nest in shrubs and trees. CDFW recommends the Mitigation Measure BIO-1 is revised to emphasize the importance of construction activities being conducted outside of the peak nesting bird season and to clarify that construction activities may not be conducted inside buffers established by the qualified biologist. Conducting work outside the peak nesting season is an important avoidance and minimization measure. CDFW also recommends the completion of nesting bird surveys *regardless* of the time of year to ensure that impacts to nesting birds and their nests and eggs are avoided. The timing of the nesting season varies greatly depending on several factors, such as bird species, weather conditions in any given year, and long-term climate changes (e.g., drought, warming, etc.). In response to warming, birds have been reported to breed earlier, thereby reducing temperatures that nests are exposed to during breeding and tracking shifts in availability of resources (Socolar et al., 2017[2]). CDFW staff have observed that climate change conditions may result in the nesting bird season occurring earlier and later in the year than historical nesting season dates. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site and surrounding area be avoided **any time birds are nesting on-site.**

To support City in reducing impacts to nesting birds to a less than significant level, CDFW recommends Mitigation Measure BIO-2 is revised with the following additions in **bold** and removals in ~~strikethrough:~~

[2] Socolar JB, Epanchin PN, Beissinger SR and Tingley MW (2017). Phenological shifts conserve thermal niches. Proceedings of the National Academy of Sciences 114(49): 12976-12981.

Mitigation Measure BIO-2: Nesting Birds

To the greatest extent feasible, the Project will avoid construction activities during the peak nesting season (February 1 through September 15). Regardless of the time of year, ~~N~~**n**esting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Preconstruction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. **Construction activities may not occur inside the** ~~E~~**e**stablished buffers**, which** shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist shall have the authority to stop work if nesting pairs exhibit signs of disturbance.

A-7

Pursuant to the CEQA Guidelines, section 15097(f), CDFW has prepared a draft mitigation monitoring and reporting program (MMRP) in Attachment 1 for recommended revisions to MM BIO-1 and MM BIO-2 and CDFW-recommended MM BIO-[A] and MM BIO-[B].

2) Burrowing Owl

On October 10, 2024, the Fish and Game Commission determined that western burrowing owl warrants protection as a candidate species under the California Endangered Species Act (Fish & G. Code, § 2050 et seq.). During the candidacy period, western burrowing owl will be afforded the same protection as threatened and endangered species under CESA. If Project activities, including relocation, could result in take, appropriate CESA authorization (i.e., Incidental Take Permit under Fish and Game Code section 2081) should be obtained prior to commencement of Project activities.

A-8

Take of individual burrowing owls and their nests or eggs is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Take is defined in Fish and Game Code section 86 as “hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill.” Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and

Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

With regard to the CVMSHCP, the CDFW Natural Community Conservation Plan (NCCP) Permit #2835-2008-001-06 does not provide Take Authorization for burrowing owl individuals, nests, or eggs. To the contrary, section 3.5.6 of the NCCP Permit states burrowing owl "pairs or individuals will not be Taken" and reiterates that the "HCP/NCCP does not authorize Take of [burrowing owl] nests [or] eggs[.]" Therefore, throughout the CVMSHCP area—both within and without Conservation Areas—Permittees must ensure that activities occurring within their jurisdictions do not result in the take, possession, or destruction of burrowing owl individuals, nests, or eggs. Any activity occurring within the CVMSHCP area that results in the take of burrowing owl individuals, nests, or eggs would be unlawful and would not be a Covered Activity under the CVMSHCP. Per IA Section 13.2, the City is obligated to ensure the projects to which it confers Take Authorization under the CVMSHCP comply with all terms and requirements of the CVMSHCP, the Wildlife Agencies' Permits that create the CVMSHCP, and the IA, including compliance with laws that protect burrowing owls.

A-8

The MND and its supporting documents contain limited details on the methods used to conduct an assessment of habitat and surveys for burrowing owl. Page 3 of the Biological Assessment states that subcontractors "conducted the field survey on 12 October 2023. The field team surveyed on foot following standard survey techniques for biological assessment work, walking transects across the site from north to south and searching for evidence of sensitive resources." Page 19 of the Biological Assessment indicates "No sign of active Burrowing Owl use was observed (burrows, feathers, whitewash, etc.), but suitable nesting habitat exists." Page 7 of the Biological Assessment states that "no mammal sign was observed except for some small mammal burrows that were not definitive as to species." Note that CDFW generally considers biological field assessments for wildlife to be valid for a one-year period. Given the MND's lack of findings from a habitat assessment and recent focused surveys for burrowing owl following the guidelines in the *Staff Report on Burrowing Owl Mitigation*,[3] the number and locations of suitable and occupied burrows within the Project site and surrounding areas are unknown. Given the lack of results from focused surveys following recommended protocols and the lack of survey reports, CDFW is limited in its

[3] California Department of Fish and Game (CDFG). 2012. Staff report on burrowing owl mitigation. State of California, Natural Resources Agency. Available for download at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843&inline

ability to provide biological expertise to support the City in reducing impacts to burrowing owl to a level less than significant. CDFW recommends that the MND is revised to include the results of focused surveys, including survey reports,[4] for burrowing owl within the Project site and surrounding area following the guidelines outlined in Appendix D of the *Staff Report on Burrowing Owl Mitigation*; and to incorporate appropriate avoidance, minimization, and mitigation measures for burrowing owl.

CDFW notes that in California, preferred habitat for burrowing owl is generally typified by short, sparse vegetation with few shrubs,[5] and that burrowing owls may occur in ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat proximity.[6] Based on review of historical aerial imagery and Google Street View images using Google Earth, the Project site and areas to the west and south contain habitat with sparse cover of shrubs that is suitable nesting and foraging habitat for burrowing owl. Burrowing owls also frequently move into disturbed areas prior to and during construction activities since they are adapted to highly modified habitats.[7,8] CDFW considers the Project site and vacant areas to the west and south to have suitable nesting and foraging habitat for burrowing owl.

A-8

The MND includes Mitigation Measure BIO-1 for burrowing owl, which includes important elements of a measure for pre-construction surveys for burrowing owl. However, CDFW also recommends that focused burrowing owl surveys, conducted in accordance with the *Staff Report on Burrowing Owl Mitigation*, are completed to provide adequate information on burrowing owl presence; to inform appropriate avoidance, minimization, and mitigation measures; and to provide sufficient time for the City and Project proponent to plan and implement measures necessary to avoid impacts to burrowing owl individuals, nests, and eggs prior to construction activities. As such, CDFW considers Mitigation Measure BIO-1 to be insufficient in scope and timing to

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[4] Survey reports should include details on survey methods and results, including, but not limited to, the names and qualifications of surveyor(s); a description of survey methods; a description of the conditions of the project site and recent photos; map(s) showing the locations of all suitable burrows, occupied burrows, burrowing owls, and burrowing owl sign; descriptions of burrowing owl behavior observed; California Natural Diversity Database (CNDDB) field survey forms, etc. For more information, see Appendix D, Survey Reports, of the CDFW 2012 Staff Report on Burrowing Owl Mitigation.
[5] Haug, E. A., B. A. Millsap, and M. S. Martell. 1993. Burrowing owl (*Speotyto cunicularia*), in A. Poole and F. Gill, editors, The Birds of North America, The Academy of Natural Sciences, Philadelphia, Pennsylvania, and The American Ornithologists' Union, Washington, D.C., USA.
[6] Gervais, J. A., D. K. Rosenberg, R. G. Anthony. 2003. Space use and pesticide exposure risk of male burrowing owls in an agricultural landscape. Journal of Wildlife Management 67: 155-164.
[7] Chipman, E. D., N. E. McIntyre, R. E. Strauss, M. C. Wallace, J. D. Ray, and C. W. Boal. 2008. Effects of human land use on western burrowing owl foraging and activity budgets. Journal of Raptor Research 42(2): 87-98.
[8] Coulombe, H. N. 1971. Behavior and population ecology of the Burrowing Owl, *Speotyto cunicularia*, in the Imperial Valley of California. Condor 73:162–176.

reduce impacts to burrowing owl to a level less than significant. CDFW recommends Mitigation Measure BIO-1 is revised with the following additions in **bold** and removals in ~~strikethrough:~~

Mitigation Measure BIO-1: Burrowing Owl Focused and Pre-Construction Surveys

Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted by a qualified biologist in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version) prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent shall begin coordination with CDFW and USFWS immediately, and shall prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance and monitoring actions, including measures necessary to avoid take of burrowing owl individuals, nests, and eggs. The Burrowing Owl Plan shall include the number and location of occupied burrow sites (occupied site means at least one burrowing owl or its sign has been observed within the last three years; may be indicated by owl sign including feathers, pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site), acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures. If impacts to occupied burrowing owl habitat or burrow(s) or burrowing owl individuals, nests, or eggs cannot be avoided, appropriate CESA authorization (i.e., Incidental Take Permit under Fish and Game Code section 2081) should be obtained from CDFW prior to commencement of Project activities.

A-8

Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version). Preconstruction surveys should be repeated when there is a pause in construction of more than 30 days. Preconstruction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW and USFWS for review and approval prior to commencing Project activities. ~~Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied~~

~~burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and USFWS to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.~~

A-8

3) Coachella Valley Multiple Species Habitat Conservation Plan

Salvage of Sand-Dependent Covered Species

Section 6.6.1 of the CVMSHCP (Obligations of Local Permittees) states that within and outside Conservation Areas "on parcels approved for Development, the Permittees shall encourage the opportunity to salvage Covered sand-dependent species in accordance with the Implementation Manual." The Project contains CVMSHCP modeled habitat for Coachella Valley fringe-toed lizard (*Uta inornata*), flat-tailed horned lizard (*Phrynosoma mcallii*), Palm Springs pocket mouse (*Perognathus longimembris bangsi*), Coachella Valley round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*), and Coachella Valley milk vetch (*Astragalus lentiginosus* var. *coachellae*). To be consistent with CVMSHCP requirements, CDFW recommends that the City include in a revised MND the following mitigation measure:

A-9

Mitigation Measure BIO-[A]: Salvage of Sand-Dependent Covered Species

Prior to vegetation removal or ground-disturbing activities, the City will collaborate with the Coachella Valley Conservation Commission to plan and implement a salvage of sand-dependent Covered Species within the Project site.

4) Artificial Nighttime Lighting

The Project site is located adjacent to vacant areas to the west and south containing desert scrub habitat that provide suitable burrowing, nesting, roosting, foraging, and refugia habitat for birds, migratory birds that fly at night, and other nocturnal and crepuscular wildlife. Page 23 of the MND state that the Project proposes "new sources of lighting, including streetlights and security lighting." The Project's proposed artificial nighttime lighting has the potential to significantly and adversely affect biological resources using these vacant areas surrounding the Project. Artificial lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; the detection of resources and natural enemies; and navigation.[9] Many species use photoperiod cues

A-10

[9] Gatson, K. J., Bennie, J., Davies, T., Hopkins, J. 2013. The ecological impacts of nighttime light pollution: a mechanistic appraisal. Biological Reviews, 88.4: 912-927.

for communication (e.g., bird song[10]), determining when to begin foraging,[11] behavioral thermoregulation,[12] and migration.[13] Phototaxis, a phenomenon that results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it.[10]

Page 26 of the MND indicates that "all Project lighting would be required to conform to regulations, guidelines, and standards established under the City's Municipal Code Section 17.18.050, Exterior glare, heat, and light, which ensures adequate lighting for public safety while also minimizing light pollution and glare and public nuisances." CDFW considers these plans to minimize the impacts of artificial nighttime lighting to be insufficient in slope to reduce the impacts of lighting to level less than significant. To support the City in avoiding or reducing impacts of artificial nighttime lighting on biological resources to less than significant, CDFW recommends the City add the following mitigation measure to a revised MND:

A-10

Mitigation Measure BIO-[B]: Artificial Nighttime Lighting

Throughout construction and the lifetime operations of the Project, the City and Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light at night during the hours of dawn and dusk when many wildlife species are most active. The City and Project proponent shall ensure that all lighting for the Project is fully shielded, cast downward and directed away from surrounding open-space and agricultural areas, reduced in intensity to the greatest extent possible, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). The City and Project proponent shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.

5) Landscaping

Page 25 of the MND indicates that two landscaped lots associated with the developing would total 5,863 square feet. No additional details are provided on landscaping plans in the MND. CDFW recommends that the MND include recommendations regarding landscaping from Section 4.0 of the CVMSHCP "Table 4-112: Coachella Valley Native

A-11

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[10] Miller, M. W. 2006. Apparent effects of light pollution on singing behavior of American robins. The Condor 108:130–139.
[11] Stone, E. L., G. Jones, and S. Harris. 2009. Street lighting disturbs commuting bats. Current Biology 19:1123–1127.
[12] Beiswenger, R. E. 1977. Diet patterns of aggregative behavior in tadpoles of *Bufo americanus*, in relation to light and temperature. Ecology 58:98–108.
[13] Longcore, T., and C. Rich. 2004. Ecological light pollution - Review. Frontiers in Ecology and the Environment 2:191–198.

Plants Recommended for Landscaping" (pp. 4-180 to 4-182; https://cvmshcp.org/plan-documents/). CDFW also recommends incorporation of water-wise concepts in any Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds, reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants. More information on native plants suitable for the Project location and nearby nurseries is available at Calscape: https://calscape.org/. Local water agencies/cities and resource conservation cities in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens. Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: https://saveourwater.com/.

A-11

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

A-12

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

A-13

CONCLUSION

CDFW appreciates the opportunity to comment on the MND to assist the City in identifying and mitigating Project impacts to biological resources. CDFW concludes that the MND does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW recommends that revised and additional mitigation measures and analysis as described in this letter be added to a revised MND.

A-14

A-14

CDFW personnel are available for consultation regarding biological resources and strategies to avoid and minimize impacts. Questions regarding this letter or further coordination should be directed to Jacob Skaggs, Senior Environmental Scientist Specialist, at jacob.skaggs@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Kim Freeburn
84F92FFEEFD24C8...

Kim Freeburn
Environmental Program Manager

Attachment 1: MMRP for CDFW-Proposed Mitigation Measures

ec:

Heather Brashear, Senior Environmental Scientist (Supervisor), CDFW Heather.Brashear@Wildlife.ca.gov

Peter Satin, Coachella Valley Association of Governments psatin@cvag.org

Mary Beth Woulfe, U.S. Fish and Wildlife Service marybeth_woulfe@fws.gov

Lory Salazar-Velasquez, U.S. Fish and Wildlife Service lory_salazar-velasquez@fws.gov

Noelle Ronan, U.S. Fish and Wildlife Service noelle_ronan@fws.gov

Office of Planning and Research, State Clearinghouse, Sacramento state.clearinghouse@opr.ca.gov

ATTACHMENT 1: MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Mitigation Measures	Timing and Methods	Responsible Parties
Mitigation Measure BIO-2: Nesting Birds **To the greatest extent feasible, the Project will avoid construction activities during the peak nesting season (February 1 through September 15). Regardless of the time of year, ~~n~~esting bird surveys shall be performed by a qualified avian biologist no more than (3) days prior to vegetation removal or ground-disturbing activities. Preconstruction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist shall make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Construction activities may not occur inside the ~~e~~stablished buffers, which shall remain on- site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist shall have the authority to stop work if nesting pairs exhibit signs of disturbance.**	**Timing:** No more than 3 days prior to all vegetation removal or ground-disturbing activities. **Methods:** See Mitigation Measure	**Implementation**: City and Project proponent **Monitoring and Reporting**: City

Mitigation Measure BIO-1: Burrowing Owl Focused and Pre-Construction Surveys **Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted by a qualified biologist in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version) prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent shall begin coordination with CDFW and USFWS immediately, and shall prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance and monitoring actions, including measures necessary to avoid take of burrowing owl individuals, nests, and eggs. The Burrowing Owl Plan shall include the number and location of occupied burrow sites (occupied site means at least one burrowing owl or its sign has been observed within the last three years; may be indicated by owl sign including feathers, pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site), acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures. If impacts to occupied burrowing owl habitat or burrow(s) or burrowing owl individuals, nests, or eggs cannot be avoided, appropriate CESA authorization (i.e., Incidental Take Permit under Fish and Game Code section 2081) should be obtained from CDFW prior to commencement of Project activities.** **Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground**	**Timing: Focused surveys:** Prior to vegetation removal or ground-disturbing activities. **Pre-construction surveys:** No less than 14 days prior to start of Project-related activities and within 24 hours prior to ground disturbance and when there is a pause in construction of more than 30 days. **Methods:** See Mitigation Measure	**Implementation**: City and Project proponent **Monitoring and Reporting**: City

disturbance, in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version). Preconstruction surveys should be repeated when there is a pause in construction of more than 30 days. Preconstruction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW and USFWS for review and approval prior to commencing Project activities.		
Mitigation Measure BIO-[A]: Salvage of Sand-Dependent Covered Species **Prior to vegetation removal or ground-disturbing activities, the City will collaborate with the Coachella Valley Conservation Commission to plan and implement a salvage of sand-dependent Covered Species within the Project site.**	**Timing:** Prior to vegetation removal or ground-disturbing activities. **Methods:** See Mitigation Measure	**Implementation**: City and Project Proponent **Monitoring and Reporting**: City
Mitigation Measure BIO-[B]: Artificial Nighttime Lighting **Throughout construction and the lifetime operations of the Project, the City and Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light at night during the hours of dawn and dusk when many wildlife species are most active. The City and Project proponent shall ensure that all lighting for the Project is fully shielded, cast downward and directed away**	**Timing:** Throughout construction and lifetime operations of the Project. **Methods:** See Mitigation Measure	**Implementation**: City and Project Proponent **Monitoring and Reporting**: City

from surrounding open-space and agricultural areas, reduced in intensity to the greatest extent possible, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). The City and Project proponent shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.		

ATTACHMENT 5

CITY OF RANCHO MIRAGE ©

DEVELOPMENT SERVICES DEPARTMENT
69-825 Highway 111 ● Rancho Mirage, CA 92270
Planning@RanchoMirageCA.gov ● (760) 328-2266

NOTICE OF DETERMINATION AND MITIGATED NEGATIVE DECLARATION

To: ☒ Office of Land Use and Climate Innovation
1400 Tenth Street
Sacramento, CA 95814

☒ Riverside County Clerk
P.O. Box 751
Riverside, CA 92501

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse (SCH) Number: 2025051428
Project Title/Case No.: 9-Lot Subdivision (Tentative Tract Map No. 38636) – Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001
Project Applicant: Farhad Zomorodi
Project Location: 72094 Ginger Rogers Road (APN: 685-080-002)
Project Description: The project proposes to subdivide 5.04 gross acres into nine (9) single-family residential lots with lots ranging in size from 16,122 sq. ft. to 16,841 sq. ft. A private street is proposed, in addition to two retention basins and perimeter landscaping within the project common areas. The project requests approval of a variance request to the Very Low Density Residential (R-L-2) minimum required lot size from 18,000 sq. ft. to 16,000 sq. ft. in order to be compatible with the established lot sizes of the immediate area. The project involves the demolition of an existing single-family residence built in 1958. No single-family residence architectural plans are proposed as part of this project.

This is to advise that the lead agency, City of Rancho Mirage, has approved the above described project on _____ (date) and has made the following determinations regarding the above described project.

1. The project ☐ will ☒ will not have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan ☒ was ☐ was not adopted for this project.
5. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.
6. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

The City Council adopted the following Finding: The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). This is to certify that the Mitigated Negative Declaration with comments and responses and record of project approval is available to the General Public at: City of Rancho Mirage, 69-825 Highway 111, Rancho Mirage, CA 92270.

Mitigated Negative Declaration – Rancho Mirage City Council

Date: _____

_____
Joy Tsai, Senior Planner

I hereby certify that the City of Rancho Mirage has made the above findings of fact and that based upon the Mitigated Negative Declaration and hearing record the project will not have a significant effect on the environment.

Date: _____

_____
Joy Tsai, Senior Planner

DRAFT

ATTACHMENT 6
Chair Chanter
Vice Chair Bryant
Commissioner Agostini
Commissioner Beale
Commissioner Grey

REGULAR PLANNING COMMISSION MEETING

69-825 Highway 111, Rancho Mirage, CA 92270

Thursday, October 9, 2025, 2:00 PM

DRAFT MINUTES

1. GENERAL

1.A. CALL TO ORDER

Chair Chanter called the meeting to order at 2:00 P.M.

1.B. FLAG SALUTE

Commissioner Agostini led the flag salute.

1.C. ROLL CALL - Agostini, Beale, Grey, Bryant, Chanter

Present: Agostini, Beale, Bryant, Chanter.

Absent: Grey.

MOVED/SECONDED BY AGOSTINI/BEALE TO EXCUSE COMMISSIONER GREY'S ABSENCE. MOTION CARRIED 4/0.

2. COMMISSIONER COMMENTS

Commissioner Agostini thanked the City and staff for honoring G. Dana Hobart, former Rancho Mirage City Council Member, and highlighted his contributions to the City and community.

Vice Chair Bryant reflected on the passing of G. Dana Hobart, calling it a somber time for Rancho Mirage. He praised Mr. Hobart's intelligence, leadership, and integrity, recalling his own appointment to the Planning Commission by Mr. Hobart in 2018 and the four guiding principles Mr. Hobart shared with him. Vice Chair Bryant highlighted Mr. Hobart's long tenure in public service and dedication to the City.

Chair Chanter agreed with Vice Chair Bryant's remarks, calling them fine words about a valuable man to the community.

3. APPROVAL OF MINUTES

3.A. September 25, 2025, Regular Planning Commission Meeting Minutes

—RECOMMENDED ACTION: Approve the September 25, 2025, Regular Planning Commission Meeting Minutes as presented.

The following individual provided public comments: Brad Anderson.

MOVED/SECONDED BY BEALE/AGOSTINI TO APPROVE THE SEPTEMBER 25, 2025, REGULAR PLANNING COMMISSION MEETING MINUTES AS PRESENTED. MOTION CARRIED 4/0.

4. PUBLIC HEARINGS

4.A. Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) – Applicant: Farhad Zomorodi. Consideration of a 9-Lot Residential Subdivision on 5.04 Gross Acres. The Project Requests Approval of a Variance to the Very Low Density Residential (R-L-2) Minimum Required Lot Size From 18,000 Sq. Ft. to 16,000 Sq. Ft. Located at 72094 Ginger Rogers Road (APN: 685-080-002)

Joy Tsai, Senior Planner, presented the staff report.

The following individual provided public comments: Brad Anderson.

A discussion ensued.

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS: 1) APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025051428) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA23-0003; AND, 2) APPROVE VARIANCE CASE NO. VAR24-0002; AND, 3) APPROVE TENTATIVE TRACT MAP CASE NO. TTM23-0001 (TTM 38636), SUBJECT TO THE CONDITIONS OF APPROVAL, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF REPORT. MOTION CARRIED 4/0.

4.B. Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) – Applicant: Phillip Fomotor. Consideration of a 16-Lot Residential Subdivision on 19.81 Gross Acres. The Project Requests Approval of a Minor Variance to the Residential Estate (R-E) Minimum Required Lot Size of 1 Acre to .98 Acre for Two Lots. North of the Intersection of Mirage Cove Drive and Peterson Road (APN's: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022)

Vice Chair Bryant recused himself, due to the proximity of his residence to the subject project.

The meeting was recessed at 2:24 P.M. and Vice Chair Bryant left the Council Chamber. The meeting was reconvened at 2:30 P.M., with Commissioner Agostini, Commissioner Beale, and Chair Chanter present.

Ben Torres, Planning Manager, presented the staff report. He recommended inclusion of the following three (3) additional conditions of approval:

- As determined to be feasible by the City Engineer curb and gutter shall be installed along the project frontage on Nielson Road and Peterson Road with the curb face at a width to be determined during plan check.
- Existing tamarisk trees on the project site shall be removed within 6 months from a final determination on the proposed project by the City Council.
- The ultimate roadway width as determined by the City Engineer shall be installed by the applicant on Peterson Road fronting the following addresses: 38841, 38785, & 38775 Peterson Road.

The following individuals provided public testimony: Kay Williams, Toni Ringlein, Janeen Bahr, and Vicki Petersen.

Phillip Fomotor, applicant, spoke regarding the project and answered questions posed by the Planning Commission.

A discussion ensued.

Stephan Longoria, City Engineer, answered questions posed by the Planning Commission.

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS: 1) APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025070800) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA24-0009; 2) APPROVE MINOR VARIANCE CASE NO. VAR24- 0005; 3) APPROVE TENTATIVE TRACT MAP CASE NO. TTM24-0003 (TTM 38971), SUBJECT TO THE CONDITIONS OF APPROVAL WITH THE ADDED CONDITIONS, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF

REPORT; 4) DIRECT STAFF TO LOOK INTO EQUESTRIAN TRAIL INCLUSION; AND 5) ADD THE FOLLOWING THREE (3) CONDITIONS OF APPROVAL:

- **AS DETERMINED TO BE FEASIBLE BY THE CITY ENGINEER CURB AND GUTTER SHALL BE INSTALLED ALONG THE PROJECT FRONTAGE ON NIELSON ROAD AND PETERSON ROAD WITH THE CURB FACE AT A WIDTH TO BE DETERMINED DURING PLAN CHECK.**
- **EXISTING TAMARISK TREES ON THE PROJECT SITE SHALL BE REMOVED WITHIN 6 MONTHS FROM A FINAL DETERMINATION ON THE PROPOSED PROJECT BY THE CITY COUNCIL.**
- **THE ULTIMATE ROADWAY WIDTH AS DETERMINED BY THE CITY ENGINEER SHALL BE INSTALLED BY THE APPLICANT ON PETERSON ROAD FRONTING THE FOLLOWING ADDRESSES: 38841, 38785, & 38775 PETERSON ROAD.**

MOTION CARRIED 3/0 (VICE CHAIR BRYANT RECUSED).

The meeting was recessed at 3:01 P.M. and Vice Chair Bryant returned to the Council Chamber. The meeting was reconvened at 3:03 P.M. with all four Planning Commissioners present.

5. NON-AGENDA PUBLIC COMMENTS

The following individual provided non-agenda public comments: Vicki Petersen.

6. ADJOURNMENT

Chair Chanter adjourned the meeting at 3:04 P.M.

Date Approved by Planning Commission:

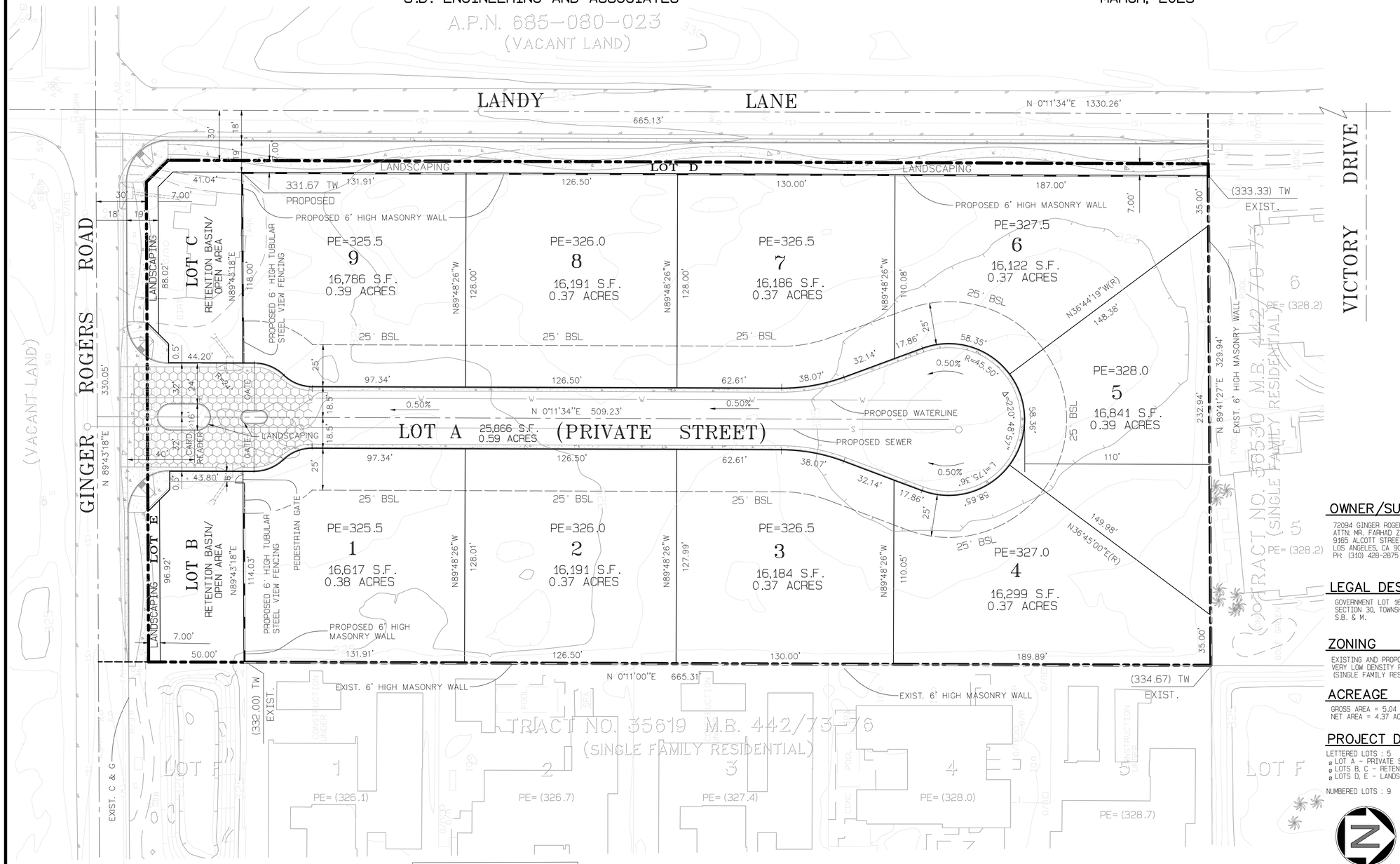
ATTACHMENT 7

IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

TENTATIVE TRACT MAP NO. 38636

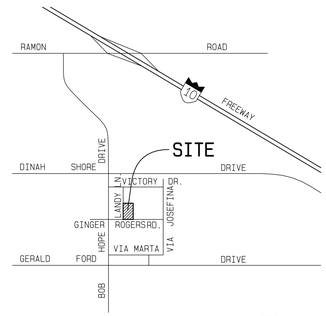
BEING A SUBDIVISION OF GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B.M.

S.D. ENGINEERING AND ASSOCIATES — MARCH, 2025

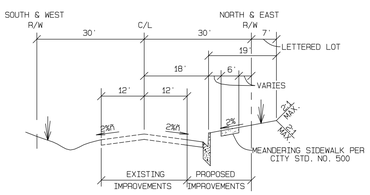


NO PARKING ON RED CURB PAINTED ALONG FRONTAGE OF LOTS 1-6.

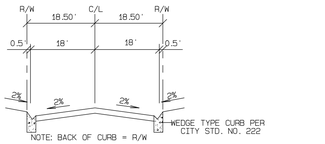
NOTE:
EXISTING RESIDENTIAL STRUCTURE ON LOT C TO BE DEMOLISHED.



VICINITY MAP
NTS



TYPICAL SECTION
GINGER ROGERS ROAD
LANDY LANE



TYPICAL SECTION
LOT A (PRIVATE STREET)

OWNER/SUBDIVIDER

72094 GINGER ROGERS LLC
ATTN: MR. FARHAD ZOMORODI
9165 ALCOTT STREET #203
LOS ANGELES, CA 90035
PH: (310) 428-2875

ENGINEER

S.D. ENGINEERING AND ASSOCIATES
242 E. AIRPORT DRIVE, STE. 212
SAN BERNARDINO, CA 92408
ATTN: MR. SURESH DODDIAH
PH: (909) 215-3451

LEGAL DESCRIPTION

GOVERNMENT LOT 16 IN THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 4 SOUTH, RANGE 6 EAST, S.B. & M.

ASSESSORS PARCEL NO:

685-080-002

SCHOOL DISTRICT

PALM SPRINGS UNIFIED SCHOOL DISTRICT

ZONING

EXISTING AND PROPOSED:
VERY LOW DENSITY RESIDENTIAL (R-L-2)
(SINGLE FAMILY RESIDENTIAL)

LETTER LOT AREAS

LOT A (PRIVATE STREET) = 25,866 S.F. (0.59 AC)
LOT B (RETENTION BASIN) = 5,683 S.F. (0.13 AC.)
LOT C (RETENTION BASIN) = 5,640 S.F. (0.13 AC.)
LOT D (LANDSCAPED AREA) = 5,133 S.F. (0.12 AC.)
LOT E (LANDSCAPED AREA) = 730 S.F. (0.02 AC.)

ACREAGE

GROSS AREA = 5.04 ACRES
NET AREA = 4.37 ACRES

PROJECT DESC.

LETTERED LOTS : 5
- LOT A - PRIVATE STREET
- LOTS B, C - RETENTION BASIN
- LOTS D, E - LANDSCAPED PARKWAY

NUMBERED LOTS : 9

UTILITY PURVEYORS

ELECTRIC:	IMPERIAL IRRIGATION DISTRICT	(760) 335-3640
GAS:	THE GAS COMPANY/SEMPRA ENERGY CO.	(760) 327-3343
TELEPHONE:	FRONTIER	(760) 778-3601
WATER:	COACHELLA VALLEY WATER DISTRICT	(760) 398-2651
CABLE:	SPECTRUM	(866) 874-2389
SEWER:	COACHELLA VALLEY WATER DISTRICT	(760) 398-2651

GRAPHIC SCALE 1"=30'
30 0 30 60 90

PLANNING CASE NO. EA23-0003, TTM23-0001, VAR 24-0002

S.D. ENGINEERING AND ASSOCIATES
LAND PLANNING AND CIVIL ENGINEERING
242 E. AIRPORT DRIVE, STE. 212 – SAN BERNARDINO, CA 92408
PHONE (909) 215-3451 EMAIL: suresh@sdengineering.net

SURESH DODDIAH R.C.E. 36361 DATE

REGISTERED PROFESSIONAL ENGINEER — SURESH DODDIAH — NO. 36361 EXP. 6-30-26 — CIVIL — STATE OF CALIFORNIA

DIGALERT — DIAL BEFORE YOU DIG TOLL FREE 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH CONDITIONS AND STANDARDS IN EFFECT.

BENCHMARK: CITY BM #PD 18-5

BEING A 1-1/2" COPPERWELD IN ASPHALT, FLUSH, AT THE CENTERLINE INTERSECTION OF BOB HOPE DRIVE AND DINAH SHORE DRIVE.

ELEV. = 347.672

CITY OF RANCHO MIRAGE, CALIFORNIA

DRAWN BY: EB/RI	TENTATIVE TRACT MAP NO. 38636	SCALE: AS SHOWN
DESIGNED BY: EB	72094 GINGER ROGERS ROAD	DATE: 3/20/2025
CHECKED BY: SD		DRAWING NO. 1 / 1

3/20/2025 6:43:50 PM

TRACT 38636

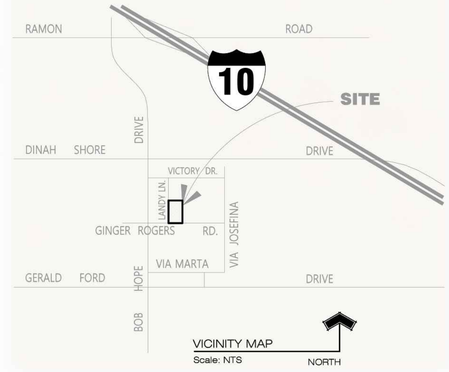
CONCEPTUAL LANDSCAPE PLAN

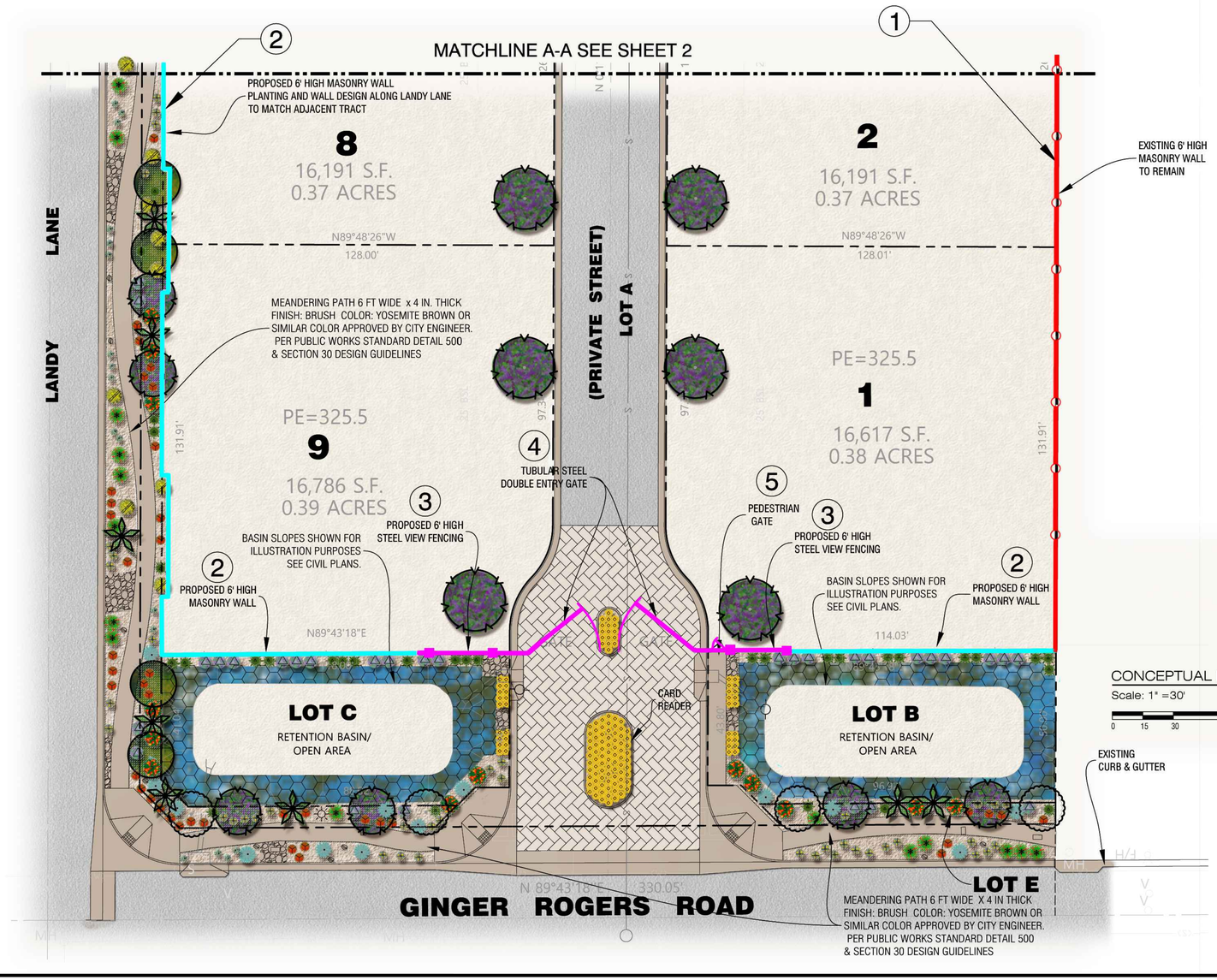
72094 Ginger Rogers Drive
Rancho Mirage, CA 92270
APN: 685-080-002

Lot A Street		
Lot B Area		5,361 Sq.Ft.
Lot C Area		5,586 Sq.Ft.
Lot D Area		5,064 Sq.Ft.
Lot E Area		664 Sq.Ft.
Offsite Area	(Landscaped area between P/L and curb)	9,171 Sq.Ft.
Total Landscape Area:		25,846 Sq. Ft.

I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE CITY'S WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENTATION PACKAGE

SIGN _____ DATE 3/27/2025





CONCEPTUAL PLAN
Scale: 1" =30'
NORTH
0 15 30 60 90 120

Planting Legend

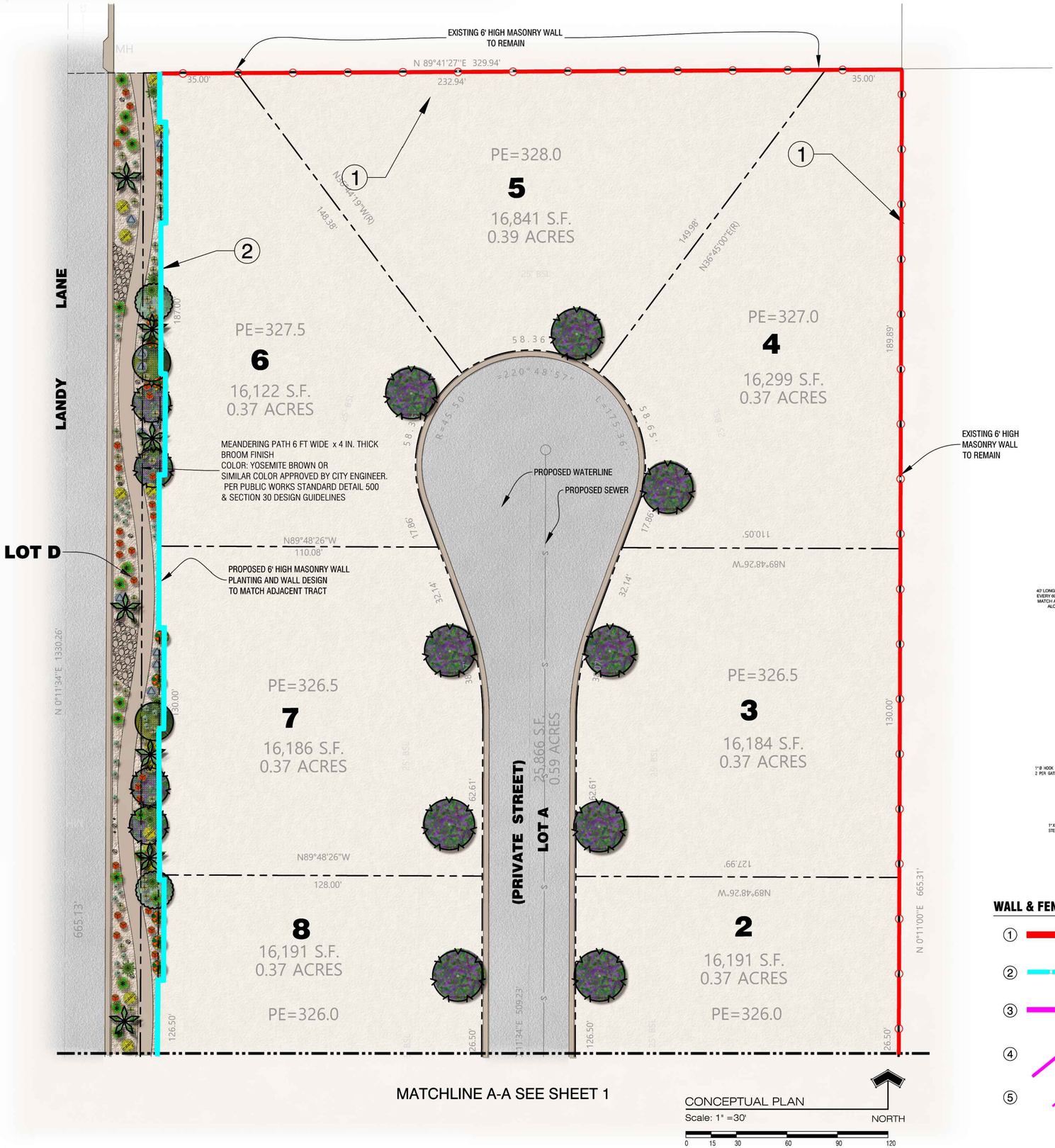
SYMBOL	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	WUCOLS VI WATER USAGE	INTENDED MATURE SIZE (H x W)
	15	10 Ft. Brown Trunk	Phoenix dactylifera	Date Palm	Mod	80' H, Ø 12'
	6	36" Box	Acacia smallii	Sweet Acacia	Low	20' H, Ø 15'
	6	24" Box	Olea europaea 'Swan Hill'	Fruitless Olive	Low	20' H, Ø 18'
	15	24" Box	Vitex agnus-castus	Chaste Tree	Low	20' H, Ø15'
	69	1 Gal.	Achillea millefolium 'Paprika'	Paprika Common Yarrow	Low	2' H, Ø 3'
	13	5 Gal.	Agave americana	Century Plant	V. LOW	5'H, Ø 5-7'
	41	5 Gal.	Agave desmettiana	Dwarf Century Plant	Low	2' H, Ø 3'
	131	1 Gal.	Baileya multiradiata	Desert Marigold	Low	18" H, Ø 18"
	21	5 Gal.	Caesalpinia gilliesii	Desert Bird of Paradise	Low	6' H, Ø 6'
	79	1 Gal.	Chrysactinia mexicana	Damianita Daisy	Low	2' H, Ø 2'
	31	5 Gal.	Hesperaloe parviflora	Red Yucca	Low	4' H, Ø 4'
	40	5 Gal.	Leucophyllum frutescens 'Green Cloud'	Green Texas Ranger	Low	4' H, Ø 6'
	49	1 Gal.	Santolina chamaecyparissus 'Nana'	Dwarf Lavender Cotton	Low	1' H, Ø 1'
	21	5 Gal.	Senna artesmisiodes	Feathery Cassia	Low	5' H, Ø 5'
	19		1-2' Granite Boulder - Boulders with in 3' of public curb shall be placed such that the height does not exceed 15".			
	4,329 Sq. Ft.	1 Gal. 36" o.c.	Rosmarinus officinalis 'Huntington Carpet' 18" oc.	Carpet Rosemary	Low	2' H, Ø 2'
	7,612 Sq. Ft.		3" Thick Layer of Decomposed Granite	Color: Desert Spice Available from Caldg.com		
	828 Sq. Ft.		3"Thick Layer of Gravel			
	4,983 Sq. Ft.		Native Soil - Basin Bottoms			
	5,258 Sq. Ft.		Decorative Pavers	See Detail - Sheet 2		

Applicant:
72094 GINGER ROGERS LLC
P.O. BOX 10544
BEVERLY HILLS, CA 90213
Contact: MR. FARHAD ZOMORADI
Phone: (310) 428-2875

REGISTERED LANDSCAPE ARCHITECT RICHARD POPE LIC. NO. 2664 3/27/2025 EXP. 02/28/26 STATE OF CALIFORNIA

JOB: 23-09 LKD CKE
April 7, 2023

RICHARD POPE AND ASSOCIATES
Landscape Architecture
3687 Valencia Ave.
San Bernardino, CA 92404
Office phone: (909) 888-5568
richardpopeassociates.la@gmail.com
www.richardpopeandassociates.com
Richard Pope, Landscape Architect CA# 2664

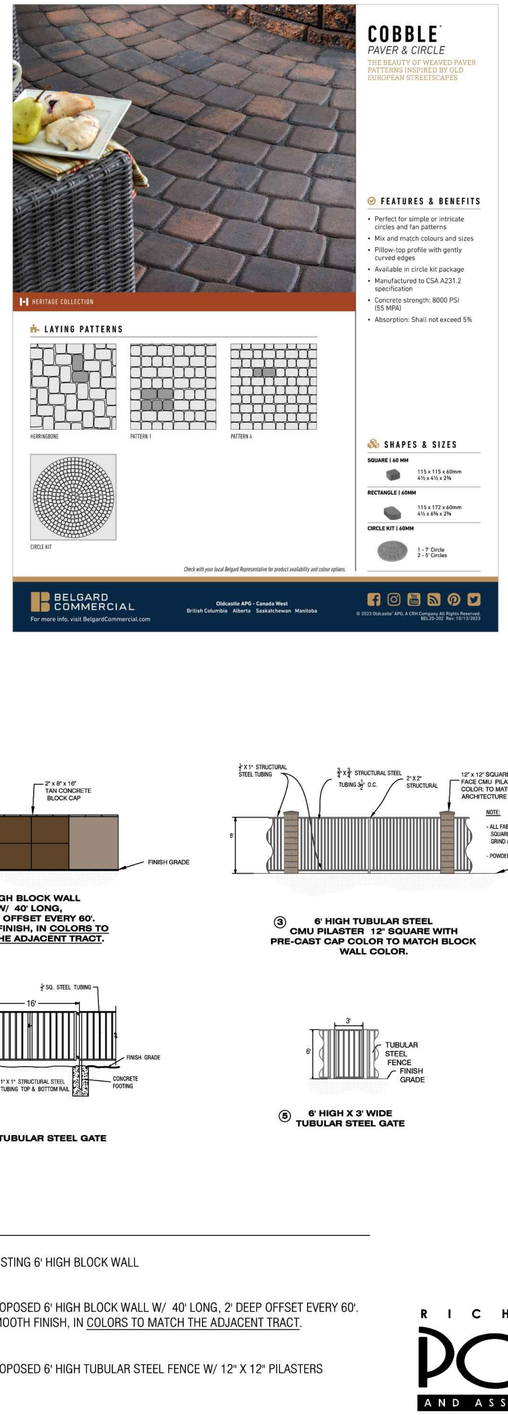


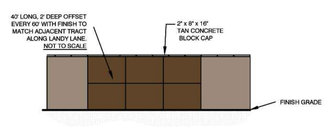
MATCHLINE A-A SEE SHEET 1

CONCEPTUAL PLAN
Scale: 1" =30'

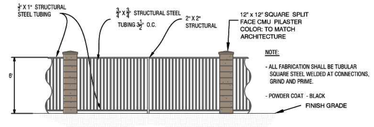
NORTH

0 15 30 60 90 120

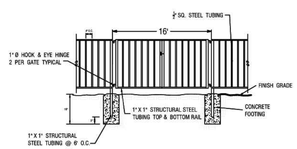




② 6' HIGH BLOCK WALL
W/ 40' LONG,
2' DEEP OFFSET EVERY 60'.
SMOOTH FINISH, IN COLORS TO
MATCH THE ADJACENT TRACT.



③ 6' HIGH TUBULAR STEEL
CMU PILASTER 12" SQUARE WITH
PRE-CAST CAP COLOR TO MATCH BLOCK
WALL COLOR.



④ 6' HIGH TUBULAR STEEL GATE

⑤ 6' HIGH X 3' WIDE
TUBULAR STEEL GATE

WALL & FENCE LEGEND

① EXISTING 6' HIGH BLOCK WALL

② PROPOSED 6' HIGH BLOCK WALL W/ 40' LONG, 2' DEEP OFFSET EVERY 60'. SMOOTH FINISH, IN COLORS TO MATCH THE ADJACENT TRACT.

③ PROPOSED 6' HIGH TUBULAR STEEL FENCE W/ 12" X 12" PILASTERS

④ QTY 2 PROPOSED 6' HIGH X 8' WIDE TUBULAR STEEL GATE

⑤ 3' WIDE TUBULAR STEEL PEDESTRIAN GATE

RICHARD POPE AND ASSOCIATES
Landscape Architecture
3687 Valencia Ave.
San Bernardino, CA 92404
Office phone: (909) 888-5568
richardpopeassociates.la@gmail.com
www.richardpopeandassociates.com
Richard Pope, Landscape Architect CA# 2664

Public Comments Received

Tentative Tract Map No. 38636 – 9-Lot Subdivision

Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001

From:	Diane Currie
To:	CityCkerk@ranchomirageca.gov
Cc:	Joy Tsai
Subject:	72094 Ginger Rogers Rd Environmental assessment EA23-0003
Date:	Monday, October 6, 2025 9:59:35 AM

CAUTION: This email originated from outside The City of Rancho Mirage. DO NOT CLICK links or open attachments unless you recognize the sender and know the content is safe.

Hello

We live at 9 Siena Vista Ct in Rancho Mirage and will be severely impacted by these new houses being proposed. I have heard that the "standard" set back from property lines is 25 feet. As our house is only 15 feet from our property line that puts a house awfully close to us.

The best solution (for our privacy and perhaps saving some of our mountain views) would be to put the two retention basins on the other side of our fence at the back of the proposed 9 houses. Right now it's at the very front of the complex on Ginger Rogers. Do either of you know who we should discuss this issue with? Appreciate any feedback

Regards,

Diane Currie and Carol Snell

From: Diane Currie
To: Planning Division
Subject: Fwd: 72094 Ginger Rogers Rd Environmental assessment EA23-0003
Date: Monday, October 6, 2025 12:39:19 PM

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

We live at 9 Siena Vista Ct in Rancho Mirage and will be severely impacted by this new development being proposed. The current proposal as best we can discern is that the property line at the back of the development will be very close to our property line. We understand that the "standard" set back from property lines is 25 feet. Our house is only 15 feet from our property line therefore, that puts a proposed house awfully close to our property line.

We would like to request two items: that the original proposal of seven homes be considered, which could potentially not have a home so close our property line, as opposed to the nine currently being planned. Second, could the retention basins be at the back of the property instead of the front, providing a much needed buffer. The current proposal shows these basins at the very front of the complex on Ginger Rogers.

We respectfully appreciate serious consideration to these two proposals.

Diane Currie
510-908-45o

City Council Staff Report

Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) – Applicant: Phillip Fomotor. Consideration of a 16-Lot Residential Subdivision on 19.81 Gross Acres. The Project Requests Approval of a Minor Variance to the Residential Estate (R-E) Minimum Required Lot Size of 1 Acre to .98 Acre for Two Lots. Located North of the Intersection of Mirage Cove Drive and Peterson Road (APN's: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022)

DATE	ITEM #
November 6, 2025	PUBLIC HEARINGS - 6B.
Presented To	**Presented By**
Mayor and City Council	Ben Torres, Planning Manager

RECOMMENDED ACTION

1. Approve the filing of a Mitigated Negative Declaration (SCH# 2025070800) based on Environmental Assessment Case No. EA24-0009;
2. Approve Minor Variance Case No. VAR24-0005; and
3. Approve Tentative Tract Map Case No. TTM24-0003 (TTM 38971), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

DISCUSSION

Background and Request

The applicant, Phillip Fomotor, is requesting approval of Tentative Tract Map No. 38971 to create a sixteen-lot single-family residential subdivision. The subject property is zoned Residential Estate (R-E) and consists of a 19.81-acre project site currently consisting of 8 lots located north of the intersection of Mirage Cove Drive and Peterson Road. The proposed project requests approval of a Minor Variance to the Residential Estate (R-E) minimum required lot size from 1 acre to .98 acre for two of the proposed lots (lots 8 & 9) in order to be compatible with the established lot sizes of the immediate area and due to existing site constraints.

Project Summary

The proposed project will subdivide eight existing parcels totaling 19.81 gross acres into sixteen single-family residential lots. The residential subdivision will not be gated, similar to other residential developments in the vicinity. The project site has frontages along various public streets which include Mirage Cove Drive, Nielson Road, Peterson Road, and Kelley Lane (private street). The applicant has confirmed that access to the proposed parcels will be from Peterson Road. The subdivision of the project site will be proposed in two phases, Phase 1 includes the subdivision of three (3) southern parcels into eight (8) lots, identified as Lots 6, 7, 8, 9, 13, 14, 15, and 16. Once Phase 1 is subdivided architectural plans will be proposed for development of these parcels. Phase 2 will happen at a future date which includes the subdivision of five (5) northern parcels into eight (8) lots, identified as Lots 1, 2, 3, 4, 5, 10, 11, and 12. Once phase 2 is subdivided architectural plans will also be proposed for these lots.

The project also proposes a Minor Variance to reduce (two percent reduction) the 1-acre minimum lot size for two out of the sixteen proposed lots that have a size of .98 acres. All other lots will have sizes that range from 1 acre to 1.55 acres. The overall project density is .90 dwelling units per net acre, which complies with the maximum density of 1 dwelling unit per net acre under the R-E zoning district.

Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.

Planning Commission

On October 9, 2025, the Planning Commission conducted a duly noticed public hearing to consider the proposed project. Staff presented the highlights of the proposed project, and four public comments were received during the public hearing. As summarized in the meeting minutes attached to this report, the Commissioners asked questions which the staff addressed. After due consideration of the staff report and public testimony, the Planning Commission made the following motion, which included additional conditions of approval as recommended by staff. The Planning Commission also directed staff to review the inclusion of the equestrian trail. Staff reanalyzed the equestrian trail issue raised and based on our review of a Circulation Plan from 1981 (Resolution No. 81-60), equestrian trails were not planned for the area south of lot 7 implementation of the plan has been inconsistent along the designated portions. However, Condition of Approval No. 26 requires right of way dedication south of lot 7 at a width of 46' for future connectivity.

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS: 1) APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025070800) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA24-0009; 2) APPROVE MINOR VARIANCE CASE NO. VAR24-0005; 3) APPROVE TENTATIVE TRACT MAP CASE NO. TTM24-0003 (TTM 38971), SUBJECT TO THE CONDITIONS OF APPROVAL WITH THE ADDED CONDITIONS, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF REPORT; 4) DIRECT STAFF TO LOOK INTO EQUESTRIAN TRAIL INCLUSION; AND 5) ADD THE FOLLOWING THREE (3) CONDITIONS OF APPROVAL:

- **AS DETERMINED TO BE FEASIBLE BY THE CITY ENGINEER CURB AND GUTTER SHALL BE INSTALLED ALONG THE PROJECT FRONTAGE ON NIELSON ROAD AND PETERSON ROAD WITH THE CURB FACE AT A WIDTH TO BE DETERMINED DURING PLAN CHECK.**
- **EXISTING TAMARISK TREES ON THE PROJECT SITE SHALL BE REMOVED WITHIN 6 MONTHS FROM A FINAL DETERMINATION ON THE PROPOSED PROJECT BY THE CITY COUNCIL.**
- **THE ULTIMATE ROADWAY WIDTH AS DETERMINED BY THE CITY ENGINEER SHALL BE INSTALLED BY THE APPLICANT ON PETERSON ROAD FRONTING THE FOLLOWING ADDRESSES: 38841, 38785, & 38775 PETERSON ROAD.**

MOTION CARRIED 3/0 (VICE CHAIR BRYANT RECUSED).

Environmental Determination

An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND) in accordance with the provisions of the California Environmental Quality Act (CEQA) Guidelines Section 15070. Mitigation measures were recommended for Biological Resources and Tribal Cultural Resources. A Notice of Intent to Adopt a Mitigated Negative Declaration was published in *The Desert Sun* newspaper on July 20, 2025, and distributed to interested parties. The thirty-day public review period for the Draft Mitigated Negative Declaration commenced on July 21, 2025, and ended on August 19, 2025. During the review period, the City received one formal letter from the California Department of Fish and Wildlife (CDFW) commenting on the Draft IS/MND requesting additional mitigation measures to be incorporated. While the City is not required to respond to comments on an IS/MND, Sections 21091(d)(1) and 21092.5 of the Public Resources Code (PRC) and Section 150874 (b) of the California Environmental Quality Act Guidelines require that prior to project approval a Lead Agency must consider all comments received before making a final determination on the Initial Study/Mitigated Negative Declaration. Responses to comments received were prepared and have been incorporated into the draft revised IS/MND and included as Attachment 4. Those who provided comments were individually notified with the public hearing notice on September 24, 2025.

Assembly Bill 52 (AB 52) Tribal Consultation

State law requires public agencies in California to formally consult with Native American tribes that are traditionally and culturally affiliated with a project's geographic area, during the California Environmental Quality Act (CEQA) process. Eleven potentially interested tribes identified by the Native American Heritage Commission (NAHC) were contacted pursuant to AB 52 for information regarding their knowledge of cultural resources that were within or near the project area. Tribes had thirty days from the date of receipt of the notice to request consultation. Four tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Pechanga Band of Indians, and Quechan Tribe of the For Yuma) provided a response to the AB 52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on February 11, 2025. The Agua Caliente Band of Cahuilla Indians and the Pechanga Band of Indians were the only tribe to request a formal consultation in their letters dated March 7, 2025 and March 25, 2025. Consultation was concluded with all participating tribes on May 14, 2025. No additional requests for formal consultation were received, and the AB 52 noticing period was concluded.

Noticing Requirement

RMMC Section 17.74.020, *Hearing and notice*, requires that all property owners, as shown on the county's latest equalized assessment roll, within a 500-foot radius of the boundaries of the subject parcel(s) be notified of matters requiring a public hearing. If the number of property owners to whom the notice would be mailed is less than 25, then the mailing radius is required to be increased to 1,000 feet as measured from the exterior boundaries of the subject parcel.

On October 22, 2025, public hearing notices were mailed to property owners within a **500-foot** radius of the parcel boundary and posted at the City's designated community posting sites pursuant to the requirements of RMMC Chapter 17.74. Notification of the public hearing was published in *The Desert Sun* newspaper on October 26, 2025.

All written public comments related to the City Council's review of the proposed project received prior to the publication of this agenda packet, including any comments received for consideration of the Planning Commission, have been attached as Attachment 8; any oral testimony or comments made, including those by Developer, it's representatives, or public, if any, can be found on the video recording of the meeting on the city's website and were reviewed by the City Council prior to City Council's consideration of the item. All items were made publicly available at the same time as they were made available to a majority of the council in accordance with the Brown Act.

Attachments

Attachment 1 - 10/09/2025 PC Staff Report & Conditions of Approval

Attachment 2 - Aerial Photo

Attachment 3 - Public Hearing Notice

Attachment 4 - Draft Mitigated Negative Declaration

Attachment 5 - Draft Notice of Determination

Attachment 6 - 10/09/2025 Draft PC Minutes

Attachment 7 - Exhibits

Attachment 8 - Public Comments

ATTACHMENT 1

Planning Commission Staff Report

Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) – Applicant: Phillip Fomotor. Consideration of a 16-Lot Residential Subdivision on 19.81 Gross Acres. The Project Requests Approval of a Minor Variance to the Residential Estate (R-E) Minimum Required Lot Size of 1 Acre to .98 Acre for Two Lots. North of the Intersection of Mirage Cove Drive and Peterson Road (APN's: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022)

DATE	ITEM #
October 9, 2025	PUBLIC HEARINGS - 4B.
Presented To	**Presented By**
Planning Commission	Ben Torres, Planning Manager

RECOMMENDED ACTION

Recommend to the City Council:

1. Approval of the filing of a Mitigated Negative Declaration (SCH# 2025070800) based on Environmental Assessment Case No. EA24-0009; and,
2. Approval of Minor Variance Case No. VAR24-0005; and,
3. Approval of Tentative Tract Map Case No. TTM24-0003 (TTM 38971), subject to the Conditions of Approval, and based on the content and Findings in the staff report.

DISCUSSION

Facts

1. Applicant:	Phillip Fomotor
2. Request:	Consideration to subdivide eight (8) parcels totaling 19.81 acres into sixteen (16) residential lots. Phase 1 includes the subdivision of three (3) southern parcels into eight (8) lots, identified as Lots 6, 7, 8, 9, 13, 14, 15, and 16. Phase 2 includes the subdivision of five (5) northern parcels into eight (8) lots, identified as Lots 1, 2, 3, 4, 5, 10, 11, and 12. The project site is currently vacant and has a zoning designation of Residential Estate (R-E). A Minor Variance is proposed to consider a .98-acre size for two parcels; all other parcels will range in size from 1 acre to 1.55 acres. No single-family residence architectural plans are proposed as part of this project.

3. Location: North of the intersection of Mirage Cove Drive and Peterson Road. Assessor's Parcel Numbers: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022

4. Project Size: 19.81 gross acres

5. Existing Land Use and General Plan/Zoning: Vacant land; Residential Estate (R-E)

6. Date Application Deemed Complete: September 24, 2025

Background and Request

The applicant, Phillip Fomotor, is requesting approval of Tentative Tract Map No. 38971 to create a sixteen-lot single-family residential subdivision. The subject property is zoned Residential Estate (R-E) and consists of a 19.81-acre project site currently consisting of 8 lots located north of the intersection of Mirage Cove Drive and Peterson Road. The proposed project requests approval of a Minor Variance to the Residential Estate (R-E) minimum required lot size from 1 acre to .98 acre for two of the proposed lots (lots 8 & 9) in order to be compatible with the established lot sizes of the immediate area and due to existing site constraints. The site constraints include having three street frontages for these two proposed lots with right-of-way dedications on each frontage and being surrounded on all sides with roads or property not part of the project site. No single-family residence architectural plans or landscaping plans are proposed as part of this project. Per Condition of Approval No. 2 development of the property shall require the appropriate entitlement process as determined by the Planning Division at which time architectural plans and landscaping plans for the individual lots will be reviewed.

The following entitlements are requested: Environmental Assessment (EA24-0009), Minor Variance (VAR24-0005), and a Tentative Tract Map (TTM24-0003).

Site and Surrounding General Plan, Zoning and Land Uses

The 19.81-acre project site contains scattered vegetation and is currently vacant. Due to the configuration of the proposed subdivision it has frontages along various streets which include Nielson Road, Peterson Road, Mirage Cove Drive, and Kelley Lane. Part of the project site also borders the Whitewater Storm Channel. The site also shows signs of past disturbance.

The General Plan and zoning of the project site is R-E (Residential Estate with a maximum of one dwelling unit per net acre). The following table describes the surrounding land uses located adjacent to the subject property:

	General Plan and Zoning Designation	Land Use
Project Site	Residential Estate (R-E)	Vacant land
North	Residential Estate (R-E), Mobile Home Park (MHP), Floodways and Drainage Channels (OS-W)	Single-family residences, Mobile Home Park, Whitewater Storm Channel
East	Residential Estate (R-E) & Floodways and Drainage Channels (OS-W)	Single-family residences & Whitewater Storm Channel
South	Residential Estate (R-E) & Medium Density Residential (R-M)	Single-family residences & Vacant Land
West	Residential Estate (R-E) & Mobile Home Park (MHP),	Single-family residences & Mobile Home Park

Project Description

The proposed project will subdivide eight existing parcels totaling 19.81 gross acres into sixteen single-family residential lots. The residential subdivision will not be gated, similar to other residential developments in the vicinity. Access to the proposed parcels will be provided by various public streets which include Mirage Cove Drive, Nielson Road, and Peterson Road. One private street, Kelley Lane will also provide access. The subdivision of the project site will be proposed in two phases, Phase 1 includes the subdivision of three (3) southern parcels into eight (8) lots, identified as Lots 6, 7, 8, 9, 13, 14, 15, and 16. Once Phase 1 is subdivided architectural plans will be proposed for development of these parcels. Phase 2 will happen at a future date which includes the subdivision of five (5) northern parcels into eight (8) lots, identified as Lots 1, 2, 3, 4, 5, 10, 11, and 12. Once phase 2 is subdivided architectural plans will also be proposed for these lots. No single family home architectural plans are part of this current request.

The project also proposes a Minor Variance to reduce (two percent reduction) the 1-acre minimum lot size for two out of the sixteen proposed lots that have a size of .98 acres. All other lots will have sizes that range from 1 acre to 1.55 acres. The overall project density is .90 dwelling units per net acre, which complies with the maximum density of 1 dwelling unit per net acre under the R-E zoning district.

The proposed land use and gross lot size of each parcel is provided in the table below:

	Lot Size	**Land Use**
Overall Project Site	862,924 sq. ft. (19.81 ac)	16 lot subdivision
Proposed Lot 1	43,763 sq. ft. (1.00 ac)	Single-family residence
Proposed Lot 2	46,675 sq. ft. (1.07 ac)	Single-family residence
Proposed Lot 3	43,705 sq. ft. (1.00 ac)	Single-family residence
Proposed Lot 4	43,701 sq. ft. (1.00 ac)	Single-family residence
Proposed Lot 5	55,148 sq. ft. (1.26 ac)	Single-family residence
Proposed Lot 6	43,631 sq. ft. (1.00 ac)	Single-family residence
Proposed Lot 7	43,623 sq. ft. (1.00 ac)	Single-family residence
Proposed Lot 8	42,480 sq. ft. (0.98 ac)	Single-family residence
Proposed Lot 9	42,476 sq. ft. (0.98 ac)	Single-family residence
Proposed Lot 10	49,644 sq. ft. (1.14 ac)	Single-family residence
Proposed Lot 11	59,377 sq. ft. (1.36 ac)	Single-family residence
Proposed Lot 12	67,608 sq. ft. (1.55 ac)	Single-family residence
Proposed Lot 13	48,336 sq. ft. (1.11 ac)	Single-family residence
Proposed Lot 14	48,325 sq. ft. (1.11 ac)	Single-family residence
Proposed Lot 15	48,310 sq. ft. (1.11 ac)	Single-family residence
Proposed Lot 16	47,755 sq. ft. (1.10 ac)	Single-family residence

Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.

Analysis

Review Authority

The proposed project requires separate, but interrelated approvals: a Minor Variance to the Residential (R-E) minimum required lot size from 1 acre square feet to .98 acres for only two out of the sixteen proposed lots in order to be compatible with the established lot sizes of the immediate area; and a Tentative Tract Map to allow a sixteen-lot single-family residential subdivision with lots ranging in size from .98 acres square feet to 1.55 acres. The analysis that follows provides the basis for staff's recommendation to approve the Minor Variance and Tentative Tract Map applications.

Minor Variances allow for adjustments to the City's development standards for a particular property due to special circumstances. The Tentative Tract Map application is reviewed for the location, design, configuration, and potential impacts of the proposed use. Therefore, the findings to approve a Minor Variance to allow the reduction of the minimum lot size requirement from 1 acre to .98 acres would be made prior to consideration of the proposed residential subdivision.

The following analysis provides the foundation for the findings in the staff report. Together, the analysis and findings support staff's recommendation that the Planning Commission recommend approval of the project and all its components, subject to the Conditions of Approval in Attachment 2.

Minor Variances (Rancho Mirage Municipal Code Chapter 17.50)

Minor Variances are exemptions which can grant up to ten (10) percent of the standard being modified for development standards like minimum parcel size and provide relief from the City's development standards triggered by unusual or special circumstances on the property such as location, shape, size, surroundings, topography, or other condition where the application of the City's development standards denies property owners privileges enjoyed by other property owners in the vicinity and under identical zoning districts or creates an unnecessary, non-self-created hardship or unreasonable regulation which makes it obviously impractical to require compliance with the development standards.

Minor Variances may be granted when the strict application of the City's development standards denies the property owner privileges enjoyed by other property owners in the vicinity and under identical zoning districts or creates an unnecessary and non-self-created hardship or unreasonable regulation which makes it obviously impractical to require compliance with the development standards.

In compliance with State law, specific "findings" must be made before a decision-making body may approve a Minor Variance. After evaluating the information submitted by the applicant and analyzing relevant facts, staff concludes that approval of the Minor Variance is appropriate based on the following findings:

1. **Special Circumstances:** The two lots out of sixteen that propose .98-acre lot sizes are subject to additional right-of-way dedications and parkway requirements along Mirage Cove Drive, Nielson Road, and Peterson Road. These constraints reduce the buildable area of the project site and limit the applicant's ability to design a subdivision that complies with the current minimum lot size standard. The reduced lot sizes are compatible with adjacent residential development, which has similar site conditions. In addition, due to the subdivisions scattered parcel location the location of lots 8 & 9 is surrounded by existing streets or existing development on all sides so the lot sizes cannot be readjusted to meet the 1 acre minimum. As such, a Minor Variance is necessary to account for these site constraints and to allow for a compatible subdivision design.

2. **Preservation of Property Rights:** Granting the Minor Variance allows the property to be developed similarly to other nearby properties given the constraints on the two subject lots (8 & 9) with three public streets surrounding these lots in addition to property not part of the project site to the north. Many neighboring lots are smaller than the current 1-acre minimum lot size. The Minor Variance would ensure that the property owner can subdivide the property with similar lot sizes to what is already existing in the neighbored due to the constraints on this portion of the project site.

3. **No Detrimental Effects:** The Minor Variance will not harm public health, safety, or welfare. The subdivision has been designed to comply with applicable safety standards, including emergency access, fire protection, and drainage. The project does not increase density beyond what is permitted, nor does it introduce any use or physical condition that would negatively affect adjacent properties.

4. **Consistency with Surrounding Properties:** The variance does not grant a special privilege. The proposed lot sizes align with the established neighborhood pattern, which includes lots of varying sizes due to the earlier subdivision of properties. The Minor Variance maintains compatibility with surrounding homes and does not introduce any uses outside of those permitted in the R-E zoning district.

5. **General Plan and Neighborhood Compatibility:** The proposed subdivision aligns with the City's General Plan, supporting low-density large lot residential uses in the area.

While the proposed lot sizes range from approximately .98 acre to 1.55 acres, only two lots are .98 acres in size slightly below the 1 acre minimum due to right of way dedications and are .02 acre smaller than what is typically required in the R-E district. The reduction is minimal and does not result in a development intensity that exceeds what is envisioned in the General Plan. The request for a Minor Variance is reasonable given the project's conformance with density standards and the overall compatibility of the subdivision design with the surrounding built environment.

As designed and conditioned, the proposed project preserves the intent of low-density development, enhances the existing neighborhood fabric, and contributes to the City's goals for quality residential growth.

Tentative Map (Rancho Mirage Municipal Code Section 16.12.065)

A tentative map is a map approving the division of land for the purpose of sale, lease, or financing, and is governed by the Subdivision Map Act. A tentative map prescribes how the land is to be subdivided. The City's Subdivision Ordinance (Rancho Mirage Municipal Code Title 16 *Subdivisions*) establishes the minimum standards for the design of the lots, and the public improvements which serve them.

Once a tentative map is approved, the refined final map is approved by the City Council if deemed by the City Engineer to be in substantial conformance with the tentative map. The final map is then recorded with the Riverside County Recorder's Office, after which the newly created parcels may be individually sold and developed pursuant to the underlying General Plan and zoning regulations.

Subdivision Design

The proposed subdivision complies with the City's Development Code standards, except for the minimum lot size standard for the Residential Estate (R-E) zoning district, for which the applicant is requesting a Variance. Residential lot sizes range from .98 acres to 1.55 acres, resulting in an overall project density of .90 dwelling units per net acre. The following table compares the proposed subdivision with the City's Development Code standards for the R-E zoning district:

Development Feature	Development Standards	Proposed	Meets Requirements
Parcel Width	Minimum 100 ft.	Parcel widths range from 109.5 ft. to 179.23 ft.	Yes
Parcel Depth	Minimum 100 ft.	Parcel depths range from 284.06 ft. to 671.57 ft.	Yes
Lot Size	Minimum 1 acre	.98 acres to 1.55 acres	Yes, with approval of Minor Variance
Maximum Density	1 dwelling units per net acre maximum	.90 units per acre	Yes

As set forth in the above analysis, and with Minor Variance approval, the subdivision is in conformance with the Rancho Mirage General Plan, Rancho Mirage Municipal Code, and all applicable requirements of the Subdivision Map Act.

Access and Circulation

The proposed subdivision will not be gated. Access to the proposed parcels will be provided by various public streets which include Mirage Cove Drive, Nielson Road, and Peterson Road. One private street, Kelley Lane will also provide access. The proposed public and private roadway dimensions meet both City and Fire Department standards, as conditioned. Overall, the subdivision's design complies with the surrounding neighborhood

Grading and Drainage

The entirety of the project area has been disturbed in the past and currently remains vacant with scattered vegetation. The 19.81-acre project site is relatively flat with pad elevations ranging from 258.5 feet to 262.7 feet above sea level. These elevations were determined based on the site's topography and have been reviewed by the City Engineer. The existing terrain drains from the south, and the overall drainage pattern will generally remain consistent post-development, flowing from north to south.

To manage stormwater on-site, retention basins are proposed at the southern end of each parcel: The project's grading and drainage design ensures that all stormwater and nuisance water will be contained on-site. The basins will be sized to accommodate runoff from a worst-case 100-year storm event affecting the project's half-street frontage.

The Preliminary Hydrology Study for the proposed subdivision is on file with the Planning Division. As conditioned, the applicant is responsible for submitting the final hydrology report and grading plans to the Engineering Division for review and approval.

Additional Correspondence

As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. All utility providers, including gas, water, sewer, and cable/telecommunication services, are expected to serve the proposed parcels. Any comments received have been incorporated into this report and the Conditions of Approval.

Environmental Determination

An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND) in accordance with the provisions of the California Environmental Quality Act (CEQA) Guidelines Section 15070. Mitigation measures were recommended for Biological Resources and Tribal Cultural Resources. A Notice of Intent to Adopt a Mitigated Negative Declaration was published in *The Desert Sun* newspaper on July 20, 2025, and distributed to interested parties. The thirty-day public review period for the Draft Mitigated Negative Declaration commenced on July 21, 2025, and ended on August 19, 2025. During the review period, the City received one formal letter from the California Department of Fish and Wildlife (CDFW) commenting on the Draft IS/MND requesting additional mitigation measures to be incorporated. While the City is not required to respond to comments on an IS/MND, Sections 21091(d)(1) and 21092.5 of the Public Resources Code (PRC) and Section 150874 (b) of the California Environmental Quality Act Guidelines require that prior to project approval a Lead Agency must consider all comments received before making a final determination on the Initial Study/Mitigated Negative Declaration. Responses to comments received were prepared and have been incorporated into the draft revised IS/MND and included as Attachment 4. Those who provided comments were individually notified with the public hearing notice on September 24, 2025.

Assembly Bill 52 (AB 52) Tribal Consultation

State law requires public agencies in California to formally consult with Native American tribes that are traditionally and culturally affiliated with a project's geographic area, during the California Environmental Quality Act (CEQA) process. Eleven potentially interested tribes identified by the Native American Heritage Commission (NAHC) were contacted pursuant to AB 52 for information regarding their knowledge of cultural resources that were within or near the project area. Tribes had thirty days from the date of receipt of the notice to request consultation. Four tribes (Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Indians, Pechanga Band of Indians, and Quechan Tribe of the For Yuma) provided a response to the AB 52 Consultation Request Letter sent by the City of Rancho Mirage by certified mail on February 11, 2025. The Agua Caliente Band of Cahuilla Indians and the Pechanga Band of Indians were the only tribe to request a formal consultation in their letters dated March 7, 2025 and March 25, 2025. Consultation was concluded with all participating tribes on May 14, 2025. No additional requests for formal consultation were received, and the AB 52 noticing period was concluded.

Noticing Requirement

RMMC Section 17.74.020, *Hearing and notice*, requires that all property owners, as shown on the county's latest equalized assessment roll, within a 500-foot radius of the boundaries of the subject parcel(s) be notified of matters requiring a public hearing. If the number of property owners to whom the notice would be mailed is less than 25, then the mailing radius is required to be increased to 1,000 feet as measured from the exterior boundaries of the subject parcel.

On September 24, 2025, public hearing notices were mailed to property owners within a **500-foot** radius of the parcel boundary and posted at the City's designated community posting sites pursuant to the requirements of RMMC Chapter 17.74. Notification of the public hearing was published in *The Desert Sun* newspaper on September 28, 2025. Any information addressed to the Planning Commission, but received after completion of this final report, will be distributed at the public hearing. No comments have been received as of the publication date of this report.

FINDINGS

Pursuant to RMMC Section 17.50.060 *Findings and decision,* the review authority may approve a Minor Variance in whole or in part, with conditions, only if all of the following findings are made:

1. There are special circumstances applicable to the property, including location, shape, size, surroundings, or topography so that the strict application of this title denies the property of privileges enjoyed by other property in the vicinity and under identical zoning district classification. **Special circumstances apply to the subject property due to its scattered parcel location with parcels fronting various public and private streets and the fact that this subdivision is only considered continuous since property lines meet at the center of existing streets. The Minor Variance is only proposed for lots 8 & 9 which are surrounded by three public streets and property that is not part of the project site, which results in constraints given that lot sizes cannot be readjusted to meet the 1 acre minimum and that right-of-way dedications are required for all three streets further reducing the lot sizes. Both lots 8 & 9 propose lot sizes of .98 acres, which is a small deviation from the 1-acre minimum lot size required in the R-E zone. In addition, many residential lots in the vicinity have lot sizes that are less than 1 acre. Without a Minor**

Variance, strict application of the current minimum lot size standard would prevent the property from being subdivided for the two subject lots in a manner that is consistent with the established neighborhood pattern and typical lot sizes. Therefore, the Minor Variance is warranted to account for these site constraints and to allow a compatible subdivision design in accordance with General Plan Program LU 3.1B.

2. Granting the minor variance:
    A. Is necessary for the preservation and enjoyment of a substantial property right possessed by other property in the same vicinity and zoning district and unavailable to the property for which the minor variance is sought. **The proposed Minor Variance is necessary to preserve and enjoy a substantial property right that is already possessed by other properties in the same vicinity and zoning district but is unavailable to the subject property for the proposed lots 8 & 9 under current development standards due to right-of-way dedications on three street frontages. Without this Minor Variance, the subject property would be unable to develop two lots that are consistent with the established neighborhood pattern, limiting the property owner's ability to use their property comparably to others nearby. The Minor Variance ensures equitable treatment by allowing development compatible with surrounding properties and existing neighborhood character in accordance with General Plan Program LU 3.1B.**

    B. Would not be detrimental to the public health, safety, or welfare, or injurious to the property or improvements in the vicinity and zoning district in which the property is located. **The proposed Minor Variance would not be detrimental to the public health, safety, or welfare, or injurious to the property or improvements. The subdivision has been designed and conditioned to comply with applicable safety standards, including emergency access, fire protection, and drainage. The project does not increase density beyond what is permitted, nor does it introduce any use or physical condition that would negatively affect adjacent properties. In addition, the project will be subject to review and approval by the Building and Safety Division, Engineering Division, and Riverside County Fire Department to ensure compliance with all health and safety codes. These safeguards, combined with the project's compatibility with the surrounding neighborhood, ensure that the Minor Variance will not result in adverse impacts on the community.**

    C. Does not constitute a special privilege inconsistent with the limitations upon other property in the vicinity and zoning district in which the property is located. **The proposed Minor Variance to reduce by two percent the minimum lot size from 1 acre to .98 acres for two (2) out of the sixteen (16) proposed lots does not constitute a special privilege, as it aligns with the existing development pattern in the surrounding neighborhood. The proposed subdivision includes lots ranging in size from .98 acres to 1.55 acres. The proposed lot sizes are consistent with the established lot sizes in the area and do not grant any advantage beyond what has historically been permitted for similarly situated properties. The Variance serves to maintain neighborhood compatibility, rather than granting a special privilege.**

    D. Does not allow a use or activity which is not otherwise expressly authorized by the regulations governing the subject parcel. **The proposed Minor Variance does not authorize any use or activity that is not otherwise permitted by the zoning regulations for the project site. The current General Plan and zoning designation for the project site is Residential Estate (R-E), which allows for large lot single-family residential uses. The proposed project involves the subdivision of land for single-family homes at a density of .90 dwelling units per net acre, which is within the allowable density of 1 unit per net acre under both the General Plan and zoning designations.**

    E. Would not be inconsistent with the general plan. **The proposed project is consistent with the City's General Plan in that the current General Plan and zoning designation for the project site allows for the subdivision of property. The current General Plan and zoning designation for the project site is Residential Estate (R-E). The R-E zoning district identifies appropriate areas for large lot single-family uses. The General Plan density limit allows up to one dwelling unit per net acre, and the proposed project density is .90 dwelling units per net acre. The project is consistent with the General Plan land use designation in terms of land use, and the design and appearance of the project is compatible with the surrounding community as follows:**

        - **Land Use and Neighborhood Compatibility: The subdivision will create sixteen single-family residential lots, contributing to the City's housing stock. The proposed lot sizes remain generous and consistent with the scale of neighboring**

developments. The layout mirrors adjacent large residential lots. While the proposed subdivision utilizes a slightly reduced lot size minimum for two of the lots, it retains appropriate setbacks and open space, minimizes grading impacts, and preserves natural drainage patterns. The proposed design aligns with the established development pattern, supporting neighborhood continuity and cohesion in accordance with General Plan Program LU 3.1B.

While the proposed lot sizes range from approximately .98 acres to 1.55 acres, slightly below the 1 acre minimum required in the R-E zoning district, the reduction for two of the .98 acre lots is minimal (two percent reduction) and does not result in a development intensity that exceeds what is envisioned in the General Plan. The request for a Minor Variance is reasonable given the project's conformance with density standards and the overall compatibility of the subdivision design with the surrounding built environment.

As designed and conditioned, the proposed project preserves the intent of low-density development, enhances the existing neighborhood fabric, and contributes to the City's goals for quality residential growth.

3. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). **An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. A Mitigated Negative Declaration (SCH Number 2025070800) was prepared based on Environmental Case No. EA24-0009 and pursuant to the California Environmental Quality Act. The document contains mitigation measures pertaining to Biological Resources, and Tribal Cultural Resources. Environmental impacts will be less than significant with implementation of the project's mitigation measures.**

Pursuant to RMMC Section 16.12.065 *Action on tentative tract maps*, the review authority may approve a tentative tract map may be approved only if the following findings are made:

1. The proposed Tentative Tract Map is consistent with the City's General Plan as specified in Section 65451 of the California Government Subdivision Map Act. **The current General Plan and zoning designation for the project site is Residential Estate (R-E). The R-E zoning district identifies areas appropriate for large lot single-family uses. The allowable maximum density is one dwelling unit per net acre. The overall project density is .90 dwelling units per net acre, which complies with the maximum density under the R-E zoning district. As conditioned, the proposed tentative map is consistent with the City's General Plan and Subdivision Map Act.**

2. The design or improvement of the proposed subdivision is consistent with the City's General Plan, Zoning Ordinance requirements, as conditioned. **As set forth in the above analysis, the proposed subdivision is in conformance with the City's General Plan, zoning, and all applicable requirements of the Subdivision Map Act, as conditioned. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.**

3. The site is physically suitable for the type of development, as conditioned. **The proposed parcels comply with the majority of the City's Development Code standards for the underlying zoning designation, Residential Estate (R-E). The project site is physically suitable for the type of low-density residential development with proposed lots that are primarily 1 acre minimum in size with the exception of two out of the sixteen lots that have lot sizes of .98 acres. The overall project density is .90 dwelling units per net acre, which complies with the maximum density under the R-E zoning district.**

4. The site is physically suitable for the proposed density of development, as conditioned. **The proposed subdivision has an overall density of .90 dwelling units per net acre, which does not exceed the maximum permitted density of one dwelling unit per net acre under the R-E zoning district. In addition, the applicant shall comply with the recommendations of the Mitigated Negative Declaration. No residential development is being proposed in conjunction with the proposed subdivision. Detailed site planning, building footprints, floor plan, exterior design, landscaping, and grading will be submitted for review during the development review application process for the future development of the proposed parcels. The development of the proposed parcels will be subject to the development standards of the underlying zoning district in effect at the time of application submittal.**

5. The design of the subdivision and proposed improvements is not likely to cause substantial environmental damage or substantially and avoidably injure fish or wildlife or their habitat. **The project has been reviewed**

for compliance with the California Environmental Quality Act (CEQA). Based on the implementation of the project's Biological Resource Mitigation Measures, there would be no potential significant negative impacts upon environmental quality and natural resources. The project site is surrounded by existing developments to the in all directions. The project site has been partially disturbed in the past, and any site development will have to comply with the mitigation measures and requirements of the Mitigated Negative Declaration. The proposed project has less than a significant impact with the incorporation of mitigation measures provided in the adopted Mitigated Negative Declaration.

6. The design of the subdivision or the type of improvements is not likely to cause serious public health problems, as conditioned. **As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. As conditioned, agencies are expected to provide service to the proposed parcels, including providers of electricity, gas, water, sewer, and cable telecommunication services. Noise and fugitive dust associated with grading and construction of this project shall be mitigated through compliance with the proposed project's Mitigated Negative Declaration and the City's Municipal Code provisions regarding dust control and construction hours. Lastly, permits are required to be obtained to construct the new site improvements. No public health impacts are expected, as conditioned.**

7. The design of the subdivision or the type of improvements will not conflict with easements, acquired by the public at large, for access through or use of, property within the proposed subdivision, as conditioned. **As part of the subdivision review, staff sent notices to the Public Works Department, Riverside County Fire Marshal's Office, and all public utility companies and service agencies regarding the proposed subdivision. Any comments received have been incorporated into the staff report and the Conditions of Approval. The Tentative Map has been conditioned to record any necessary easements and abandon existing easements that are deemed unnecessary by the City Engineer. The incremental impact of the project on service system capacities is mitigated by the dedications and public improvements required within the Conditions of Approval requiring all necessary dedications and public improvements to be in accordance with the City's adopted General Plan.**

8. The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). **An Environmental Assessment form was submitted for the project, and the determination was made that the project required an initial study. A Mitigated Negative Declaration (SCH Number 2025070800) was prepared based on Environmental Case No. EA23-0003 and pursuant to the and pursuant to CEQA Guidelines Section 15070. The document contains mitigation measures pertaining to Biological Resources and Tribal Cultural Resources. Environmental impacts will be less than significant with implementation of the project's mitigation measures.**

Attachments

Attachment 1 - Aerial Photo.pdf

Attachment 2 - Conditions of Approval.pdf

Attachment 3 - Public Hearing Notice.pdf

Attachment 4 - Draft Mitigated Negative Declaration.pdf

Attachment 5 - Draft Notice of Determination.pdf

Attachment 6 - Exhibits.pdf

CONDITIONS OF APPROVAL

Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (Tentative Tract Map No. 38971) ("Project")

Special conditions (or portions thereof) are designated in **bold.**

I. GENERAL

1. All improvements shall conform to the provisions of the Rancho Mirage Municipal Code (RMMC), Title 16, (Subdivisions), unless specifically modified by any of the following conditions.

2. Development of the Subject Property shall require the appropriate entitlement process as determined by the Planning Division.

3. The Project approval shall be effective for two (2) years from the date of City Council approval. A Final Map must be approved by the City within this specified time period, or the Project approval shall become null and void unless the expiration date for the tentative map is extended as provided by RMMC Section 16.12.090.

4. The applicant shall execute a written acknowledgment to the Planning Division stating acceptance of and compliance with all of the Conditions of Approval for this Tentative Tract Map and all associated cases, and that the plans submitted are in compliance with the Conditions of Approval. No modifications shall be made to said plans without written approval from the appropriate decision-making body.

5. The Conditions of Approval set forth herein may include certain fees, dedication requirements, reservation requirements, and other exactions. Pursuant to Government Code Section 66020(d)(1), these Conditions constitute written notice of a statement of the amount of such fees, and a description of the dedications, reservations, and other exactions. You are hereby further notified that the 90-day approval period in which you may protest these fees, dedications, reservations, and other exactions, pursuant to Government Code Section 66020(a), has begun.

6. The development of the subject property shall conform substantially with the approved exhibits contained in **Case Nos. EA24-0009, VAR24-0005, and TTM24-0003** and all associated cases on file in the Planning Division. This includes all dimensional and size specifications, landscaping, hardscape, design treatments (including color and materials), and the locations of perimeter walls and plant materials as shown in the landscape exhibits.

7. Prior to issuance of any permits, the applicant shall acknowledge that the approved project and any or all proposed modifications to the approved project shall be completed in accordance with applicable City Ordinances, Guidelines, and other requirements in effect at the time of building permit issuance.

8. All green waste shall be disposed of at a permitted composting facility. The applicant shall undertake or cause to be undertaken such action or actions as are necessary to permit and/or otherwise accommodate the implementation of recycling services. Such action or actions may include, but are not limited to: designating and providing adequate area at

convenient locations with appropriate access for the placement of dumpsters and/or bin sets; constructing permanent enclosures that meet all requirements of the Code of the City of Rancho Mirage and each dumpster and/or bin set; providing for the security of each dumpster to discourage scavenging, and; providing adequate indoor area at convenient locations for the collection and short-term storage of recyclables. The applicant shall submit a "Recycling Program" that has been reviewed by an agent of the City, which, at a minimum, explains, states or otherwise defines: (1) recyclables generated by type; (2) estimate by pounds for each recyclable generated; (3) number of dumpsters and/or plastic bin sets (one set equals three "baskets") needed to accommodate estimated recyclables; (4) location of each dumpster (may be identified on a map attached as an exhibit); (5) method of collection such as curbside at each residential unit or at rear of property by dumpster, etc.; and (6) pick-up schedule for recyclables. The applicant shall provide other such information as may be necessitated by the development proposal.

9. The applicant shall comply with RMMC Chapter 9.60 which requires disclosure in the sale of residential property. The purpose of this chapter is to protect purchasers of new homes or lots for custom homes against unacceptable development on adjacent property by requiring the sellers of such homes and lots to disclose land use regulations applicable to contiguous properties and to disclose the nature of any development project approvals for such property that may exist.

10. **Grading permits shall not be issued prior to vertical development entitlements unless approved by the Public Works or Development Services Directors.**

11. **The location of this project is considered an "infill site" with very close proximity to existing residences. Should the City receive complaints about construction noise from residents in close proximity to the project, the City may limit construction activities to the hours between 7am and 5pm.**

12. **The mitigation measures contained in the Mitigated Negative Declaration (State Clearinghouse Number 2025070800) based on Environmental Case No. EA24-0009 are hereby incorporated as Conditions of Approval. The property owner shall be responsible for implementing the mitigation measures contained within the adopted Mitigated Negative Declaration, as necessary.**

13. **Within 5 days of project approval the applicant shall submit to the City of Rancho Mirage a check in the total amount of $3,018.75 made payable to the City of Rancho Mirage for the CEQA filing fees for the IS/MND (State Clearinghouse Number 2025070800).**

14. **If any portion of the subdivision is proposed to be converted into a gated community in the future Covenants, Conditions, and Restrictions (CC&RS) shall be submitted to the City for review and approval. In addition, any future gate plans if proposed shall be subject to review and approval by the Planning Division.**

15. **As determined to be feasible by the City Engineer curb and gutter shall be installed along the project frontage on Nielson Road and Peterson Road with the curb face at a width to be determined during plan check.**

16. **Existing tamarisk trees on the project site shall be removed within 6 months from a final determination on the proposed project by the City Council.**

17. **The ultimate roadway width as determined by the City Engineer shall be installed by the applicant on Peterson Road fronting the following addresses: 38841, 38785, & 38775 Peterson Road.**

II. PLANNING

Prior to City Council approval of the Final Map, the following Conditions shall be satisfied:

18. **Landscape Plans shall be submitted to the Planning Division for each of the lots when architectural plans are proposed. The Planning Division reserves the right to request additional landscaping upon final inspection of each lot created by this subdivision if it is determined that areas are devoid of plant or ground cover material.**

    A. The approved landscape plan may be modified only with City approval in a manner pursuant to Section 17.42.120 (Modification of a Development Plan Permit). Minor modifications to the approved plan may be considered by the Development Services Director.

    B. The project shall be completed in accordance with the Ordinances, requirements, guidelines, and other criteria in effect at the time of construction.

    C. Landscaping, Wall, and Grading Plans shall demonstrate that all electrical transformers, utility pads, cable TV and phone boxes, and similar utility fixtures will be screened, pursuant to RMMC Chapter 17.20 and/or installed underground if required.

    D. Landscaping. The plans shall be submitted as a Landscape Documentation Package in accordance with Ordinance No. 990, and as amended by Ordinance 1101. Such Plan(s) shall be consistent with the Preliminary Landscape Plan, and the applicant shall provide evidence that the landscape plan has been reviewed and approved by the Riverside County Office of the Agricultural Commissioner and the Coachella Valley Water District (CVWD) prior to requesting a final inspection. The final landscaping and irrigation plans shall incorporate the use of Evapotranspiration (ET) irrigation "smart" controllers which shall include automatic water scheduling, rain, and temperature sensors. Prior to a final inspection, the landscape contractor shall verify in writing with Planning staff that controllers have been installed, are correctly programmed, and operate with these features. More information on smart controllers can be found at www.irrigation.com. **The project landscape architect shall submit written verification that the landscaping and irrigation has been installed in accordance with the approved plans.**

        i. Vegetation with spikes that may be harmful to pedestrians shall be a minimum of three (3) feet away from walkways.

E. Walls. Where perimeter walls are shown on the development plan they shall be designed with aesthetic relief and be of high-quality architectural design to complement adjacent developments. In accordance with the Community Design Elements, the landscaped parkway and perimeter wall along all property lines shall be aesthetically enriched and subject to approval of Planning staff, with architectural review as deemed necessary. All top of wall elevations and adjacent finish grade elevations for the project perimeter and entry walls shall be subject to review and approval by the Planning Division and City Engineer. The applicant shall contact the adjacent property owners if grading outside the subdivision boundaries is required for construction of the perimeter walls. This shall be accomplished prior to issuance of any permit.

19. Future neighborhood signage shall be subject to approval and issuance of a separate sign permit or sign program.

III. PUBLIC WORKS

Prior to City Council Approval of the Final Map, the following Conditions shall be satisfied:

20. FORMATION AND/OR ANNEXATION TO CFD
Pursuant to Ordinance No. 485 the applicant shall provide evidence that formation of, or annexation to a Communities Facilities District (CFD) No. 1 – Police and Fire services – to pay the City annually for public service costs associated with this project has been initiated. This requires the submittal of an application fee, the preparation of a boundary map, and 6-8 weeks' processing time. The applicant is advised to begin the application process as soon as possible, because the CFD annexation must occur prior to issuance of Grading Permits, or prior to Final Map approval if there is one.

21. STUDIES AND CALCULATIONS REQUIRED
The applicant shall submit a soils report, geological and hydrology studies, and hydraulic calculations, as required by the City Engineer, prior to approval of the Grading Plan.

22. GRADING & DRAINAGE PLAN
The applicant shall be required to submit a grading and drainage plan prepared by a licensed civil engineer to the City Engineer for plan check and approval. The grading and drainage plan shall be consistent with any and all conditions of approval associated with any applicable subdivision map and any Development Permit entitlements issued for the subject project by the City or any other responsible public agency. The grading and drainage plan shall conform to all city policies, standards, and regulations applicable to the project. In addition, if the project involves grading and drainage issues related to Coachella Valley Water District (CVWD) facilities, written evidence of the District's approval shall be included with the submittal required by the City of Rancho Mirage.

23. STORMWATER RETENTION
The grading of the project shall be designed such that all storm water to the level of a 100 year frequency storm; worst case of the 1, 3, 6, or 24 hour duration, shall be retained on site, including the street frontage area. **Or** per Municipal Code Section 15.64.140.B, if

the project is less than 1 acre or if it is south of the Whitewater Flood Channel, the grading of the project may be designed for the drainage to be conveyed to an "acceptable disposal site as determined by the City Engineer". **Since this project is south of the Whitewater Channel, it could qualify for the drainage to an "acceptable disposal site", which could be the existing storm drain box culvert per AD 77-02 if it can be shown that it can take the additional stormwater flows. It would also need to be shown that water could be safely conveyed to this box culvert. The proposed retention basins on the individual lots, all approximately 1 acre or larger, is acceptable also.** Surface streets are not considered "an acceptable disposal site" for common "nuisance water" from sprinklers and cleaning. Therefore, at a minimum, all projects shall make provisions to absorb such "nuisance water" to the satisfaction of the City Engineer. A Hydrology/Hydraulic Report, in accordance with the Riverside County Hydrology Manual, shall be submitted from a Registered Civil Engineer, showing how this stormwater is handled.

24. WQMP

Whether they are in areas that must retain 100% stormwater or not, all discretionary projects that meet any of the following criteria must submit "Project-Specific Water Quality Management Plans (WQMP)" in accordance with Appendix H of the Whitewater River Region Storm Water Management Plan (SWMP) (available at: http://content.rcflood.org/NPDES/WhitewaterWS.aspx)

A.) "single family hillside residences that create 10,000 square feet or more of impervious area where natural slope is 25% or greater;

B.) single-family hillside residences that create 10,000 square feet of impervious area where the natural slope is 10% or greater where erosive soil conditions are known;

C.) Commercial and industrial developments of 100,000 square foot or more;

D.) Automotive repair shops [includes Standard Industrial Classification (SIC) codes 5013, 7532, 7333,7534, 7537, 7538, and 7539];

E.) Retail gasoline outlets disturbing greater than 5,000 square feet;

F.) Restaurants disturbing greater than 5,000 square feet;

G.) Home subdivisions with 10 or more housing units;

H.) Parking lots of 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to Urban Runoff; or

I.) Discharge into the MS4 (aka Municipal Storm Drain System) and disturb an area of one acre or more, or disturb less than one acre, but are part of a larger common plan of development or sale (referred to as Other Development Projects).

If any of the above criteria exist, or at the discretion of the City, a Final WQMP shall be required prior to permit issuance, with Recording of a Covenant, or other approved mechanism, establishing the WQMP as a Public Record that shall apply upon occupancy, and continuing forward, to all future operators/residents of the project. Any approved design modifications that take place during construction shall be documented and incorporated into the Recorded WQMP Covenant prior to occupancy.

Per category G above, this project will need to do a Final WQMP.

25. STANDARD AGREEMENT FOR CONSTRUCTION OF PUBLIC IMPROVEMENTS
If public infrastructure is to be included in this project, the applicant shall execute and submit the City of Rancho Mirage's Standard Agreement for Construction of Public Improvements for review and approval by the City Engineer and City Attorney.

26. STREET IMPROVEMENTS
Street improvements shall be required as specified below. Paved access in accordance with the City Master Plan of Streets and City Standards shall be provided to the subdivision. Plans for the construction of the required street improvements shall be designed by a California Registered Engineer and approved by the City Engineer prior to Final Map approval. All street construction shall be in conformance with these plans and the City's General Plan and Standard Details. Plans shall be approved prior to or concurrent with Final Development Plan approval and construction shall occur prior to occupancy. The developer shall furnish proof that any Sewer and Water Improvement Plans have been reviewed and approved by CVWD. The developer shall furnish proof that the Fire Marshal has approved the Water Plans and Street layout for the project.

A.) **Public Streets - Nielson Road and Peterson Road**

i. Right-of-way along **Nielson Road and Peterson Road** at a width of **23** feet from centerline shall be dedicated to the City of Rancho Mirage. Right-of-way south of Lot 7 shall be dedicated to the City of Rancho Mirage with a width of 46'.

ii. Asphalt paving shall be installed along the project per City Standards.

iii. Until such time as an alternative public storm drain system or street surface drainage system can be completed, this project must accept the responsibility for absorbing the water from the 100 year storm street drainage along the project frontage and the tributary area upstream.

iv. Landscape and irrigation plans for all public street parkways and median islands shall conform to City standards and be submitted for review and approval by the City Engineer and Planning Division. Boulders shall not exceed 15" in height within 3 feet of a public street curb. Canopy trees shall be placed a minimum of 10 feet from public street curb and a minimum of 5 feet from sidewalks. Palm trees shall be placed a minimum of 5 feet from public street curb or sidewalk with a minimum trunk height of 10 feet. Right of way lines shall be shown on the final landscape plan.

Public Streets - Mirage Cove Drive

v. Right-of-way along **Mirage Cove Drive** at a width of **30** feet from centerline shall be dedicated to the City of Rancho Mirage.

vi. Curb and Gutter shall be installed along the project frontage with the curb face at a width to be determined by the City Engineer. Asphalt paving shall be installed along the project per City Standards.

vii. Until such time as an alternative public storm drain system or street surface drainage system can be completed, this project must accept the responsibility for absorbing the water from the 100 year storm street drainage along the project frontage and the tributary area upstream.

viii. Landscape and irrigation plans for all public street parkways and median islands shall conform to City standards and be submitted for review and approval by the City Engineer and Planning Division. Boulders shall not exceed 15" in height within 3 feet of a public street curb. Canopy trees shall be placed a minimum of 10 feet from public street curb and a minimum of 5 feet from sidewalks. Palm trees shall be placed a minimum of 5 feet from public street curb or sidewalk with a minimum trunk height of 10 feet. Right of way lines shall be shown on the final landscape plan.

B.) **Private Streets Kelley Lane**

i. Private street paving shall consist of a minimum of 3" A.C. paving over 4" of compacted Class II aggregate base material. On private streets, decorative concrete or other surfacing materials shall be reviewed by Public Works for conformance to Public Works standards**.**

ii. On private streets, non-standard curb and gutter may be acceptable if the City's standard drainage criteria is satisfied, and the specific non-standard curb and gutter is approved by the Department of Public Works. **To be consistent with Kelley Lane to the south of Mirage Cove there is no curb and gutter required, in lieu of drainage in a swale located 3 feet from the edge of the paving.**

iii. The private street design and construction shall be completed in accordance with the City of Rancho Mirage standards and codes unless superseded by more stringent requirements from the State or Federal ADA guidelines. Such design shall include demonstration of adequate fire and delivery truck turning movements.

iv. In accordance with Municipal Code 17.26.070(d), all required off-street parking areas shall be designed so that surface water shall not drain over any sidewalks or adjoining parcels.

v. Private streets within the project shall be constructed with a minimum two-way travel way of **28 feet. An additional 23 feet of dedication as a private street shall be done along Kelley Lane to augment the existing easements along the east side of Kelley Lane. The additional paving should be built to match what is existing along Kelley Lane in that area already, expanding the width to 28 feet as needed. A "hammerhead" type of Fire Department turnaround area shall be provided on the north end of Kelley Lane, which may overlap a private driveway. As a private street, a gate can be added if the existing residents on Kelley Lane agree to it. The design should be reviewed for approval by the Planning and Engineering Departments.** Any median islands

shall have a minimum of 24 feet clearance on either side of them. Private street paving shall consist of a minimum of 3" A.C. paving over 4" of compacted Class II aggregate base material.

27. DEDICATION OF PUBLIC UTILITY EASEMENTS
A ten (10) foot public utility easement adjacent to the curb and gutter and edge of pavement shall be provided by the property owner for all public and private streets, and for public streets where the public right-of-way is less than the required 10 feet. All necessary utilities: sewer, water, electric, phone, fiber optic communications, natural gas, and television cable shall be provided to the lots and along the property frontage, unless otherwise approved.

28. UNDERGROUND UTILITIES REQUIRED
All existing or proposed Southern California Edison, General Telephone, CATV, or other overhead service facilities, shall be installed underground in accordance with the provisions of Section 12.16 of the Rancho Mirage Municipal Code. The underground installation of all existing or proposed overhead distribution utility lines shall be completed and/or appropriate guarantee arrangements shall be entered into for any structure constructed pursuant to this approval as required by the City Engineer. Such guarantee arrangement shall be approved by the City administrative staff and the City Attorney and shall include the posting of improvement security adequate to secure the periphery of the subject property; and as identified above and as required in Section 12.16 of the Rancho Mirage Municipal Code.

29. SANITARY SEWER SYSTEM
A sanitary sewer system shall be required and shall be installed in accordance with the provisions established and set forth by the regulations of the Coachella Valley Water District, the Riverside County Department of Public Health, and/or the regional Water Quality Control Board. All necessary easements shall be provided.

30. DOMESTIC WATER SYSTEM
A domestic water system shall be required and shall be installed in accordance with the provisions established and set forth by the regulations of the Coachella Valley Water District, the Riverside County Department of Public Health, and/or the regional Water Quality Control Board. All necessary easements shall be provided.

31. LOCAL AIR QUALITY MANAGEMENT PLAN (LAQMP)
The applicant shall prepare a Local Air Quality Management Plan (LAQMP) pursuant to Ordinance No. 855, Municipal Code Chapter 7.01. Said LAQMP shall detail the project's potential impact upon the air quality of the area and any necessary mitigation measures and shall be submitted to the Public Works Department for review and approval prior to the issuance of the Grading Permit. For ease of preparing a LAQMP, the applicant may contact the Public Works Department regarding use of the LAQMP worksheet. Projects over 10 acres shall also submit the 8.5"x11" format Dust Control Plan required by the South Coast Air Quality Management District for review by the City. At the time of payment of the permit fees the developer shall submit a "dust control deposit" to be determined from the acreage and the current fee schedule.

32. SWPPP/NOI
Prior to issuance of Grading Permits, the Property Owner shall submit the completed NOI **(Notice Of Intent)** form and site plan with the appropriate fee, to the State Water Quality Control Board for the General Construction Activity Storm Water Permit. The WDID number issued shall be placed on the cover sheet of the Grading Plans as Proof of Submittal. **The SWPPP promised by the NOI is required to be kept on the project site and may be requested for viewing by City or Water Quality Control Board personnel.**

33. CONSTRUCTION IMPROVEMENT AGREEMENT
The construction of all required public and private improvements, including but not limited to landscaping, sewer, water, curb and gutters, paving, drainage facilities, and other required improvements shall be completed prior to occupancy of any structure and/or the subdivider shall enter into an agreement, acceptable to the City, ensuring the construction of such improvements within eighteen (18) months of City Council approval of the Final Map.

34. WRITTEN VERIFICATION
Prior to release of bonds or financial guarantees, the applicant or his successor shall provide written verification that the improvements have been installed in accordance with the approved plans.

35. AS-BUILT PLANS
A complete set of “As-Built” Grading, Sewer, Water, Landscaping, Street, Storm Drain, and all other required improvement plans shall be submitted by the engineer of record for review and approval, prior to any occupancy or release of Subdivision Bonds.

36. SUBDIVISION MAP
A subdivision map shall be processed and recorded prior to any release of permits.

37. SECURITY
In accordance with the request of the Rancho Mirage Police Chief, the site shall be fenced and gated for security purposes. Screening material shall be placed on the fence to help block blowsand and to block views through the fence. If necessary, the applicant shall provide a state licensed private security officer during the time construction workers are not onsite.

38. PAD CERTIFICATION
Prior to release of Building Permits, a Pad Certification submitted from a Licensed Land Surveyor or Civil Engineer, attesting to the elevation matching the rough grade pad elevation shall be submitted to validate the rough grading completion.

39. COMPACTION REPORT
Prior to the release of Building Permits, the lot(s) for the building(s) shall have a compaction report submitted by a Geotechnical Engineer attesting to the buildable pad being compacted at least 90% of maximum relative density. If any over-excavation, or slopes steeper than 2:1, are needed for the building pad, a Geotechnical Engineer shall submit a document attesting to the acceptability of this non-standard earthwork in accordance with the recommendations of the preliminary soil report.

40. ASSESSMENT DISTRICT REAPPORTIONMENT
If the property to be subdivided is located within the boundaries of an Assessment District, assessments shall be reapportioned over the property to account for the newly created lots.

41. PARK FEES
Applicant shall pay all applicable parkland fees for the acquisition and/or development of community parks and recreational facilities in those amounts in effect at the time the grading permit is issued.

42. IMPROVEMENTS COMPLETED PRIOR TO OCCUPANCY
Prior to occupancy, the construction of all required public improvements, including but not limited to sewer, water, curb and gutters, paving to join, stormwater drainage facilities, and other required utility improvements shall be completed.

43. CVWD LETTER
Prior to occupancy, if applicable, a letter from Coachella Valley Water District (CVWD) shall be submitted stating that all the district fees have been paid and all requirements have been met for development.

IV. CITY ATTORNEY

Prior to City Council approval of the Final Map, the following Conditions shall be satisfied:

44. INDEMNITY AGREEMENT
The permittee shall defend, indemnify, and hold harmless the City, its agents, officers, and employees from any claim, action, or proceeding against the City or its agents, officers, or employees to attack, set aside, void or annul this permit approval. The City shall notify the permittee of any claim, action, or proceeding and the City shall cooperate in the defense. If the City fails to notify the permittee of any claim, action or proceeding of which the City has written notice, the permittee shall not thereafter be responsible to defend, indemnify, or hold harmless the City.

45. REIMBURSEMENTS
The permittee shall reimburse the City for any court and attorney's fees which the City may be required to pay as a result of any claim or action brought against the City because of this grant. Although the permittee is the real party in interest in an action, the City may, at its sole discretion, participate in the defense of the action, but such participation shall not relieve the permittee of any obligation under this Condition.

46. IMPROVEMENT SURETY
Pursuant to Chapter 15.64.280 of the Rancho Mirage Municipal Code, all public improvements proposed with the Development Plan submittal, or required by the adopted approval Conditions, shall be guaranteed by cash bonds, letters of credit, or other legal instruments acceptable to the City Attorney and City Council.

47. RELEASE OF PLANS
Written authorization must be obtained from any certified, licensed, or registered

professional who signed the original building plans authorizing the plans to be made available by the City to all subsequent owners upon request (if on file with the City at the time of the request) for use by any subsequent owners solely for the construction, maintenance, operation, and use of the subject building(s) at the Project Site.

48. NOTICE TO CITY UPON DEFAULT, FORECLOSURE OR BANKRUPTCY
In the event that the applicant receives a notice of default from any lender in connection with funds loaned to the applicant for the proposed development, or that any security instrument given by the applicant to any lender is foreclosed upon whether through a trustee's sale or otherwise, or that the applicant files a petition for bankruptcy, the applicant shall immediately notify the City of such notice of default, foreclosure sale, and/or filing of the bankruptcy petition, as the case may be.

49. MAINTENANCE OBLIGATIONS
The current and future property owner(s) shall be responsible for maintaining in compliance with all City standards for the same, the on-site and off-site landscaping and integrated architectural features required by this entitlement; all perimeter landscaping shall be maintained in a first-class condition. Landscape maintenance shall consist of regular watering mowing, pruning, fertilizing, clearing of debris and weeds, and the removal and replacement of irrigation systems, in compliance with all relevant and applicable provisions of the Rancho Mirage Municipal Code. Integrated architectural features must be kept in a manner which maintains the desirability of the immediate area and neighboring areas and respects the harmonious relationship with existing and adjoining developments. Due regard for preservation of each feature and its intended irrigation with surrounding landscaping, buildings, structures, screening, and signs is required. All features must be maintained in a manner commonly accepted by professionals who are experts in the care and preservation of each particular type of feature. A covenant to assure continued maintenance of on-site and off-site required landscaping and integrated architectural features by the current and future property owners or other liable entity, consistent with the terms and provisions of this condition of approval, shall be prepared in a format approved by the City Attorney and recorded in the Office of the Riverside County Recorder against all parcels created with this subdivision and any subsequent amendments thereto.

V. FIRE MARSHAL

50. The proposed project may have a cumulative adverse impact on the Fire Department's ability to provide an acceptable level of service. These impacts include an increased number of emergency and public service calls due to the increased presence of structures, traffic, and population. The project proponents/developers will be expected to provide for a proportional mitigation to these impacts via capital improvements and/or impact fees.

51. Fire Department emergency vehicle apparatus access road locations and design shall be in accordance with the California Fire Code, City of Rancho Mirage Municipal Code, and Riverside County Fire Department Standards. Plans must be submitted to the Fire Department for review and approval prior to building permit issuance.

52. Fire Department water system(s) for fire protection shall be in accordance with the California Fire Code, City of Rancho Mirage Municipal and Riverside County Fire Department Standards. Plans must be submitted to the Fire Department for review and approval prior to building permit issuance.

53. Prior to Building Permit issuance, the required water system, including all fire hydrant(s), shall be installed, and accepted by the appropriate water agency and the County Fire Department prior to any combustible building material placed on an individual lot. Contact the Fire Department to inspect the required fire flow, street signs, all weather surfaces, and all access and/or secondary access. Approved water plans must be at the job site.

ATTACHMENT 2

Tentative Tract Map No. 38971 -16 Lot Subdivision



ATTACHMENT 3

CITY OF RANCHO MIRAGE

Planning Division
69-825 Highway 111
Rancho Mirage, CA 92270
Planning@RanchoMirageCA.gov
(760) 328-2266

PUBLIC HEARING NOTICE

CITY COUNCIL MEETING
Thursday, November 6, 2025 – 1:00 p.m.

Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) ("Project")

Applicant: Phillip Fomotor

Request: Consideration to subdivide eight (8) parcels totaling 19.81 acres into sixteen (16) residential lots. Phase 1 includes the subdivision of three (3) southern parcels into eight (8) lots, identified as Lots 6, 7, 8, 9, 13, 14, 15, and 16. Phase 2 includes the subdivision of five (5) northern parcels into eight (8) lots, identified as Lots 1, 2, 3, 4, 5, 10, 11, and 12. The project site is currently vacant and has a zoning designation of Residential Estate (R-E). A Minor Variance is proposed to consider a .98-acre size for two parcels; all other parcels will range in size from 1 acre to 1.55 acres. No single-family residence architectural plans are proposed as part of this project. The Planning Commission recommended approval on October 9, 2025.

Location: North of the intersection of Mirage Cove Drive and Peterson Road. Assessor's Parcel Numbers: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022

NOTICE IS HEREBY GIVEN that a Public Hearing will be held before the City of Rancho Mirage City Council regarding consideration of the above referenced applications pursuant to Rancho Mirage Municipal Code Titles 16 and 17. An Environmental Assessment form was submitted for the Project, and the determination was made that the Project required an initial study. An Initial Study has been prepared to result in the recommendation to adopt a Mitigated Negative Declaration (MND). A Notice of Intent to Adopt a Mitigated Negative Declaration was published in *The Desert Sun* newspaper on July 20, 2025, and distributed to interested parties. The 30-day public review period for the Draft Mitigated Negative Declaration was from July 21, 2025, to August 19, 2025.

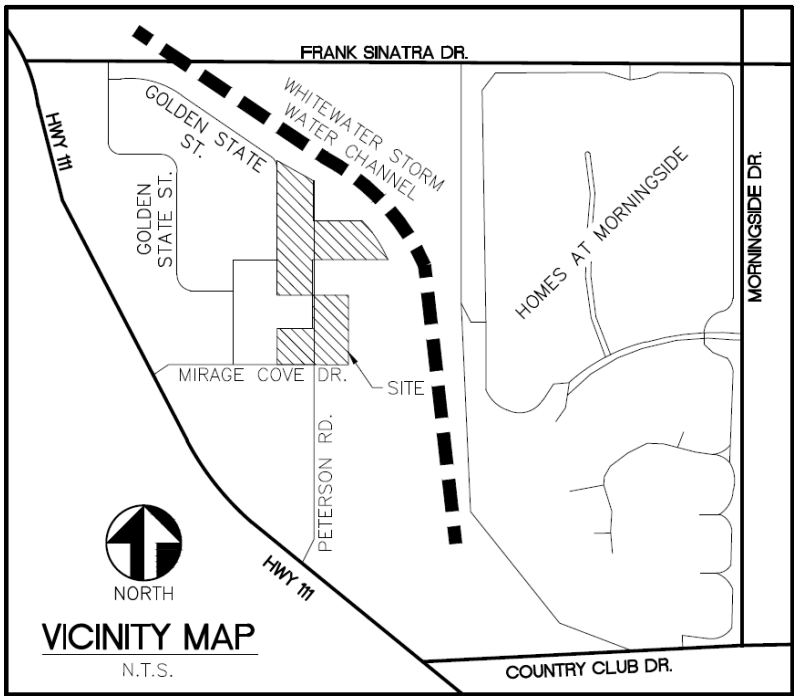
The Public Hearing will be held on Thursday, November 6, 2025, at 1:00 p.m., in the Council Chamber, 69-825 Highway 111, Rancho Mirage, California, at which time and place pertinent testimony will be heard. The file, including all environmental information, is available for

public inspection at City Hall, Monday through Friday, between 8 a.m. and 5:00 p.m., and will be posted on the City's website with the publication of the City Council Agenda, to be posted at least 72 hours prior to the meeting.

Written testimony may be submitted to the City Clerk via email to CityClerk@RanchoMirageCA.gov, or mailed to City of Rancho Mirage, ATTN: City Clerk, 69-825 Highway 111, Rancho Mirage, CA 92270. Written testimony must be received no later than 10:00 a.m. on the day of the meeting to be considered by the City Council.

GOVERNMENT CODE § 65009 NOTICE: If you challenge this proposed activity in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice, or in written correspondence delivered to the City Council sufficiently prior to the Public Hearing to enable its consideration by them.

Vicinity Map – Not to Scale



16 Lot Subdivision
Tentative Tract Map (TTM) 38971
Initial Study and Mitigated Negative Declaration

Lead Agency:
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, California 92270

Prepared by:
BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 S. HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

June 2025

ENVIRONMENTAL INITIAL STUDY

Tentative Tract Map 38971

Project Title:	Tentative Tract Map 38971 - 16 Lot Subdivision
City Project No:	Environmental Assessment Case No. EA24-0009 Tentative Tract Map Case No. TTM24-0003 for Tentative Tract Map 38971 Minor Variance Case No. VAR24-0005
Lead Agency Name and Address:	City of Rancho Mirage 69-825 Highway 111 Rancho Mirage, California 92270 Phone: (760) 328-2266
Applicant:	Horti Caesaris, LLC 9401 Wilshire Blvd, 9th Foor Beverly Hills, CA 90212
Contact Person:	Pilar Fløtterud, Senior Planner
Phone Number:	(760) 328-2266
Project Location:	North of the intersection of Mirage Cove Drive and Peterson Road in the City of Rancho Mirage, California
Accessor Parcel Number(s):	689-090-003, 689-130-004, 689-130-005, 689-130-013, 689-130-014, 689-130-017, 689-130-018, 689-140-022
Project Area:	19.81 Acres
General Plan & Zoning Designation:	The General Plan/Zoning designation for the project area is *Residential Estate (R-E).*

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CHAPTER 1: PROJECT DESCRIPTION

PROJECT OVERVIEW

The City of Rancho Mirage is reviewing an application that would involve the subdivision of 16 lots within 8 parcels totaling 19.81 acres. Currently, the three southern parcels would subdivided into 8 lots - Lot 6, 7, 8, 9, 13, 14, 15, and 16. This would be phase 1 of the project. Phase 2 of the project involves the remaining 5 northern parcels which would be subdivided into 8 lots - Lots 1, 2, 3, 4, 5, 10, 11, and 12. The subject parcels are all vacant and undeveloped. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. The terrain in the project area is generally level, with ground elevations ranging approximately from 255 feet to 260 feet above mean sea level. The surface soil is composed of light olive gray fine sand. The project is located within what is considered to be the California Creosote Bush Scrub plant community though the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses. The Zoning designation that is applicable to the aforementioned parcels is *Residential Estate (R-E)*. No General Plan Amendment or Zone Change would be required for the proposed residential development.

PROJECT LOCATION AND SETTING

The proposed project site is located in the west-central portion of the City of Rancho Mirage. The City of Rancho Mirage is located in the eastern portion of Riverside County within the Coachella Valley area. Rancho Mirage is generally bounded on the north by Thousand Palms and Cathedral City, on the east by Palm Desert, on the south by Palm Desert and unincorporated Riverside County, and on the west by Cathedral City. Regional access to the City of Rancho Mirage is provided by the Interstate 10 (I-10) Freeway which extends across the northernmost portion of the City. The I-10 Freeway is located approximately 4.84 miles north of the project area. The location of Rancho Mirage, in a regional context, is shown in Exhibit 1. A citywide map is provided in Exhibit 2.

The proposed project would include 16 residential lots (referred to as Lots 1 through 16) and 4 lots for future streets (referred to Lots A through D). The project will undergo two phases. Phase 1 of the project would be the subdivision of Lots 6-9, and lots 13-16. Phase 2 of the project would be the subdivision of lots 1-7 and lots 10-12. The proposed project area is generally bounded on the north by the Whitewater Stormwater Channel, on the west by Golden State Street, a private street with no access to the subject site, on the south by Mirage Cove Drive, and on the east by the Whitewater Stormwater Channel and Kelley Lane. The proposed subdivision is bisected by Peterson Road in a north-to-south orientation. The project site is currently comprised of 8 vacant, undeveloped parcels that would be subdivided into 16 parcels. The Assessor Parcel Numbers (APNs) that comprise the proposed project area include 689-090-003; 689-130-004; 689-130-005; 689-130-013; 689-130-014; 689-130-017; 689-130-018; and 689-140-022. The project site is located within the Cathedral City, Calif., United States Geological Survey (USGS) 7 ½ Minute Quadrangle (Section 2, Township T5S Range R5E, San Bernardino Baseline and Meridian). The proposed project's latitude and longitude is 33.76919 N and -116.43917 W. A local vicinity map is provided in Exhibit 3.

DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed project would involve the subdivision 16 lots within the 19.81-acre site. The terrain in the project area is generally level, with elevations ranging approximately from 255 feet to 260 feet above mean sea level. The 16 individual lot sizes would range in land area from 42,476 square feet to 67,608 square feet. The lots would be arranged along Peterson Road around the proposed cul-de-sac roadway. The project will undergo two phases. Currently, the three southern parcels would subdivided into 8 lots - Lot 6, 7, 8, 9, 13, 14, 15, and 16. This would be phase 1 of the project. Phase 2 of the project involves the remaining 5 northern parcels which would be subdivided into 8 lots - Lots 1, 2, 3, 4, 5, 10, 11, and 12.

ACCESS AND PARKING

Access to the future residential subdivision would be provided along Peterson Road. The individual units would be arranged along Peterson Road. Lots A and B would be future Peterson Road extensions through the project.

ENERGY UTILITIES

The Southern California Edison (SCE) would provide electricity to the project site. Natural gas service is provided by the Southern California Gas Company.

WATER UTILITIES

There is no existing water infrastructure located on-site. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. Groundwater is the primary source of domestic water supply in the Coachella Valley. The Coachella Valley Water District (CVWD) is the largest provider of potable water in the Coachella Valley and currently provides potable water in the vicinity of the project area.

WASTEWATER UTILITIES

There is no existing wastewater infrastructure located on-site. CVWD operates 6 water reclamation plants and maintains more than 1,000 miles of sewer pipelines and more than 30 lift stations that transport wastewater to the nearest treatment facility and nearly 6.3 billion gallons of wastewater is treated yearly. In addition, wastewater generated by the project will be conveyed to CVWD Wastewater Reclamation Plant Number 10 in Palm Desert (WRP-10). According to the 2015 CVWD Urban Water Management Plan, WRP-10 has a capacity to treat 18 million gallons per day (MGD).

SOLID WASTE

Solid waste disposal and recycling services for the City of Rancho Mirage are provided by Burrtec. Solid waste and recycling collected from the proposed project will be transported to the Edom Hill Transfer Station. Waste from this transfer station is then sent to a permitted landfill or recycling facility outside of the Coachella Valley. These include the Badlands Disposal Site, the El Sobrante Sanitary Landfill, and the Lamb Canyon Disposal Site.

The proposed site plan is illustrated in Exhibit 5. The project is summarized in Table 1.

Table 1 Project Summary (Lot Characteristics)

Lot	Description	Lot Area
Lot 1	Single-Family Residential Unit	43,763 sq. ft.
Lot 2	Single-Family Residential Unit	43,675 sq. ft.
Lot 3	Single-Family Residential Unit	43,705 sq. ft.
Lot 4	Single-Family Residential Unit	43,701 sq. ft.
Lot 5	Single-Family Residential Unit	55,148 sq. ft.
Lot 6	Single-Family Residential Unit	43,631 sq. ft.
Lot 7	Single-Family Residential Unit	43,623 sq. ft.
Lot 8	Single-Family Residential Unit	42,480 sq. ft.
Lot 9	Single-Family Residential Unit	42,476 sq. ft.
Lot 10	Single-Family Residential Unit	49,644 sq. ft.
Lot 11	Single-Family Residential Unit	59,377 sq. ft.
Lot 12	Single-Family Residential Unit	67,608 sq. ft.
Lot 13	Single-Family Residential Unit	48,336 sq. ft.
Lot 14	Single-Family Residential Unit	48,325 sq. ft.
Lot 15	Single-Family Residential Unit	48,310 sq. ft.
Lot 16	Single-Family Residential Unit	47,755 sq. ft.
Lot A	Public Street	58,083 sq. ft.
Lot B	Public Street	30,357 sq. ft.
Lot C	Public Street	2,517 sq. ft.
Lot D	Private Street	14,608 sq. ft.

Source: Fomotor Engineering. *Tract Map 38971*. November 21, 2024.

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES

The terrain in the project area is generally level, with elevations ranging approximately from 255 feet to 260 feet above mean sea level. The surface soil is composed of light olive gray fine sand. The project location is within what would be the California Creosote Bush Scrub plant community; however, the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses. The entirety of the project area has been disturbed in the past, with all native vegetation being removed. A paved road, fencing along the Whitewater drainage, and utility poles, are located adjacent to the project area, but all of these items are modern in origin. The site and the surrounding area are shown in an aerial photograph provided in Exhibit 4.

The project site is currently comprised of 8 vacant, undeveloped parcels that would be subdivided into 16 parcels. The Zoning designation for the project area is *Residential Estate (R-E).* Land uses and development located in the vicinity of the proposed project site are outlined below:

- *North of the project site:* The Whitewater Flood Control Channel generally extends along the project area's north side. This area is designated as *Open Space – Floodways and Drainage Channels (OS-W)*.

- *East of the project site:* Single family homes are located to the east of the project site. These homes are designated as *Residential Estate (R-E)*. Further east, the Whitewater Flood Control Channel generally extends along the project area's east side. These parcels are designated as *Open Space – Floodways and Drainage Channels (OS-W)*.

- *South of the project site:* Mirage Cove Drive extends along the project area's south side. Vista Cove at Rancho Mirage, a resort, and a vacant lot are located further south of the aforementioned roadway. These parcels are designated as *Residential Estate (R-E)*.

- *West of the project site:* Nielson Road extend along the project area's west side. Further west of the road are single family homes and a mobile home park. These parcels are designated as *Mobile Home Park (MHP)* and *Residential Estate (R-E)*.

An aerial photograph of the project site and the surrounding area is provided in Exhibit 4. The land use and zoning map is provided in Exhibit 5.

DISCRETIONARY APPROVALS & OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED

A Discretionary Action is an action taken by a government agency (for this project, the government agency is the City of Rancho Mirage) that calls for an exercise of judgment in deciding whether to approve a project. The project site is currently comprised of 8 vacant, undeveloped parcels that would be subdivided into 16 parcels. The Zoning designation that is applicable to the aforementioned parcels is Residential Estate (R-E). No General Plan Amendment or Zone Change would be required for the proposed residential development. The following discretionary approvals are required:

- Approval of a Tentative Tract Map (TTM 38971);
- Approval of the Mitigated Negative Declaration (MND); and,
- The adoption of the Mitigation Monitoring and Reporting Program (MMRP).

All potentially interested tribes identified by the NAHC were also contacted pursuant to AB-52 for information regarding their knowledge of cultural resources that were within or near the project area. There are currently no other public agencies whose approval is required at this time.

A Minor Variance (VAR24-0005) is also proposed to reduce the net lot area of lots 8 & 9 from a 1 acre minimum to .98 acres.

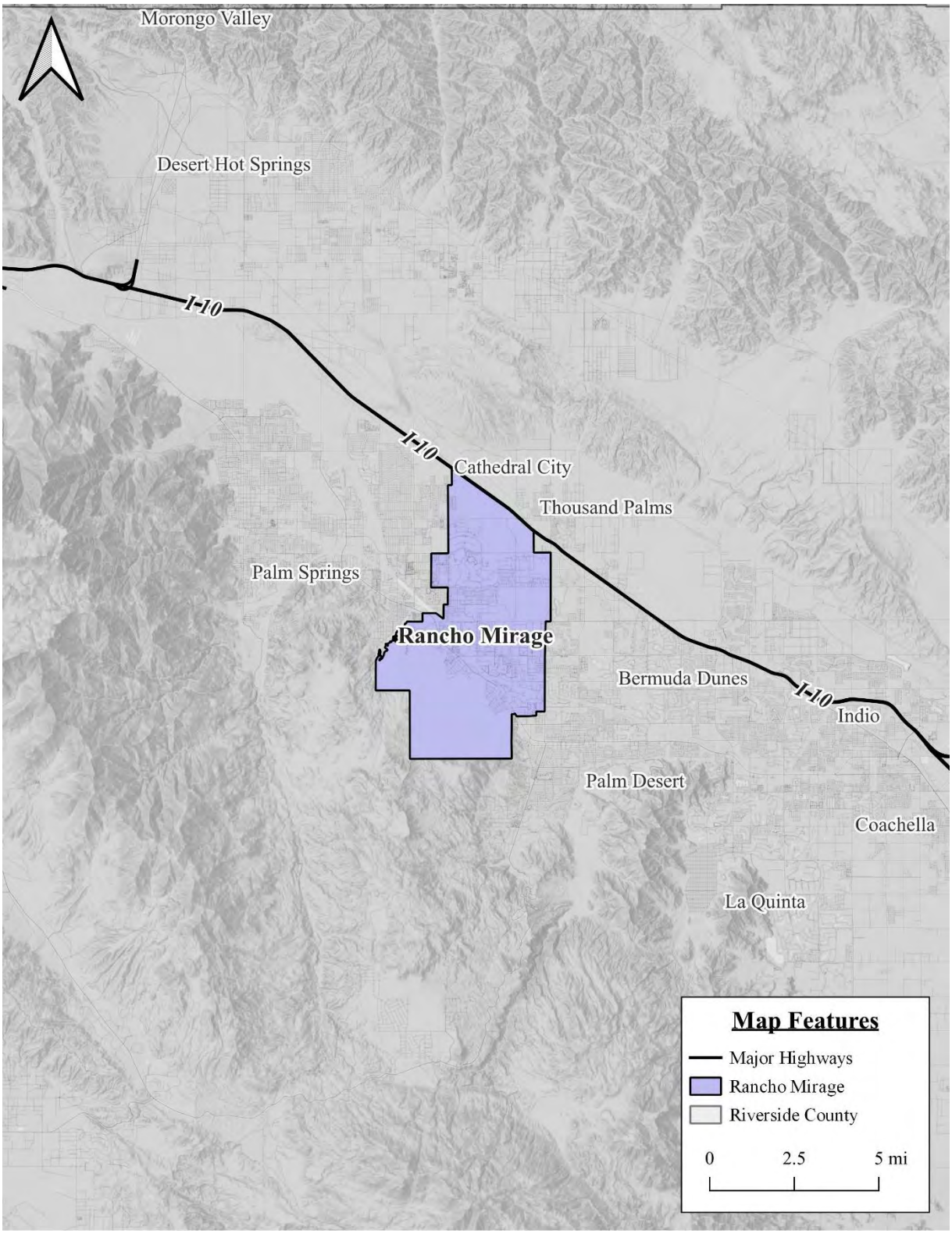


Exhibit 1 Regional Map

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

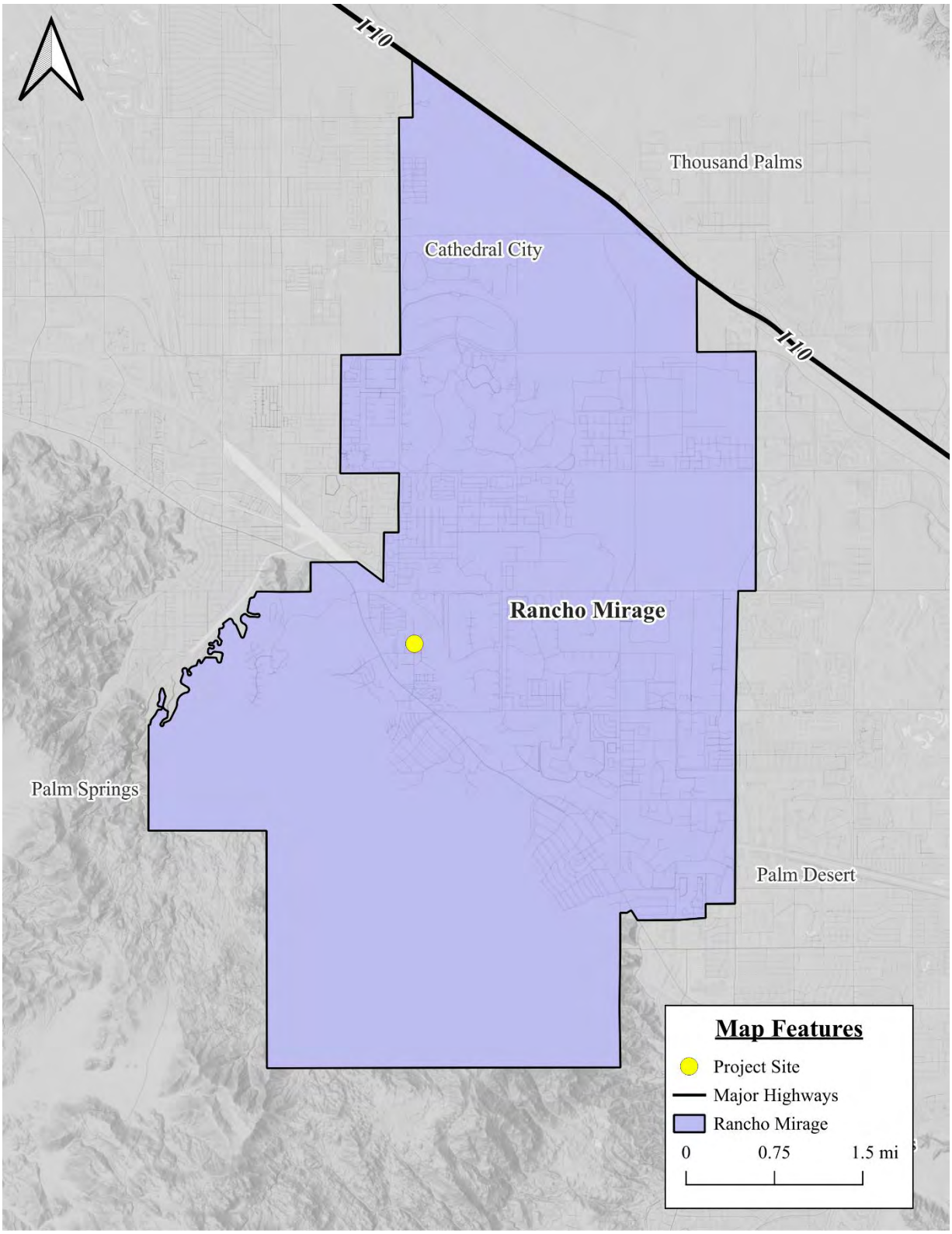


Exhibit 2 Citywide Map

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

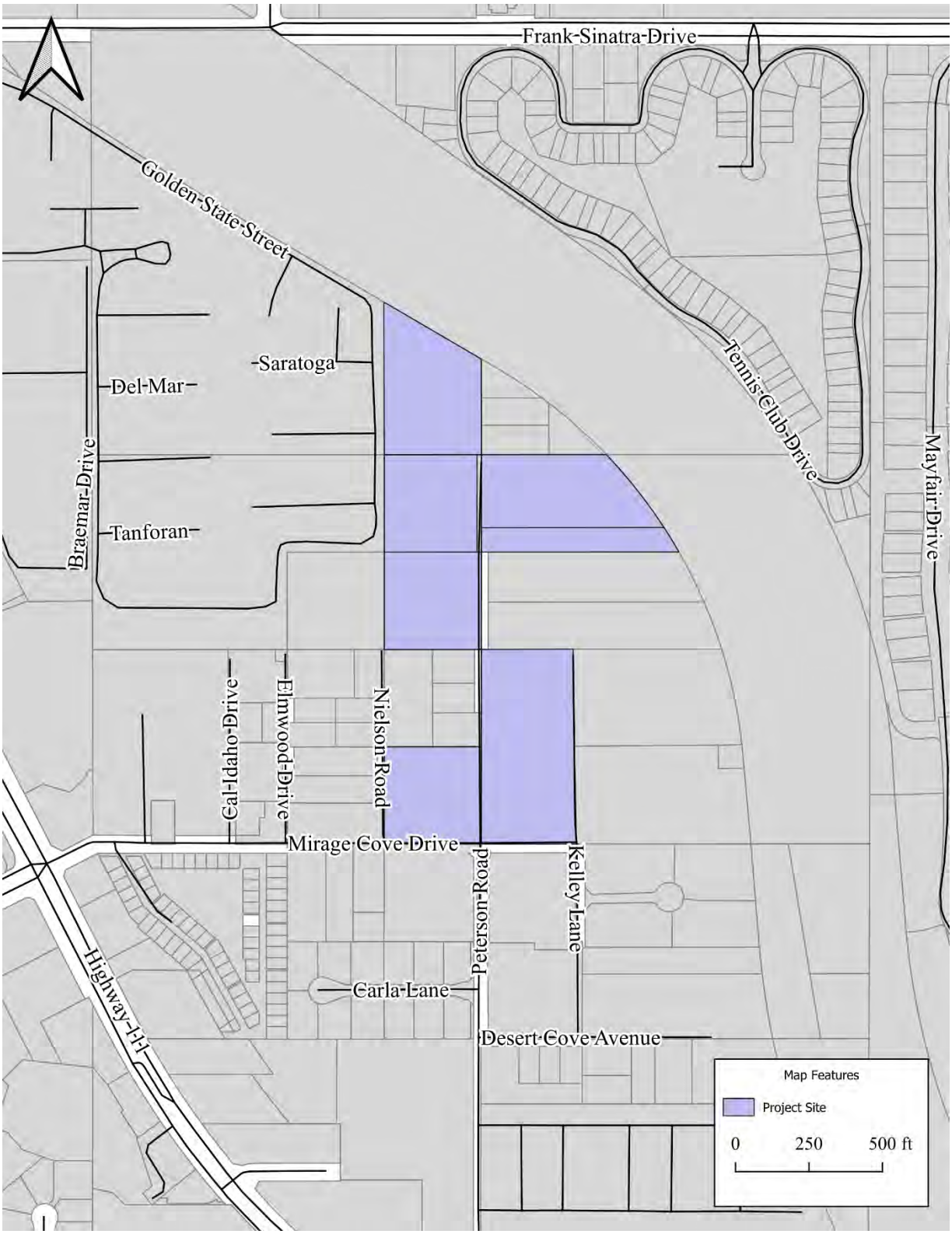


Exhibit 3 Local Map

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING



Exhibit 4 Aerial Photograph

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

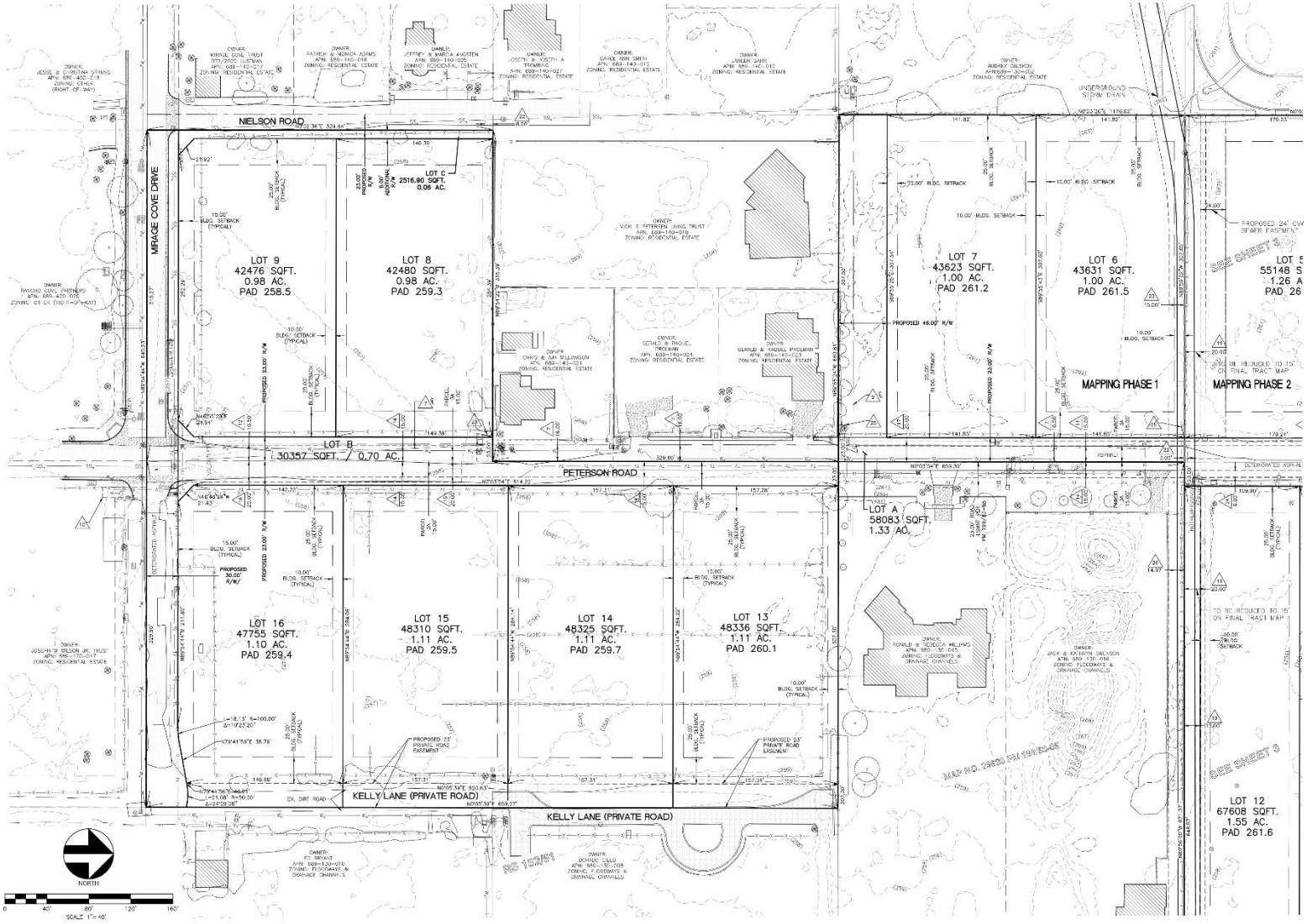


Exhibit 5a Site Plan

SOURCE: Fomotor Engineering. *Tract Map No. 68971*. November 21, 2024.

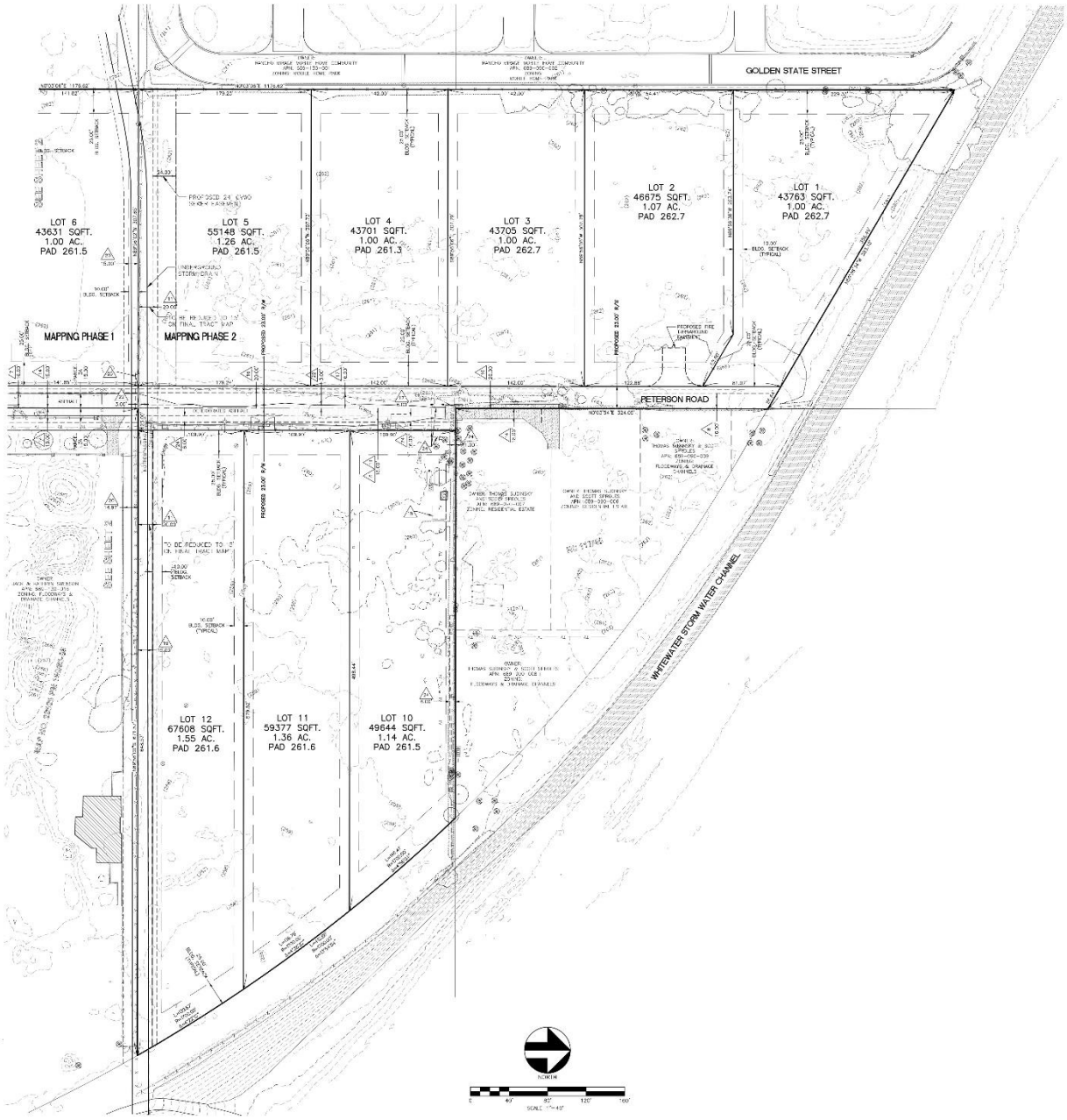


Exhibit 5b Site Plan

SOURCE: Fomotor Engineering. *Tract Map 38971*. November 21, 2024.

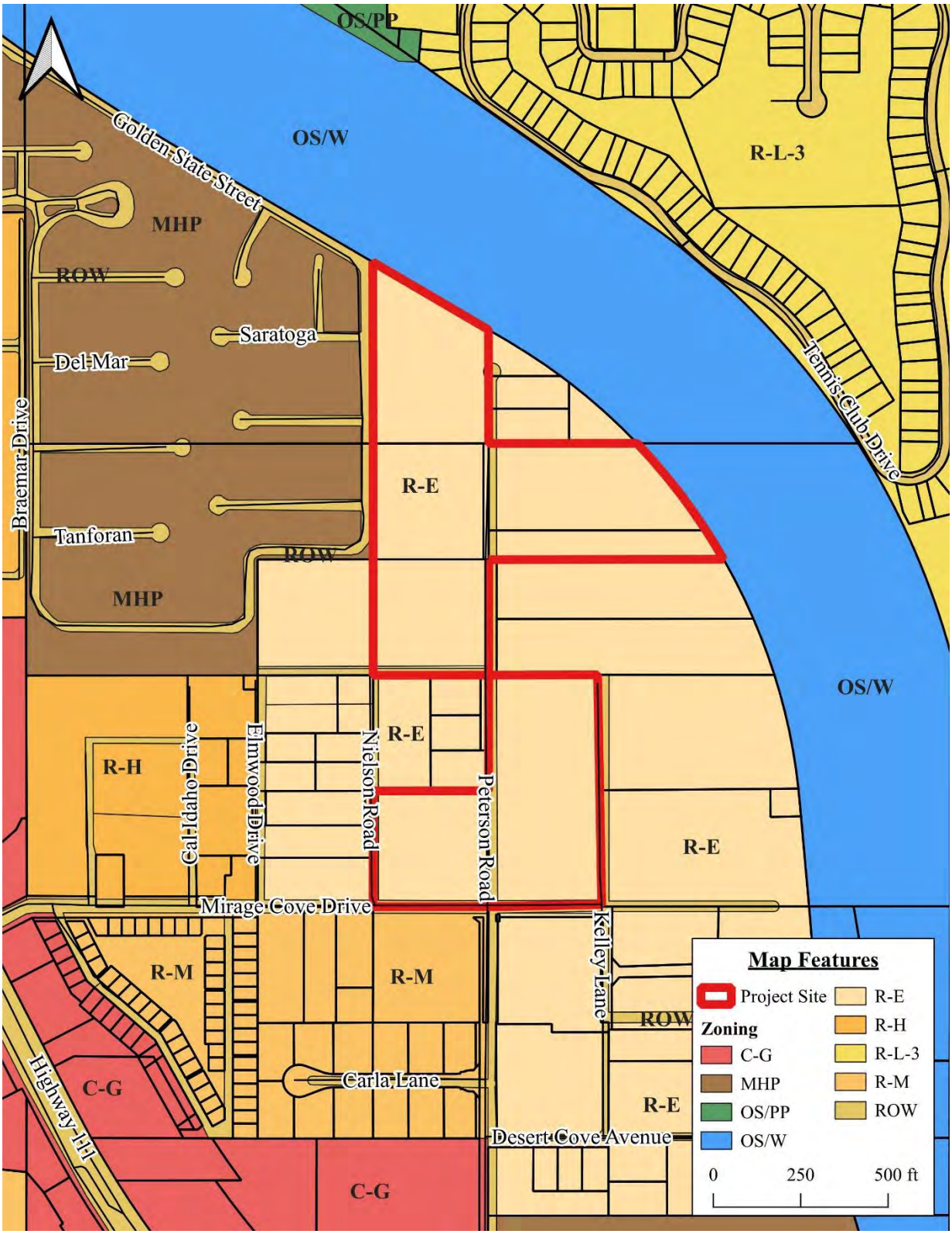


Exhibit 6 Zoning Designations

SOURCE: CITY OF RANCHO MIRAGE

CHAPTER 2: ENVIRONMENTAL ANALYSIS AND DETERMINATION

Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that would require mitigation as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forestry Resources	☐ Air Quality
☒ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☒ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☒ Mandatory Findings of Significance

Evaluation of Environmental Impacts:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.

    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify: a) the significance criteria or threshold, if any, used to evaluate each question; and b) the mitigation measure identified, if any, to reduce the impact to less than significance.

DETERMINATION: (To be completed by the Lead Agency) On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



7/3/2025

Pilar Fløtterud, Senior Planner — Date

City of Rancho Mirage

Environmental Checklist and Discussion:

The following checklist evaluates the proposed Project's potential adverse impacts. For those environmental topics for which a potential adverse impact may exist, a discussion of the existing site environment related to the topic is presented followed by an analysis of the Project's potential adverse impacts. When the project does not have any potential for adverse impacts for an environmental topic, the reasons why there are no potential adverse impacts are described.

1 - AESTHETICS

AESTHETICS -- Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

SOURCES:

1. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. Rancho Mirage, City of. *City of Rancho Mirage Municipal Code.* As amended 2023.

1.1 SETTING

The evaluation of aesthetics and aesthetic impacts is generally subjective, and it typically requires the identification of key visual features in the area and their importance. The characterization of aesthetic impacts involves establishing the existing visual characteristics including visual resources and scenic vistas that are unique to the area. Visual resources are determined by identifying existing landforms (e.g., topography and grading), views (e.g., scenic resources such as natural features or urban characteristics), and existing light and glare characteristics (e.g., nighttime illumination). Changes to the existing aesthetic environment associated with the proposed project's implementation are identified and *qualitatively* evaluated based on the proposed modifications to the existing setting and the viewers' sensitivity. The project-related impacts are then compared to the context of the existing setting, using the threshold criteria discussed above.

The natural setting of the Rancho Mirage area is critical to its overall visual character and provides scenic vistas for the community. The Santa Rosa Mountains and the foothills (including the Indio Hills), provide a natural, scenic backdrop to the Rancho Mirage community. The Santa Rosa Mountains are part of the Santa Rosa and San Jacinto Mountains National Monument. The base of the aforementioned mountains is located just over 7 miles to the southwest of the project site. The San Bernardino Mountains are located to the north and east of the City (approximately 16 miles).

1.2 Discussion of Impacts:

a) No Impact.

The City of Rancho Mirage is reviewing an application that would involve the subdivision of 16 lots within 8 parcels totaling 19.81 acres. Currently, the three southern parcels would subdivided into 8 lots - Lot 6, 7, 8, 9, 13, 14, 15, and 16. This would be phase 1 of the project. Phase 2 of the project involves the remaining 5 northern parcels which would be subdivided into 8 lots - Lots 1, 2, 3, 4, 5, 10, 11, and 12. The subject parcels are all vacant and undeveloped. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. The terrain in the project area is generally level, with ground elevations ranging approximately from 255 feet to 260 feet above mean sea level. The surface soil is composed of light olive gray fine sand. The project is located within what is considered to be the California Creosote Bush Scrub plant community though the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses. The Zoning designation that is applicable to the aforementioned parcels is *Residential Estate (R-E)*. No General Plan Amendment or Zone Change would be required for the proposed residential development.

The natural setting of the Rancho Mirage area is critical to its overall visual character and provides scenic vistas for the community. The Santa Rosa Mountains provide a natural, scenic backdrop to the Rancho Mirage community. The Santa Rosa Mountains are part of the Santa Rosa and San Jacinto Mountains National Monument. The base of the aforementioned mountains is located just over 10 miles to the west of the project site. The foothills of the Santas Rosa Mountains along with the Indio Hills extend into the southern portion of the City. The San Bernardino Mountains are located to the north and east of the City (approximately 16 miles). The proposed development would not obstruct any significant views of the aforementioned mountains of the existing or future homes located to the east of the development site. Once developed, views of the aforementioned mountains would continue to be visible from the public right-of-way. As a result, no impacts would occur.

b) No Impact.

According to the California Department of Transportation, none of the improved or unimproved roads located adjacent to the project site are designated as scenic highways. Highway 111, located approximately 1,500 feet to the west of the site, is considered to be an *Eligible State Scenic Highway*, though this roadway is not officially designated as such. According to the Rancho Mirage General Plan, Bob Hope Drive (located approximately 1.75 to the east of the site), is a *City-designated Scenic road*. In addition to the foregoing, the project property is currently absent of any historic buildings, structures or other former permanent improvements that would have any aesthetic value. The site's development would also facilitate the site's ongoing

maintenance and rehabilitation. Lastly, the project site does not contain any buildings listed in the State or National registrar. As a result, no impacts would occur.

c) No Impact.

There are no protected views in the vicinity of the project site (refer to Subsection A). In addition, the City does not have any zoning regulations or other regulations governing scenic quality other that the development standards for which the new residential units would conform to. As a result, no impacts would occur.

d) Less Than Significant Impact.

The nearest light sensitive receptors are the existing residential units located to the west and east of the project site. In addition, the properties located to the north, west, and east are zoned for residential development. The project's lighting would be required to comply with Chapter 17.18.050 of the Rancho Mirage Municipal Code. The proposed project's lighting must be designed so as to prevent emissions of glare or light beyond the property line. All exterior lighting at the project site would be conditioned to be Dark-Sky compliant, in order to reduce the amount of light emitted at the project site at night. This would keep the night skies in the City of Rancho Mirage visible to residents and visitors. Riverside County Ordinance Number 655 regulates light pollution in the County. Ordinance No. 655 restricts the use of certain light fixtures emitting into the night sky undesirable light rays which have a detrimental effect on astronomical observation and research. The project would be required to comply to these County's standards. Since the proposed project would be required to adhere to both the City's and County's light and glare requirements, the impacts would be less than significant.

1.3 Mitigation Measures:

None required.

2 - AGRICULTURE AND FORESTRY RESOURCES

AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of forest land, timberland, or timberland zoned Timberland Production?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

SOURCES:

1. California Department of Conservation, Division of Land Resource Protection, Farmland Mapping, and Monitoring Program. *California Important Farmland Finder*.
2. California Department of Conservation. *State of California Williamson Act Contract Land.*

2.1 SETTING

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) was established in 1982 to track changes in agricultural land use and to help preserve areas of Important Farmland. It divides the state's land into eight categories of land use designation based on soil quality and existing agriculture uses to produce maps and statistical data. These maps and data are used to help preserve productive farmland and to analyze impacts on farmland. Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance are all Important Farmland and are collectively referred to as Important Farmland in this analysis. The highest rated Important Farmland is Prime Farmland. The California Land Conservation Act of 1965, or the Williamson Act, allows a city or county government to preserve agricultural land or open space through contracts with landowners. Contracts last 10 years and are automatically renewed unless a notice of nonrenewal is issued.

According to the California Department of Conservation, the project site and the adjacent properties do not contain any areas of Farmland of Statewide Importance, and no agricultural

uses are located onsite or adjacent to the property. The project site and the surrounding parcels are indicated as *Urban and Built-Up Land*. The Whitewater Storm Channel is designated as *Other* Land.

2.2 Discussion of Impacts:

a) No Impact:

According to the California Department of Conservation, the project site and the adjacent properties do not contain any areas of Farmland of Statewide Importance, and no agricultural uses are located onsite or adjacent to the property. According to the California Farmland Mapping and Monitoring Program the proposed project is located in a portion of Rancho Mirage designated as *Urban and Built-Up Land*. The project site is not located in an area where the existing zoning promote agricultural uses or is otherwise classified as farmland. Therefore, the implementation of the proposed project would not involve the conversion of any prime farmland, unique farmland, or farmland of statewide importance to urban uses. As a result, no impacts would occur.

b) No Impact:

There are no agricultural uses located within the site that would be affected by the project's implementation. According to the California Department of Conservation Division of Land Resource Protection, the project site is not subject to a Williamson Act Contract. As a result, no impacts on existing Williamson Act Contracts would result from the proposed project's implementation.

c) No Impact:

There are no forest lands or timber lands located within or adjacent to the site. Furthermore, the site's existing zoning designation does not contemplate forest land or timber land uses. As a result, no impacts will occur.

d) No Impact:

No forest lands are located within the project site. The proposed use would be restricted to the site and would not affect any land under the jurisdiction of the Bureau of Land management (BLM). As a result, no loss or conversion of forest lands to urban uses would result from the proposed project's implementation.

e) No Impact:

The project would not involve the disruption or damage of the existing environment that would result in a loss of farmland to nonagricultural use or conversion of forest land to non-forest use because the project site does not contain any significant vegetation. As a result, no farmland conversion impacts would occur.

2.3 Mitigation Measures:

None required.

3 - AIR QUALITY

AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

SOURCES:

1. California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022. (Appendix A)
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. Rancho Mirage, City of. *City of Rancho Mirage Municipal Code.* As amended 2023.
4. South Coast Air Quality Management District. *2022 Air Quality Management Plan*. Adopted December 2, 2022.
5. South Coast Air Quality Management District. *Air Quality Analysis Handbook.* 1993.
6. Southern California Association of Governments. The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. *Adopted September 3, 2020.*
7. State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties, and the State — January 1, 2021-2023*. Sacramento, California, May 2023.

3.1 SETTING

According to Appendix G of the CEQA Guidelines, a project may be deemed to have a significant adverse impact on air quality if it results in any of the following:

- The proposed project would conflict with or obstruct implementation of the applicable air quality plan.
- The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- The proposed project would expose sensitive receptors to substantial pollutant concentrations.

The proposed project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Air quality impacts may occur during the construction or operation phase of a project, and may come from stationary (e.g., industrial processes, generators), mobile (e.g., automobiles, trucks), or area (e.g., water heaters) sources. The South Coast Air Quality Management District (SCAQMD) is the main regulatory authority in the region (Salton Sea Basin) with regard to air quality issues. In April 1993, the SCAQMD adopted a CEQA Air Quality Handbook that provides guidance for the CEQA analysis of potential air quality impacts

of new projects. The SCAQMD has established quantitative thresholds for short-term (construction) emissions and long-term (operational) emissions for the following criteria pollutants:

- *Ozone (O_3)* is a nearly colorless gas that irritates the lungs, and damages vegetation. Ozone is formed a by photochemical reaction (when nitrogen dioxide is broken down by sunlight).
- *Carbon Monoxide (CO)* is a colorless, odorless toxic gas that interferes with the transfer of oxygen to the brain and is produced by the incomplete combustion of carbon-containing fuels emitted as vehicle exhaust.
- *Nitrogen Oxide (NO_x)* is a yellowish-brown gas, which at high levels can cause breathing difficulties. NO_x is formed when nitric oxide (a pollutant from burning processes) combines with oxygen.
- *Sulfur Dioxide* (SO_2) is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Health effects include acute respiratory symptoms.
- *PM_{10} and $PM_{2.5}$* refers to particulate matter less than ten microns and two and one-half microns in diameter, respectively. Particulates of this size cause a greater health risk than larger-sized particles since fine particles can more easily cause irritation.
- *Reactive Organic Gasses (ROG)* refers to organic chemicals that, with the interaction of sunlight photochemical reactions may lead to the creation of “smog.”

Projects in the Salton Sea Air Basin (SSAB) generating construction-related emissions that exceed any of the following emissions thresholds are considered to be significant under CEQA:

- 75 pounds per day of reactive organic compounds;
- 100 pounds per day of nitrogen dioxide;
- 550 pounds per day of carbon monoxide;
- 150 pounds per day of PM_{10};
- 55 pounds per day of $PM_{2.5}$; or,
- 150 pounds per day of sulfur oxides.

A project would have a significant effect on air quality if any of the following operational emissions thresholds for criteria pollutants are exceeded:

- 55 pounds per day reactive organic compounds;
- 55 pounds per day of nitrogen dioxide;
- 550 pounds per day of carbon monoxide;
- 150 pounds per day of PM_{10};
- 55 pounds per day of $PM_{2.5}$; or,
- 150 pounds per day of sulfur oxides.

3.2 Discussion of Impacts:

a) No Impact:

Measures to improve regional air quality are outlined in the SCAQMD’s Air Quality Management Plan (AQMP). The most recent AQMP was adopted in 2022 and was jointly prepared with the California Air Resources Board (CARB) and the Southern California Association of Governments

(SCAG). The AQMP will help the SCAQMD maintain focus on the air quality impacts of major projects associated with goods movement, land use, energy efficiency, and other key areas of growth. Key elements of the 2022 AQMP include enhancements to existing programs to meet the 24-hour $PM_{2.5}$ Federal health standard and a proposed plan of action to reduce ground-level Ozone. The primary criteria for pollutants that remain non-attainment in the local area include $PM_{2.5}$ and Ozone. Specific criteria to determine a project's conformity with the AQMP is defined in Section 12.3 of the SCAQMD's CEQA Air Quality Handbook.

The proposed Project is consistent with the assumptions underlying the AQMP and the 2003 Coachella Valley PM10 State Implementation Plan and will not conflict with or obstruct implementation of the applicable air quality plan. Projects that are consistent with the projections of employment and/or population forecasts identified in the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) prepared by SCAG are considered consistent with the SCAQMD growth projections, since the RTP/SCS forms the basis of the land use and transportation control portions of the SCAQMD. According to the Demographics and Growth Forecast Technical Report Adopted on September 3, 2020 by SCAG, the City of Rancho Mirage's population is projected to increase from the year 2016 figure of 18,200 to 25,200 in the year 2045, an increase of 7,000. The proposed 16-unit project would potentially result in 31 new residents assuming an average household size of 1.95 persons per household derived from the 2023 United States Census Bureau for the City of Rancho Mirage. Therefore, the proposed project is not in conflict with the growth projections established for the City by SCAG. The project's construction emissions would be below the thresholds of significance established by the SCAQMD (the project's daily construction emissions are summarized in Table 2). In addition, the proposed project's long-term (operational) airborne emissions would be below levels that the SCAQMD considers to be a significant impact (refer to Table 3). As a result, no impacts would occur.

b) Less Than Significant Impact:

According to the SCAQMD, any project is significant if it triggers or exceeds the SCAQMD daily emissions threshold identified previously and noted at the bottom of Tables 2 and 3. The proposed project's construction and operation would not lead to a violation of the above-mentioned criteria. The analysis of daily construction and operational emissions was prepared utilizing the California Emissions Estimator Model (CalEEModV.2022.1.1.25). For air quality modeling purposes, a twelve-month period of construction for all construction phases was assumed.

Table 2 Estimated Daily Construction Emissions (lbs./day)

Construction Phase	ROG	NOx	CO	SO2	PM10	PM2.5
Maximum Daily Emissions	9.89	31.7	31.8	0.06	9.26	5.25
Daily Thresholds	75	100	550	150	150	55
Significant Impact?	No	No	No	No	No	No

California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022.1.1.25 (Used in Appendix A)

Long-term emissions refer to those air quality impacts that would occur once the proposed project has been constructed and is operational. These impacts would continue over the operational life of the project. The two main sources of operational emissions include mobile emissions and area emissions related to off-site electrical generation. The analysis of long-term operational impacts summarized in Table 3 also used the CalEEModV.2022.1.1.25 computer model. The analysis summarized in Table 3 indicates that the operational (long-term) emissions would be below the SCAQMD daily emissions thresholds.

Table 3 Estimated Operational Emissions in lbs./day

Emission Source	ROG	NOx	CO	SO2	PM10	PM2.5
Maximum Daily Emissions	1.43	0.87	7.76	0.02	1.37	0.36
Daily Thresholds	55	55	550	150	150	55
Significant Impact?	No	No	No	No	No	No

California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022.1.1.25 (Used in Appendix A)

The analysis presented in Tables 2 and 3 reflects projected emissions that are typically higher during the summer months and represent a worse-case scenario. As indicated in Tables 2 and 3, the impacts are considered to be less than significant. In addition, the SCAQMD Rule Book contains numerous regulations governing various activities undertaken within the district. Among these regulations is Rule 403.2 – Fugitive Dust Control for the South Coast Planning Area, which was adopted in 1996 for the purpose of controlling fugitive dust. Adherence to Rule 403.2 regulations is required for all projects undertaken within the district. Future construction truck drivers must also adhere to Title 13 - §2485 of the California Code of Regulations, which limits the idling of diesel-powered vehicles to less than five minutes. Adherence to the aforementioned standard condition would minimize odor impacts from diesel trucks. Adherence to Rule 403 Regulations and Title 13 - §2485 of the California Code of Regulations would further reduce the potential impacts. As a result, the impacts would be less than significant.

c) Less Than Significant Impact:

According to the SCAQMD, residences, schools, daycare centers, playgrounds, and medical facilities are considered sensitive receptor land uses. As indicated in the previous section (refer to Tables 2 and 3, the proposed residential development would not result in an exceedance of SCAQMD thresholds. As indicated in Table 4, the project is not anticipated to exceed construction local significant thresholds (LSTs) for particulates. For purposes of analysis, it was assumed that no more than 5-acres would be disturbed on any given construction day. Further analysis of the CalEEMod worksheets indicated that the primary source of construction PM emissions is fugitive dust. Adherence to additional mandatory Rule 403 regulations would reduce fugitive dust

emissions by approximately 50% to levels that are less than significant. Rule 403 requires that temporary dust covers be used on any piles of excavated or imported earth to reduce wind-blown dust. In addition, all clearing, earthmoving, or excavation activities must be discontinued during periods of high winds (i.e., greater than 15 mph), so as to prevent excessive amounts of fugitive dust.

Table 4 Local Significance Thresholds Exceedance SRA 30 for 5 Acres of Disturbance (site is 19.81 acres)

Emissions	Maximum Emissions (lbs./day)	Type	Allowable Emissions Threshold (lbs./day) and a Specified Distance from Receptor (in meters)				
			25	50	100	200	500
NO_x	**0.87**	Operation	**304**	340	425	547	875
NO_x	**31.7**	Construction	**304**	340	425	547	875
CO	**7.76**	Operation	**2,292**	3,237	5,331	10,178	31,115
CO	**31.8**	Construction	**1,480**	3,237	5,331	10,178	31,115
PM_{10}	**1.37**	Operation	**4**	11	16	27	60
PM_{10}	**9.26**	Construction	**14**	44	67	112	248
$PM_{2.5}$	**0.36**	Operation	**2**	3	5	9	31
$PM_{2.5}$	**5.25**	Construction	**8**	11	19	37	128

California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022.1.1.25 (Used in Appendix A)

The Coachella Valley is currently designated as a serious nonattainment area for PM10 (particulate matter with an aerodynamic diameter of 10 microns or less). The U.S. EPA-approved Coachella Valley PM_{10} State Implementation Plan is in place with an attainment strategy for meeting the PM_{10} standard. Some of the existing measures include the requirement of detailed dust control plans from builders that specify the use of more aggressive and frequent watering, soil stabilization, wind screens, and phased development to minimize fugitive dust. Appropriate air quality measures to prevent fugitive dust are required by the City's Fugitive Dust Control ordinance and plan implementation requirements, which are consistent with SCAQMD Rules 403 and 403.1 that apply to the Coachella Valley strategy for reducing fugitive dust emissions. Under the City's dust control regulations, a Local Air Quality Management Plan (LAQMP) must be prepared and approved prior to any earth-moving operations. Consistent with SCAQMD Rules 403 and 403.1, implementation of the Fugitive Dust Control Plan is required to occur under the supervision of an individual with training on Dust Control in the Coachella Valley. The plan would include methods to prevent sediment track-out onto public roads, prevent visible dust emissions from exceeding a 20-percent opacity, and prevent visible dust emissions from extending more than 100 feet (vertically or horizontally from the origin of a source) or crossing any property line.

The project's contractors must comply with other SCAQMD regulations governing equipment idling and emissions controls as well as mandatory SCAQMD regulations governing fugitive dust (Rule 403) and odors (Rule 1401). In addition, future truck drivers visiting the site during the project's construction must adhere to Title 13 - §2485 of the California Code of Regulations, which limits the idling of diesel-powered vehicles to less than five minutes. These regulations would reduce particulate emissions by as much as 50%. As a result, the impacts would be less than significant.

d) No Impact:

The SCAQMD has identified those land uses that are typically associated with odor complaints. These uses include activities involving livestock, rendering facilities, food processing plants, chemical plants, composting activities, refineries, landfills, and businesses involved in fiberglass molding. The proposed residential project would not result in the generation of any odors. In addition, construction truck drivers must adhere to Title 13 - §2485 of the California Code of Regulations, which limits the idling of diesel-powered vehicles to less than five minutes. Furthermore, the project's contractors must adhere to SCAQMD rules and regulations that govern fugitive dust during site preparation which would significantly reduce the generation of fugitive dust. As a result, no odor-related impacts would occur.

3.3 Mitigation Measures:

None required.

4 - BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

SOURCES:

1. Rancho Mirage, City of. City of Rancho Mirage 2017 General Plan Update. Adopted November 16, 2017.
2. Coachella Valley Association of Governments. Coachella Valley Multiple Species Habitat Conservation Plan.
3. *City of Rancho Mirage Municipal Code.* As amended. August 2016
4. RCA Associates, Inc. *General Biological Resources Assessment APN 689-090-003, 689-130-004, -005, -014, -017 & 689-140-022*. March 3, 2024.

4.1 SETTING

Sensitive biological resources include a variety of plant and animal species that are specialized and endemic to a particular habitat type. Due to loss of habitat, some of these species have been designated by either, or both, the federal and state government resource agencies as threatened or endangered. Species listed as threatened include those whose numbers have dropped to such low levels and/or whose populations are so isolated that the continuation of the species could be

jeopardized. Endangered species are those with such limited numbers or subject to such extreme circumstances that they are considered in imminent danger of extinction. Other government agencies and resource organizations also identify sensitive species, those that are naturally rare and that have been locally depleted and put at risk by human activities. While not in imminent danger of jeopardy or extinction, sensitive species are considered vulnerable and can become candidates for future listing as threatened or endangered.

The vegetation community present on site supports a disturbed desert scrub habitat encompassing mainly native plants and some non-native grasses. The site contains a few species of plants which include kelch grass (*Schismus barbatus*), creosote bush (*Larrea tridentata*), four winged saltbush (*Atriplex canescens*), Asian mustard (*Brassica tournefortii*), Nettle leaved goosefoot (*Chenopodiastrum murale*) and Brittlebush (*Encelia farinose*).

4.2 Discussion of Impacts:

a) Less Than Significant Impact With Mitigation:

Birds observed during the onsite surveys included common ravens (Corvus corax), house finch (Carpodacus mexicanus), house sparrow (Passer domesticus), Anna's hummingbird (Calypte anna), red-tailed hawk (Buteo jamaicensis), Northern mockingbird (Mimus polyglottos) and rock pigeon (Columba livia). No mammals were seen during the February 2024 survey. Although the Antelope Ground squirrel (Ammospermophilus leucurus) were not present during the field investigation we can assume they are in the area due to current conditions and population distributions. Other wildlife species that may occur on site include desert cottontails (Sylvilagus audubonii) and California ground squirrels (Otospermophilus beecheyi), and Merriam's kangaroo rats (Dipodomys merriami) may also occur on the site given their wide-spread distribution in the region. No reptiles were observed during the field investigation, however there were a number of reptile tracks along the property and we can assume that they are present in the area. Species that are expected to occur on site include the western whiptail lizard (Cnemidophorus tigris) and common side-blotched lizard (Uta stansburiana). No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations.

The following are the listed and special status species that have the ability to occur on the project site. It is not a comprehensive list of all the species in the quad. This information has been taken from the California Natural Diversity Database and is using the most current version.

Coachella Valley fringe-toed lizard: The site is located within the documented Coachella Valley fringed-toed lizard range, a state and federal threatened species, according to California Natural Diversity Database (CNDDB) (2024). The property supports minimal suitable habitat for the lizard based on the location of the site in a developed area of Rancho Mirage. No Coachella Valley fringed-toed lizard was observed anywhere within the property boundaries during the February 12, 2024 surveys. The species is not expected to move onto the site in the near future based on the absence of any recent observations in the immediate area, and the presence of busy roadways and developments in the immediate area which may act as barriers to migration.

Burrowing Owl: The site is located within documented burrowing owl habitat according to CNDDB (2024). No owls were seen on the property during the survey, and minimal suitable habitat was observed. Burrowing owls are not expected to occur on the site due to lack of suitable vegetation and burrows.

Le Conte's thrasher: Le Conte's thrashers have not been recently observed in the area according to CNDDB (2024). Thrashers are not expected to occur on the site due to lack of critical vegetation used by the species, such as catclaw acacia. Thrashers may be very infrequent in the area given the low population levels in the region as well as the lack of any recent sightings according to the CNDDB.

There were no instances of any federally or state endangered plant species during the field survey conducted on February 12, 2024. The site has been disturbed in the past and development has occurred around most of the neighboring properties. Although the site does contain minimal habitat for the Chapparal sand verbena (Abronia villosa var. aurita) and the Slender cottonhead (Nemacaulis denudata var. gracilis) which include sandy areas and desert scrub, the species were not observed during the February 2024 field survey.

Future development activities include the grading and removal of all vegetation from the 19.8-acre parcel; however, cumulative impacts to the general biological resources (plants and animals) in the surrounding area are expected to be negligible. This assumption is based on the habitat containing scarce vegetation of non-native species. As discussed above, the site does not support any burrowing owls due to the lack of suitable habitat and potential burrows. Joshua trees (a state candidate species) were not observed in the field investigations during February 2024 survey. The following mitigation measures should be considered:

- **Biological Resources Mitigation No. 1** Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.

  a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.

  b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.

- **Biological Resources Mitigation No. 2** A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.

The above mitigation measures would reduce the impacts to levels that are less than significant.

b) No Impact:

No drainage channels were observed within the site boundaries. As a result, no impacts are anticipated.

c) No Impact:

No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations. No riparian vegetation (e.g., cottonwoods, willows, etc.) exist on the site. No potential channels were observed on the property and it is the opinion of RCA Associates that no further surveys will be necessary. As a result, no impacts are anticipated.

d) No Impact:

The site's utility as a habitat and a migration corridor is constrained by the presence of an adjacent roadway and the development that is present in the neighboring areas. As a result, no impacts are anticipated.

e) No Impact:

Future development activities include the grading and removal of all vegetation from the 19.8-acre parcel; however, cumulative impacts to the general biological resources (plants and animals) in the surrounding area are expected to be negligible. This assumption is based on the habitat containing scarce vegetation of non-native species. As discussed above, the site does not support any desert tortoises or burrowing owls due to the lack of suitable habitat and potential burrows. Joshua trees (a state candidate species) were not observed in the field investigations during February 2024 survey. As a result, no impacts are anticipated.

f) Less than Significant Impact:

The Project occurs within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) plan area and is subject to provisions and policies of the CVMSHCP.

The proposed project's implementation would not be in conflict with the provisions of any other adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plans.

Although the site is located within the CVMSHCP boundary, the site is not located within a biological sensitive or any conservation areas. As a result, impacts are less than significant.

4.3 MITIGATION MEASURES:

The analysis of biological impacts determined that the following mitigation measures would be required to reduce the project's impacts to levels that would be less than significant.

Biological Resources Mitigation Measure No. 1. Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.

a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.

b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.

. ***Biological Resources Mitigation Measure No. 2.*** A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.

5 - CULTURAL RESOURCES

CULTURAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

SOURCES:

1. Southern California Association of Governments. The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. *Adopted September 3, 2020.*
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. U. S. Department of the Interior, National Park Service. National Register of Historic Places. http://nrhp.focus.nps.gov. 2023.
4. CRM TECH. 16 Lot Subdivision Project on Peterson Road. March 25, 2024.

5.1 SETTING

Historic structures and sites are defined by local, State, and Federal criteria. A site or structure may be historically significant if it is locally protected through a General Plan or historic preservation ordinance. In addition, a site or structure may be historically significant according to State or Federal criteria even if the locality does not recognize such significance. To be considered eligible for the National Register, a property's significance may be determined if the property is associated with events, activities, or developments that were important in the past, with the lives of people who were important in the past, or represents significant architectural, landscape, or engineering elements. Specific criteria include the following:

- Districts, sites, buildings, structures, and objects that are associated with the lives of significant persons in or past;
- Districts, sites, buildings, structures, and objects that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- Districts, sites, buildings, structures, and objects that have yielded or may be likely to yield, information important in history or prehistory.

Ordinarily, properties that have achieved significance within the past 50 years are not considered eligible for the National Register. However, such properties *would qualify* if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance;

- Districts, sites, buildings, structures, and objects that are associated with events that have made a significant contribution to the broad patterns of our history;
- A building or structure removed from its original location that is significant for architectural value, or which is the surviving structure is associated with a historic person or event;
- A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life;
- A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events;
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or,
- A property achieving significance within the past 50 years if it is of exceptional importance.

5.2 DISCUSSION OF IMPACTS:

a) No Impact:

According to Eastern Information Center (EIC) records, the project area had been surveyed for cultural resources once prior to this study (RI-08506 in Figure 5; Sander 2010). No cultural resources have been recorded on or adjacent to the property, however. Within the one-mile scope of the records search, EIC records identified a total of 30 previous studies completed on various tracts of land and linear features between 1979 and 2016 (Figure 5). As a result of these and other similar studies in the vicinity, one historic-period site and one prehistoric-period site were previously recorded within the scope of the records search but outside the current project area. The historic-period site (33-005513) was recorded as the Peterson Ranch, a single wood frame house ca. 1930s (Wagner 1982). The prehistoric-period site (33-000628/CA-RIV-628T) consists of a trail segment and several stone cairns (Banks 1979; Parr and Arkush 1988; Bissell 2000). These previously recorded cultural resources were found more than a quarter mile from the project location. Since the project's implementation would not impact any Federal, State, or locally designated historic resources, no impacts would occur.

b) Less Than Significant Impact:

On January 9, 2024, CRM TECH archaeologist Nina Gallardo completed the historical/ archaeological resources records search for this study at the Eastern Information Center (EIC) of the California Historical Resources Information System. Located on the campus of the University of California, Riverside, the EIC is the official cultural resource records repository for the County of Riverside. The purpose of the records search was to compile a complete inventory of previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project location. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Historic Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

Historical background research for this study was conducted by CRM TECH Archaeologist Frank Raslich. In addition to published literature in local and regional history, sources consulted during the research included U.S. General Land Office (GLO) land survey plat maps dated 1856, United States Geological Survey (USGS) topographic maps dated 1904-1988, and aerial/satellite photographs taken in 1959-2023. The historical maps are available at the websites of the U.S. Bureau of Land Management and the USGS, and the aerial/satellite photographs are available at the website of Nationwide Environmental Title Research (NETR) Online and through the Google Earth software.

Historical sources consulted for this study indicate that the entire project area was unsettled and undeveloped until the mid-20th century (Figures 6-9 of Appendix C – Cultural Study). Between the 1850s and the 1930s, no humanmade features of any kind were noted within or adjacent to the project area despite its location near the Southern Pacific Railroad (built in the 1870s), U.S. Highway 60/70/99 (built prior to the 1920s), and two other major transportation arteries located approximately two miles to the north (Figures 6- 8 of Appendix C – Cultural Study). By the 1940s, Rio del Sol Road, the forerunner of present-day Bob Hope Drive, had been completed near the project vicinity along with several date gardens and ranches and a structure was present in the southern part of the project area (Figure 9 of Appendix C – Cultural Study). By 1957, roads and housing appeared around and within the project area. To the south of the project location, Gerald Ford Drive was first laid out between 1979 and 1984 and subsequently became a paved road by 1996, which ushered in a period of rapid urban growth in the surrounding area. The residential neighborhoods to the north and the south of the project location and the commercial properties to the west were all developed since then. The project area was not involved in any of these nearby developments. The structures in the southern part of the project area appears to have been removed after 2005 but before 2009. The rest of the study area, however, has remained undeveloped and largely unused to the present time.

The field survey of the project area produced completely negative results for any potential “historical resources,” and no buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered within the project boundaries. The entirety of the project area has been disturbed in the past, with all native vegetation being removed. Previous modern development and demolition have impacted the ground surface. Modern debris is comprised of milled lumber fragments, PVC pipe, chain fencing, broken glass bottle fragments, a few steel cans, and paper and building material refuse. No evidence of the structures previously located in the southern portion of the project area were observed. There are residential developments, a paved road, fencing along the Whitewater drainage, and utility poles, adjacent to the project area, but all of these items are modern in origin and, therefore, none of them are of any historical/archaeological interest.

On December 21, 2023, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission’s Sacred Lands File. In the meantime, CRM TECH also contacted the nearby Agua Caliente Band of Cahuilla Indians (ACBCI) for additional information on potential Native American cultural resources in the project vicinity and to arrange for tribal participation in the upcoming archaeological field survey.

On January 19, 2024, CRM TECH archaeologists Michael D. Richards and Malika Mobley carried out the field survey of the project area with the assistance of ACBCI Cultural Resources Analyst Claritsa Duarte from the Tribal Historic Preservation Office. The survey was conducted at an intensive level by walking a series of parallel north-south transects at 15-meter (approximately

50- foot) intervals. In this way, the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older). Ground visibility was fair (~50 percent) in areas where there were low-lying grasses but excellent (~90 percent) where there was little to no vegetation.

In response to CRM TECH's inquiry, the NAHC reported in a letter dated January 18, 2024, that the Sacred Lands File identified no Native American cultural resources in the project vicinity but recommended contacting local Native American groups for further information. For that purpose, the NAHC provided a list of potential contacts in the region. The NAHC's reply is attached to this report in Appendix 2 of Appendix C – Cultural Study for reference by the City of Rancho Mirage in future government-to government consultations, if necessary. As mentioned above, the ACBCI, which is the nearest tribe to the project location, participated in the archaeological field survey for this study on January 19, 2024. In a letter dated December 26, 2023, Xitlaly Madrigal, Cultural Resources Analyst with the ACBCI Tribal Historic Preservation Office, identified the project location as a part of the tribe's Traditional Use Area. Therefore, the ACBCI requested copies of all cultural resources documentation generated for this project for review by the Tribal Historic Preservation Office as well as the presence of an ACBCI Cultural Resource Monitor (see App. 2 of Appendix C – Cultural Study). The applicant would be required to follow the Tribal Cultural Mitigation Measures No. 1, 2, and 3. As a result, the impacts would be less than significant.

c) Less Than Significant Impact:

There are no dedicated cemeteries located within or in the vicinity of the project site. The proposed project would be restricted to the project site and therefore would not affect any dedicated cemeteries in the vicinity. Notwithstanding, the following mitigation is mandated by the California Code of Regulations (CCR) Section 15064.5(b)(4):

> "A lead agency shall identify potentially feasible measures to mitigate significant adverse changes in the significance of an historical resource. The lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures."

Additionally, Section 5097.98 of the Public Resources Code states:

> "In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with (b) Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. The coroner shall make his or her determination within two working days from the time the person responsible for the excavation, or his or her authorized representative, notifies the coroner of the discovery or recognition of the human remains. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission."

Adherence to the standard condition would ensure potential impacts remain at levels that are less than significant.

5.3 MITIGATION MEASURES:

None Required. The applicant would be required to follow Tribal Cultural Resources Mitigation Measure No. 1, 2, and 3.

6 - ENERGY

ENERGY – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

SOURCES:

1. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
2. SCAQMD. SCAQMD Air Quality Handbook. 1993.
3. California Air Resources Board and the Southern California Air Quality Management District. California Emissions Estimator Model (CalEEModV.2022.1.1.25) (Appendix A).

6.1 SETTING

Southern California Edison (SCE) would provide electricity to the project site. Natural gas service is provided by the Southern California Gas Company. Currently, the existing site is vacant and does not use electricity or natural gas. Electricity and natural gas are the primary sources of energy in the City of Rancho Mirage. Electricity is provided primarily by Southern California Edison (SCE) and Imperial Irrigation District (IID) provides services for everything north of Gerald Ford Drive and east of Bob Hope Drive in the City of Rancho Mirage.

The Rancho Mirage City Council started the Rancho Mirage Energy Authority (RMEA) for the purpose of helping to reduce the community's IID electricity bills. Pursuant to CCA law, RMEA is an all-new, locally-run, not-for-profit power program created by the City of Rancho Mirage. RMEA purchases power directly from power providers, pays consultants for compliance functions, and sets electricity rates based on costs. The RMEA's power is delivered through SCE poles and wires. SCE is still the utility and would continue to bill and collect from customers but using RMEA's lower electricity rates would allow businesses and residents to save 5 percent. SCE facilities include 12 kV transmission lines for local distribution. High voltage lines for more distant transmission range up to 115 kV and 230 kV. Substations step down voltage for local distribution and use. Three substations serve the City of Rancho Mirage: one on Highway 111 east of Thunderbird Cove, one on Clancy Lane at Monterey Avenue, and one on Plumley Road south of 35th Avenue.

6.2 DISCUSSION OF IMPACTS:

a) Less than Significant Impact:

During construction, the proposed project would consume energy related to the use of fuels used to power construction vehicles and other equipment that would be used during site clearing, grading, and construction. Fuel use associated with construction vehicle trips generated by the proposed project was also estimated; trips include construction worker trips, haul truck trips for

material transport, and vendor trips for construction material deliveries. Energy consumed during construction would be temporary in nature and would not present a significant demand on energy resources. The proposed project would be constructed pursuant to the 2022 energy standards of Title 24. Construction equipment greater than 150 horsepower (hp), is also required to comply with the Environmental Protection Agency (EPA)/California Air Resources Board (CARB) Tier 3 emissions standards and shall ensure that all construction equipment is tuned and maintained in accordance with the manufacturer's specifications. For engines from 175 to less than 750 hp, the Tier 4 Final regulations took effect on January 1, 2014. For engines from 49 to less than 75 hp, it took effect on January 1, 2013. Finally, for engines from 75 to less than 175 hp, the Tier 4 regulations took effect on January 1, 2015. In addition, the project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Therefore, no significant impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction are anticipated and no mitigation measures are required.

The increased demand is expected to be sufficiently served by the existing Southern California Edison (SCE) facilities. As shown in Table 5, the proposed project is anticipated to consume 409.41 kWh daily. The proposed project is located within the service area of the Southern California Gas Company. The project site currently has no demand for natural gas. Therefore, the development of the proposed project would create a permanent increase in the demand for natural gas. As shown in Table 5, the proposed project is anticipated to consume 1,559.0 kBTU of natural gas on a daily basis.

Table 5 Proposed Project's Energy Consumption

Energy Type	Consumption Rate	Annual Energy Consumption	Daily Energy Consumption
Electrical Consumption	9,339.25 kWh/unit/year	149,428 kWh/year	409.4 kWh/Day
Natural Gas Consumption	35,564.3 kBTU/unit/year	569,029 kBTU/year	1,559.0 kBTU/Day

California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022.1.1.25 (Used in Appendix A)

According to the CalEEMod air quality emissions model, the 16 units would consume 158,767 kWh of electricity on an annual basis. According to the same model, the 16 units would consume 569,029 kBTUs on an annual basis. The proposed project's energy consumption would be related to energy that would be used for lighting and other household activities. Lighting would be required to follow the City's Outdoor Lighting Policy, which includes the use of energy efficient lighting. For these reasons, the project would not result in the wasteful, inefficient, or unnecessary use of energy. The project applicant would be required to work with the local electrical utility company to identify existing and future strategies that would be effective in reducing energy consumption. As a result, the impact would be less than significant.

b) Less than significant impact:

The State Building Standards Commission adopted updates to the California Green Building Standards Code (Code) which became effective on January 1, 2023. The California Code of Regulations (CCR) Title 24, Part 11: California Green Building Standards (Title 24) became effective to aid efforts to reduce GHG emissions associated with energy consumption. Title 24 now requires that new buildings reduce water consumption, employ building commissioning to increase building system efficiencies, divert construction waste from landfills, and install low pollutant-emitting finish materials. The proposed project as well as any future development within the remainder of the project site would be required to conform to all pertinent energy conservation requirements. The proposed project would be required to comply with all pertinent Title 24 requirements along with other Low Impact Development (LID) requirements.

The project would provide for, and promote, energy efficiencies required under other applicable Federal and State of California standards and regulations, and in doing so, would meet or exceed all California Building Standards Code Title 24 standards. Moreover, energy consumed by the project's operation is calculated to be comparable to, or less than, energy consumed by other single family homes of similar scale and intensity that are constructed and operating in California. On this basis, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy. Further, the project would not cause or result in the need for additional energy producing facilities or energy delivery systems. As a result, the potential impacts would be less than significant.

6.3 Mitigation Measures:

None required.

7 - GEOLOGY AND SOILS

GEOLOGY AND SOILS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

SOURCES:

1. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
2. UC Davis. *SoilWeb.* Website accessed June 11, 2024.
3. United States Department of Agriculture. Natural Resources Conservation Service. Website accessed June 11, 2024.
4. Sladden Engineering. Geotechnical Update. June 7, 2024. Geotechnical Investigation Report. October 19, 2010.

7.1 SETTING

The City of Rancho Mirage is located in a seismically active region. Earthquakes from several active and potentially active faults in the Southern California region could affect the proposed

project site. In 1972, the Alquist-Priolo Earthquake Zoning Act was passed in response to the damage sustained in the 1971 San Fernando Earthquake. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The closest active fault to the project site is at the San Andreas Fault, approximately 3.6 miles northeast. Therefore, due to the distance of the fault zone, it can be concluded that the potential fault-rupture risk is low. Surface ruptures are visible instances of horizontal or vertical displacement, or a combination of the two. The amount of ground shaking depends on the intensity of the earthquake, the duration of shaking, soil conditions, type of building, and distance from epicenter or fault.

The potential impacts from fault rupture and ground shaking are considered no greater for the project site than for the surrounding areas given the distance between the site and the fault trace. However, the deep groundwater in Rancho Mirage does not allow the saturation of the sediments; therefore, the potential for liquefaction to occur at the project site is less than significant. Windblown sand and other recently deposited sediments are typically loose and, therefore, potentially subject to seismically induced settlement.

7.2 Discussion of Impacts:

a) Less Than Significant Impact:

The City of Rancho Mirage is located in a seismically active region. Earthquakes from several active and potentially active faults in the Southern California region could affect the proposed project site. In 1972, the Alquist-Priolo Earthquake Zoning Act was passed in response to the damage sustained in the 1971 San Fernando Earthquake. The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. closest active fault to the project site is at the San Andreas Fault, approximately 3.5 miles northeast. Therefore, due to the distance of the fault zone, it can be concluded that the potential fault-rupture risk is low. Surface ruptures are visible instances of horizontal or vertical displacement, or a combination of the two. The amount of ground shaking depends on the intensity of the earthquake, the duration of shaking, soil conditions, type of building, and distance from epicenter or fault. The potential impacts from fault rupture and ground shaking are considered no greater for the project site than for the surrounding areas given the distance between the site and the fault trace. However, the deep groundwater in Rancho Mirage does not allow the saturation of the sediments; therefore, the potential for liquefaction to occur at the project site is less than significant. Windblown sand and other recently deposited sediments are typically loose and, therefore, potentially subject to seismically induced settlement.

According to the City's General Plan, the project area has a moderate susceptibility to seismically induced settlement. Strong seismic shaking, the 2017 General Plan states, can cause densification or compaction of soils resulting in local or regional settlement of the ground surface, which can cause damage to foundations and structures. To ensure the safety of the project against seismically induced hazards, the project site shall adhere to the standard design requirements stated in the most recent California Building Code (CBC), and the City's building standards. Overall, impacts from seismically induced ground failure such as liquefaction and settlement are anticipated to be less than significant at the project site. As a result, the potential impacts regarding liquefaction and landslides are less than significant.

b) Less Than Significant Impact:

The University of California, Davis SoilWeb database was consulted to determine the nature of the soils that underlie the project site. According to the University of California, Davis SoilWeb database, the property is underlain by Coachella fine sand composed of Coachella, Myoma, Gilman, and Indio soils associations with 0 to 2 percent slopes. The proposed project's contractors would be required to adhere to specific requirements that govern wind and water erosion during site preparation and construction activities. Following development, the project site would be paved and landscaped, which would minimize soil erosion. The project's construction would not result in soil erosion with adherence to those development requirements that restrict storm water runoff (and the resulting erosion) and require soil stabilization. In addition, stormwater discharges from construction activities that disturb one or more acres, or smaller sites disturbing less than one acre that are part of a common plan of development or sale, are regulated under the National Pollutant Discharge Elimination System (NPDES) stormwater permitting program.

Prior to initiating construction, contractors must obtain coverage under an NPDES permit, which is administered by the State. In order to obtain an NPDES permit, the project Applicant must prepare a Stormwater Pollution Prevention Plan (SWPPP). Riverside County has identified sample construction Best Management Practices (BMPs) that may be included in the mandatory SWPPP. The use of these construction BMPs identified in the mandatory SWPPP would prevent soil erosion and the discharge of sediment into the local storm drains during the project's construction phase. As a result, the impacts would be less than significant.

c) Less Than Significant Impact:

The proposed project's construction would not result in soil erosion since the project's contractors must implement the construction BMPs identified in the mandatory SWPPP. The BMPs would minimize soil erosion and the discharge of sediment off-site. Additionally, the project site is not located within an area that could be subject to landslides or liquefaction. The soils that underlie the project site possess a low potential for shrinking and swelling. Soils that exhibit certain shrink swell characteristics become sticky when wet and expand according to the moisture content present at the time. Since the soils have a low shrink-swell potential, lateral spreading resulting from an influx of groundwater is slim. Moreover, the project will not result in the direct extraction of groundwater. As a result, the potential impacts would be less than significant.

d) Less Than Significant Impact:

The University of California, Davis SoilWeb database was consulted to determine the nature of the soils that underlie the project site. According to the University of California, Davis SoilWeb database, the property is underlain by Coachella fine sand composed of Coachella, Myoma, Gilman, and Indio soils associations with 0 to 2 percent slopes. According to the U.S. Department of Agriculture, these soils are acceptable for residential development. The applicant is required to adhere to all requirements detailed by the USDA. As a result, the potential impacts would be less than significant.

e) Less Than Significant Impact:

The proposed project would be required to connect to and utilize the sanitary sewer system. No

septic tanks systems would be used. As a result, the impacts would be less than significant.

f) Less Than Significant Impact:

According to Figure 4.9.3, Paleontological Sensitivity, in the Riverside County General Plan, the property is recognized for having low potential for Paleontological Sensitivity. Areas recognized for having a “low” potential have a reduced likelihood of containing significant non-renewable paleontological resources, including vertebrate or significant invertebrate fossils. Moreover, the site is not recognized as a unique paleontological or a unique geologic feature. Additionally, the project property lies in an urbanized context within the City, surrounded by residential uses. No known paleontological sites are found within the project site. The potential for uncovering any significant resources during construction activities is unlikely, since the site has already been cleared, graded, and disturbed from previous grading activities. Therefore, less than significant impacts are anticipated.

7.3 Mitigation Measures:

None required.

8 – GREENHOUSE GAS EMISSIONS

GREENHOUSE EMISSIONS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

SOURCES:

1. California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022. (Appendix A)
2. South Coast Air Quality Management District. *2022 Air Quality Management Plan*. Adopted December 2, 2022.
3. South Coast Air Quality Management District. *Air Quality Analysis Handbook.* 1993.
4. Southern California Association of Governments. The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. *Adopted September 3, 2020.*
5. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
6. Rancho Mirage, City of. 2012 Sustainability Plan: Leadership in Energy Efficiency. 2013.

8.1 SETTING

Examples of greenhouse gasses (GHG) that are produced both by natural and industrial processes include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). The accumulation of GHG in the atmosphere regulates the earth's temperature. Without these natural GHG, the Earth's surface would be about 61°F cooler. However, emissions from fossil fuel combustion have elevated the concentrations of GHG in the atmosphere to above natural levels. These man-made GHG will have the effect of warming atmospheric temperatures with the attendant impacts of changes in the global climate, increased sea levels, and changes to the worldwide biome. The major GHG that influences global warming are described below.

- *Water Vapor.* Water vapor is the most abundant GHG present in the atmosphere. While water vapor is not considered a pollutant, while it remains in the atmosphere it maintains a climate necessary for life. Changes in the atmospheric concentration of water vapor are directly related to the warming of the atmosphere rather than a direct result of industrialization. As the temperature of the atmosphere rises, more water is evaporated from ground storage (rivers, oceans, reservoirs, soil). Because the air is warmer, the relative humidity can be higher (in essence, the air is able to “hold” more water when it is warmer), leading to more water vapor in the atmosphere. As a GHG, the higher concentration of water vapor is then able to absorb more thermal indirect energy radiated from the Earth, thus further warming the atmosphere. When water vapor increases in the atmosphere, more of it would eventually also condense into clouds, which are more able to reflect incoming solar radiation. This would allow less energy to reach the Earth’s surface thereby affecting surface temperatures.
- *Carbon Dioxide (CO_2).* The natural production and absorption of CO_2 is achieved through the terrestrial biosphere and the ocean. Manmade sources of CO_2 include the burning coal, oil, natural gas, and wood. Since the industrial revolution began in the mid-1700’s, these activities have increased the atmospheric concentrations of CO_2. Prior to the industrial revolution, concentrations were fairly stable at 280 parts per million (ppm). The International Panel on Climate Change (IPCC Fifth Assessment Report, 2014) Emissions

of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total GHG emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period 2000 to 2010.

- *Methane (CH_4).* CH_4 is an extremely effective absorber of radiation, although its atmospheric concentration is less than that of CO_2. Methane's lifetime in the atmosphere is brief (10 to 12 years), compared to some other GHGs (such as CO_2, N_2O, and Chlorofluorocarbons (CFCs). CH_4 has both natural and anthropogenic sources. It is released as part of the biological processes in low oxygen environments, such as in swamplands or in rice production (at the roots of the plants). Over the last 50 years, human activities such as growing rice, raising cattle, using natural gas, and mining coal have added to the atmospheric concentration of methane. Other human-related sources of methane production include fossil-fuel combustion and biomass burning.
- *Nitrous Oxide (N_2O).* Concentrations of N_2O also began to increase at the beginning of the industrial revolution. In 1998, the global concentration of this GHG was documented at 314 parts per billion (ppb). N_2O is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is also commonly used as an aerosol spray propellant.
- *Chlorofluorocarbons (CFC).* CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane (C_2H_6) with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the Earth's surface). CFCs have no natural source but were first synthesized in 1928. It was used for refrigerants, aerosol propellants, and cleaning solvents. Due to the discovery that they are able to destroy stratospheric ozone, a global effort to halt their production was undertaken and in 1989 the European Community agreed to ban CFCs by 2000 and subsequent treaties banned CFCs worldwide by 2010. This effort was extremely successful, and the levels of the major CFCs are now remaining level or declining. However, their long atmospheric lifetimes mean that some of the CFCs would remain in the atmosphere for over 100 years.
- *Hydrofluorocarbons (HFC).* HFCs are synthetic man-made chemicals that are used as a substitute for CFCs. Out of all the GHGs, they are one of three groups with the highest global warming potential. The HFCs with the largest measured atmospheric abundances are (in order), HFC-23 (CHF_3), HFC-134a (CF_3CH_2F), and HFC-152a (CH_3CHF_2). Prior to 1990, the only significant emissions were HFC-23. HFC-134a use is increasing due to its use as a refrigerant. Concentrations of HFC-23 and HFC-134a in the atmosphere are now about 10 parts per trillion (ppt) each. Concentrations of HFC-152a are about 1 ppt. HFCs are manmade and used for applications such as automobile air conditioners and refrigerants.
- *Perfluorocarbons (PFC).* PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. Because of this, PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane (CF_4) and hexafluoroethane (C_2F_6). Concentrations of CF_4 in the atmosphere are over 70 ppt. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing.

- *Sulfur Hexafluoride (SF_6).* SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 has the highest global warming potential of any gas evaluated; 23,900 times that of CO_2. Concentrations in the 1990s where about 4 ppt. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

The SCAQMD mass emissions threshold is 3,000 metric tons of carbon dioxide equivalent per year (MTCO2E/yr). Carbon dioxide equivalent, or CO2E, is a term that is used for describing different greenhouses gases in a common and collective unit.

8.2 Discussion of Impacts:

a) Less Than Significant Impact:

The State of California requires CEQA documents to do an evaluation of greenhouse gas (GHG) emissions or gases that trap heat in the atmosphere. GHG are emitted by both natural processes and human activities. Examples of GHG that are produced both by natural and industrial processes include carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). Carbon dioxide equivalent, or *CO2E*, is a term that is used for describing different greenhouses gases in a common and collective unit. The SCAQMD established the 3,000 MTCO2 per year threshold for residential land uses. As indicated in Table 6, the operational CO2E is 333 MTCO2E per year, which is well below the threshold.

Table 6 Greenhouse Gas Emissions (Metric Tons per year [MT/yr])

Source	GHG Emissions (Metric Tons/year)			
	CO2	CH4	N2O	CO2E
Long-Term – Mobile Emissions	252	0.01	0.01	256
Long-Term – Area Emissions	0.20	--	--	0.20
Long-Term – Energy Emissions	66.3	--	--	66.5
Long-Term – Total Emissions	324	0.17	0.01	333
Short-Term – Construction Emissions	281	0.01	--	283
Total Construction Emissions Amortized Over 30 Years				9.43
Total Emissions				**342.43**
Significance Threshold				**3,000 MTCO2E/year**

California Air Pollution Control Officers Association. *California Emissions Estimator Model*. Version 2022.1.1.25 (Used in Appendix A)

As indicated in Table 6, the majority of the GHG emissions (252 out of 342 MTCO2E) would originate from mobile sources. As a result, the potential impacts are considered to be less than significant.

b) Less Than Significant Impact:

The City of Rancho Mirage's 2012 Sustainability Plan: Leadership in Energy Efficiency (Plan) serves as a framework for the development and implementation of policies and programs that would reduce the City's GHG emissions. The Plan is within a broader sustainability planning context supported by Southern California Edison (SCE) and its rate payers in a program called “Green for Life.” The Plan addresses climate change at the local level by taking action to reduce GHG emissions within the City's operations and within the City with the target of reducing emissions to 1990 levels by 2020 as set by AB 32. In an effort to stay ahead of impending regulations, this Sustainability Plan defines the City of Rancho Mirage's goal of complying, at a minimum, with statewide mandates to reduce GHG emissions. At the same time, through considered action, Rancho Mirage anticipates the following outcomes:

- Increase energy efficiency in local government operations and in community activities;
- Create new jobs in the community associated with smart energy management;
- Save money now being spent for energy and explore the establishment of a revolving fund whereby energy savings will be available for municipal and community programs to enhance energy efficiency and continue to reduce GHG emissions;
- Maintain or enhance the comfortable desert lifestyle of residents and visitors alike; and
- Bring the CVAG jurisdictions together for effective regional sustainability and climate action planning.

Rancho Mirage completed the 2010 Greenhouse Gas Inventory creating a path to sustainability. The inventory provided a detailed and clear analysis of the City's "carbon footprint," showing the sources and sectors of emissions, highlighting opportunities for emissions reductions that make sense for Rancho Mirage. Highlights of the 2010 GHG Inventory for Rancho Mirage are included below. (The full Inventory can be found in Section III of the Rancho Mirage Sustainability Plan):

- In 2010, Rancho Mirage emitted 277,698 metric tons of C02e. To meet AB 32 targets, by 2020 the City needed to reduce its annual emissions by 54,272 metric tons.
- In 2010, the largest percentage of emissions - over 43% - came from the electricity used to power the City's homes, businesses, resorts, fountains, and streetlights.
- In 2010, the largest percentage of emissions -over 43%- came from the electricity used to power the City’s homes, businesses, resorts, fountains, and streetlights. 8.2 Discussion of Impacts: a) Less than Significant Impact. The proposed project would allow for the development of seventeen single-family residential units.

The Rancho Mirage General Plan’s Safety Element in its section on Climate Change includes Goals, Policies and Programs with a preamble identifying the City’s efforts to coordinate with state, regional, and County agencies to establish and maintain an up to date database on climate change conditions in the region, legislation affecting the City’s regulatory responsibilities, and changing technical assessments that refine or re-characterize the climate change impacts

affecting the region. The City would also monitor the effectiveness of its adaptation strategies. The City's development review process is designed to assure that development proposals are thoroughly evaluated regarding climate change and that comprehensive mitigation measures are developed and implemented. The City is also taking a proactive role to assure the public is safe by informing them about severity of climate change impacts and what resources are available to them to mitigate these impacts. Therefore, the project would not conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The project would also comply with applicable Green Building Standards and City of Rancho Mirage's policies regarding sustainability (as dictated by the City's General Plan, Sustainability Plan, and Energy Action Plan). The previous section evaluated the proposed project's GHG emissions. The analysis determined that the GHG emissions would be below the regionally accepted thresholds. The calculated emissions would not exceed the GHG and criteria air pollutant thresholds and therefore would not interfere with the City's efforts to monitor and do its part to address climate change. The proposed project would not involve or require any variance from an adopted plan, policy, or regulation governing GHG emissions. As a result, no potential conflict with an applicable greenhouse gas policy plan, policy, or regulation would occur and the potential impacts are considered to be less than significant.

8.3 Mitigation Measures:

None required.

9 - HAZARDS AND HAZARDOUS MATERIALS

HAZARDS AND HAZARDOUS MATERIALS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

SOURCES:

1. CalEPA. *DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List)*.
2. CalFire. *Very High Fire Hazard Severity Zone Map*.
3. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

9.1 SETTING

Hazardous materials refer generally to hazardous substances that exhibit corrosive, poisonous, flammable, and/or reactive properties and have the potential to harm human health and/or the environment. Hazardous materials are used in a wide variety of products (household cleaners, industrial solvents, paint, pesticides, etc.) and in the manufacturing of products (e.g., electronics, newspapers, plastic products). Hazardous materials can include petroleum, natural gas, synthetic gas, acutely toxic chemicals, and other toxic chemicals that are used in agriculture, commercial, and industrial uses; businesses; hospitals; and households. Accidental releases of hazardous materials can occur from a variety of causes, including highway incidents, warehouse fires, train derailments, shipping accidents, and industrial incidents.

9.2 Discussion of Impacts:

a) Less Than Significant Impact:

The project's construction would require the use of diesel fuel to power the construction equipment. The diesel fuel would be properly sealed in tanks and would be transported to the site by truck. Other hazardous materials that would be used on-site during the project's construction phases include, but are not limited to, gasoline, solvents, architectural coatings, and equipment lubricants. These products are strictly controlled and regulated and in the event of any spill, cleanup activities would be required to adhere to all pertinent protocols. As a result, less than significant impacts would occur.

b) Less Than Significant Impact:

The project's construction would require the use of diesel fuel to power the construction equipment. The diesel fuel would be properly sealed in tanks and would be transported to the site by truck. Other hazardous materials that would be used on-site during the project's construction phase include, but are not limited to, gasoline, solvents, architectural coatings, and equipment lubricants. These products are strictly controlled and regulated and in the event of any spill, cleanup activities would be required to adhere to all pertinent protocols. As indicated in Subsection D, the project site is not listed in either the CalEPA's Cortese List or the Envirostor database. As a result, the likelihood of encountering contamination or other environmental concerns during the project's construction phase is remote. As a result, the impacts would be less than significant.

c) No Impact:

There are no schools located within one-quarter of a mile from the project site. The nearest school is Palm Valley School, located approximately 1.4 miles north of the project site. The next nearest schools to the project site include Rancho Mirage Elementary school, and Cathedral City Elementary School. The proposed residential project would not create a hazard to any local school. As a result, no impacts are anticipated.

d) No Impact:

Government Code Section 65962.5 refers to the Hazardous Waste and Substances Site List, commonly known as the Cortese List. The Cortese List is a planning document used by the State and other local agencies to comply with CEQA requirements that require the provision of information regarding the location of hazardous materials release sites. A search was conducted through the California Department of Toxic Substances Control Envirostor website to identify whether the project site is listed in the database as a Cortese site. The project site is not identified as a Cortese site. Therefore, no impacts would occur.

e) No Impact:

The project site is not located within an airport land use plan and the site is not located within two miles of a public airport or public use airport. The nearest airports to the project site include the Palm Springs International Airport, which is located approximately 4.7 miles northwest of the project site and the Bermuda Dunes Airport is located approximately 9 miles east of the project. The project would not introduce a structure that would interfere with the approach and take off of aircraft utilizing any regional airports. As a result, no impacts related to this issue would occur.

f) No Impact:

At no time would any adjacent street be completely closed to traffic during the proposed project's construction. In addition, all construction staging must occur on-site. As a result, no impacts are associated with the proposed project's implementation.

g) No Impact:

The project site is not located within a "moderate fire hazard severity zone." As a result, no impacts would result.

9.3 Mitigation Measures:

None required.

10 - HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would: i) Result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?	☐	☐	☒	☐
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
iv) Impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

SOURCES:

1. FEMA. Glossary. Flood Zones. Website accessed June 11, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. Fomotor Engineering. *Preliminary Hydrology Study for Tentative Parcel Map 38971.* July 9, 2024.

10.1 SETTING

The Clean Water Act (CWA) is the principal Federal law that addresses water quality. The act's primary objectives are to restore and maintain the chemical, physical, and biological integrity of the nation's waters." The implementation plan for these objectives includes the regulation of pollutant discharges to surface water, financial assistance for public wastewater treatment systems, technology development, and non-point source pollution prevention programs. The Clean Water Act also establishes that states adopt water quality standards to protect public health or welfare and to enhance the quality of water. The use and value of State waters for public water supplies, propagation of fish and wildlife, recreation, agriculture, industrial purposes, and navigation must also be considered by the states.

The *National Pollutant Elimination Discharge System (NPDES)* applies to Statewide construction activities including clearing, grading, or excavation that results in the disturbance of at least one acre of total land area, or activity which is part of a larger common plan of development of one acre or greater. In most cases, the NPDES permit program is administered by authorized states. In California, these programs are administered by the nine Regional Water Quality Control Boards (RWQCBs) that issue NPDES permits and enforce regulations in their respective regions. A requirement of the State General Construction Activity NPDES permit is the preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must identify and implement best management practices (BMPs) to reduce impacts to surface water from contaminated stormwater discharges during the construction of the proposed action. Required elements of an SWPPP include the following: site description addressing the elements and characteristics specific to the site; descriptions of BMPs for erosion and sediment controls; BMPs for waste handling and disposal; implementation of approved local plans; proposed post-construction control requirements; and non-stormwater management.

The City of Rancho Mirage is located within the Whitewater River Watershed, which is an arid desert region in Riverside County encompassing an area of approximately 1,645 square miles. The Whitewater River Region accounts for approximately 367 square miles (22%) of the Whitewater River Watershed. The Riverside County Flood Control and Water Conservation District (RCF & WCD), Coachella Valley Water District, (CVWD), and other incorporated cities within the Coachella Valley including Rancho Mirage, have a joint permittee responsibility for this region, also known as the MS4 Permit area. Development in this area would be required to obtain a NPDES permit.

10.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

During construction, compliance with waste discharge requirements would be met through the permit registration and coverage process under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, as amended by 2010- 0014-DWQ and 2012-006-DWQ. This permit is otherwise known as the Construction General Permit (CGP), applicable to any construction activity that results in a land disturbance of equal to or greater than one acre. In addition, stormwater discharges from construction activities that disturb one or more acres, or smaller sites disturbing less than one acre that are part of a common plan of development or sale, are regulated under the National

Pollutant Discharge Elimination System (NPDES) stormwater permitting program. As a result, the construction impacts would be less than significant.

b) Less Than Significant Impact:

Water used to control fugitive dust would be transported to the site via truck. No direct ground water extraction would occur. Furthermore, the construction and post-construction BMPs would address contaminants of concern from excess runoff, thereby preventing the contamination of local groundwater. These BMP controls may include, but not be limited to, the following:

- Stabilization practices for all areas disturbed by construction and grading.
- Structural practices for all drainage/discharge locations.
- Stormwater management controls, including measures used to control pollutants occurring in stormwater discharges after construction activities are complete.
- Velocity dissipation devices to provide nonerosive flow conditions from the discharge point along the length of any outfall channel.
- Other controls, including waste disposal practices that prevent discharge of solid materials.

In addition, there would be no direct groundwater withdrawals associated with the proposed project's implementation. As a result, the impacts would be less than significant.

c) Less Than Significant Impact:

The proposed project's location would be restricted to the proposed project site and would not alter the course of any stream or river that would lead to on- or off-site siltation or erosion. As a result, the potential impacts would be less than significant.

d) No Impact:

According to the Federal Emergency Management Agency (FEMA) flood insurance maps obtained for the City of Rancho Mirage, the proposed project site is located in a flood hazard zone, labeled as "Zone X" with the description of "0.2% annual chase flood hazard, areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile." Thus, properties located in "Zone X" are areas of minimal flood hazard. The proposed project site is not located in an area that is subject to inundation by seiche or tsunami. In addition, the project site is located inland approximately 70 miles from the Pacific Ocean and the project site would not be exposed to the effects of a tsunami. As a result, no impacts are anticipated.

e) No Impact:

The project's construction would not interfere with any groundwater management or recharge plan since there are no active groundwater management recharge activities on-site or in the vicinity.

According to Appendix D - Hydrology Study and WQMP, Each proposed lot within the project site was separately analyzed for proposed condition basin capacity using Synthetic Unit Hydrograph Shortcut Method for the 1, 3, 6, and 24-hour duration 100-year storm event to determine the worst-case contributing runoff volume. This computed runoff volume was used to size a proposed retention basin for each lot as per City of Rancho Mirage Standard Detail 310 for Retention Basins. The runoff from each proposed onsite area would be directed via swale system to the proposed retention basin. Adjacent half street frontage was added to the runoff area of each lot.

The materials included with this study are presented to satisfy the criteria set forth in the Riverside County Flood Control & Water Conservation District (RCFC & WCD) Hydrology Manual. The onsite/offsite post-developed condition design runoff volume was determined using the worst of the 1, 3, 6, and 24-hour duration storm for the 100-year event. Peak discharges of the 100-year storm event will be determined with the Rational Formula. Synthetic Unit Hydrograph (SUH) calculations were performed in accordance with RCFC & WCD criteria. The Hydrologic Soil Group area was determined with the Natural Resources Conservation Service's National Cooperative Soil Survey (See Reference Material). Point precipitation frequency data was obtained with the National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Data Server from Atlas 14 (See Reference Material.). The NOAA point precipitation data of the 100-year event will be plotted on a log-log plot to obtain the slope of intensity duration curve which will be used in the Rational Method analysis. Any necessary storm drains will be modeled with the computer modeling software, Hydraflow Storm Sewers Extensions for AutoCAD Civil3D 2024, by Autodesk, Inc. Any necessary storm drain inlets will be sized as per AutoCAD Hydraflow Express Extension, Version 12.

Basin infiltration was not used to size the retention basins. A percolation test will be performed in the future. The 1-hour storm was determined to be the worst case of the 1, 3, 6, and 24-hour duration 100-year storm events for the Synthetic Unit Hydrograph analysis. In general, each lot will have an independent retention basin sized to contain the 100-year 1-hour runoff from each respective lot as well as the adjacent half-street frontage. Each basin will be four to five feet deep with 3 to 1 side slopes and receive runoff from swale flow (See SUH Shortcut Calculations and Preliminary Hydrology Plan in the Reference Materials). The impermeable area used for calculations was based on a 1-acre residential lot from Plate D-5.6 of the RCFC&WCD Hydrology Manual and the adjacent half-street frontage was added. The Runoff Index was selected from Plate D-5.5 (1 of 2) of the RCFC&WCD Hydrology Manual.

As a result, no impacts are anticipated.

10.3 MITIGATION MEASURES:

None required.

11 - LAND USE AND PLANNING

LAND USE AND URBAN PLANNING – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

SOURCES:

1. Google Maps. Website Accessed June 11, 2024, and Rancho Mirage Zoning Map, Website Accessed, June 11, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

11.1 SETTING

The legal framework under which California cities and counties exercise local planning and land use functions is set forth in California Planning and Zoning Law, Government Code Sections 65000–66499.58. Under State planning law, each city and county must adopt a comprehensive, long-term general plan. State law provides cities and counties wide latitude in how a jurisdiction may create a general plan. There are certain requirements that must be met including the inclusion of seven mandatory elements described in the Government Code, including a section on land use.

The *Southern California Association of Governments (SCAG)* is the regional planning organization for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The region encompasses a population exceeding 19 million in an area of more than 38,000 square miles. As the designated Council of Governments (COG), the Federal government mandates SCAG to research and develop plans for transportation, growth management, hazardous waste management, and air quality. These mandates led SCAG to prepare comprehensive regional plans to address these concerns. SCAG is responsible for the maintenance of a continuous, comprehensive, and coordinated planning process resulting in a regional transportation plan. SCAG is also responsible for the development of demographic projections and the integrated land use, housing, employment, transportation programs, measures, and strategies for the Air Quality Management Plan (AQMP).

The City of Rancho Mirage General Plan Update, adopted November 16, 2017, includes a chapter dedicated for the land use element: Chapter 2 Land Use. This chapter focuses on a comprehensive plan of the general allocation and distribution of land uses throughout Rancho Mirage as well as setting standards and targets for population density and building intensity. The land use includes residential, commercial, open space, recreation, public buildings, and other categories of public and private land uses. The City of Rancho Mirage utilizes a single map system: the City's General Plan land use designations and the City's zoning designations are the same. The zoning designation for the project site is *Residential Estate (R-E)*

11.2 Discussion of Impacts:

a) No Impact:

Land uses and development located in the vicinity of the proposed project site are outlined below:

- *North of the project site:* The Whitewater Flood Control Channel generally extends along the project area's north side. This area is designated as *Open Space – Floodways and Drainage Channels (OS-W)*.

- *East of the project site:* Single family homes are located to the east of the project site. These homes are designated as *Residential Estate (R-E)*. Further east, the Whitewater Flood Control Channel generally extends along the project area's east side. These parcels are designated as *Open Space – Floodways and Drainage Channels (OS-W)*.

- *South of the project site:* Mirage Cove Drive extends along the project area's south side. Vista Cove at Rancho Mirage, a resort, and a vacant lot are located further south of the aforementioned roadway. These parcels are designated as *Residential Estate (R-E)*.

- *West of the project site:* Nielson Road extends along the project area's west side. Further west of the road are single family homes and a mobile home park. These parcels are designated as *Mobile Home Park (MHP)* and *Residential Estate (R-E)*.

The granting of the requested entitlements and subsequent construction of the proposed project would not result in any expansion of the use beyond the current boundaries. As a result, the project will not lead to any division of an existing established neighborhood. As a result, no impacts would occur.

b) Less than Significant Impact:

According to the Rancho Mirage Land Use and Zoning Map, the *Residential Estate (*R-E) designation provides for single family residential developments on lots one acre or larger in size. The R-E zoning district is intended to provide an intermediate density between more typical residential densities and open space lands. Each individual lot would have a minimum parcel size of 1 acre. Additionally, not only would each individual lot would have a maximum density of 1 du/net acre, at least a 1,000 sq. ft. private outdoor living space, but also the setbacks and other requirements as indicated in the City of Rancho Mirage Code of Ordinance Section 17.08.020 Table 2-3 Residential Zones General Development Standards Requirements by Individual Zoning District. The proposed development would be consistent with this land use designation. As a result, less than significant impact would occur.

11.3 Mitigation Measures:

None required.

12 - MINERAL RESOURCES

MINERAL RESOURCES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

SOURCES:

1. California, State of. Department of Conservation. California *Oil, Gas, and Geothermal Resources Well Finder*.
2. California Department of Conservation. *Mineral Land Classification Map for Riverside County*. Website accessed June 11, 2024.
3. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

12.1 SETTING

The Surface Mining and Reclamation Act of 1975 (SMARA) has developed mineral land classification maps and reports to assist in the protection and development of mineral resources. According to the SMARA, the following four mineral land use classifications are identified:

- *Mineral Resource Zone 1 (MRZ-1):* This land use classification refers to areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- *Mineral Resource Zone 2 (MRZ-2):* This land use classification refers to areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- *Mineral Resource Zone 3 (MRZ-3):* This land use classification refers to areas where the significance of mineral deposits cannot be evaluated from the available data. Hilly or mountainous areas underlain by sedimentary, metamorphic, or igneous rock types and lowland areas underlain by alluvial wash or fan material are often included in this category. Additional information about the quality of material in these areas could either upgrade the classification to MRZ-2 or downgrade it to MRZ-1.
- *Mineral Resource Zone 4 (MRZ-4):* This land use classification refers to areas where available information is inadequate for assignment to any other mineral resource zone.

12.2 DISCUSSION OF IMPACTS:

a). No Impact:

A review of California Division of Oil, Gas, and Geothermal Resources well finder indicates that there are no wells located in the vicinity of the project site. The project site is not located in a Significant Mineral Aggregate Resource Area (SMARA) nor is it located in an area with active mineral extraction activities. A review of California Division of Oil, Gas, and Geothermal

Resources well finder indicates that there are no wells located within or in the vicinity of the project site. The project site is not located within a designated Mineral Resource Zone (MRZ) which means there are no significant mineral resources present on-site. As indicated previously, there are no active mineral extraction activities occurring on-site or in the adjacent properties. As a result, no impacts to mineral resources would occur.

b) No Impact:

As previously mentioned, no mineral, oil, or energy extraction and/or generation activities are located within the project site. Moreover, the proposed project would not interfere with any resource extraction activity. Therefore, no impacts would result from the implementation of the proposed project.

12.3 Mitigation Measures:

None required.

13 - NOISE

NOISE – Would the project result in:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

SOURCES:

1. Toll-Free Airline. Riverside, *California.*
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

13.1 SETTING

Noise levels may be described using several methods designed to evaluate the “loudness” of a particular noise. The most commonly used unit for measuring the level of sound is the decibel (dB). Zero on the decibel scale represents the lowest limit of sound that can be heard by humans. The eardrum may rupture at 140 dB. In general, an increase of between 3.0 dB and 5.0 dB in the ambient noise level is considered to represent the threshold for human sensitivity. Noise level increases of 3.0 dB or less are not generally perceptible to persons with average hearing abilities. The most commonly used unit for measuring the level of sound is the decibel (dB). Zero on the decibel scale represents the lowest limit of sound that can be heard by humans.

13.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

The City regulates noise-generating activities through the Municipal Code and requires that daytime noise levels be 60 dBA CNEL or less at the property line for residential land uses and 45 dBA CNEL or less for all interior areas. Existing land uses in the vicinity of the project site include vacant undeveloped land and residential development. Construction activities would result in localized and temporary increases in ambient noise levels and may impact sensitive receptors. Construction noise sources are regulated within Sections 8.45.050 and 15.04.030(A) 117.1 of the Rancho Mirage Municipal Code which prohibit construction activities other than the hours of 7:00 a.m. to 7:00 p.m., with no construction occurring on Sundays or federal holidays. The project’s construction will occur during the hours permitted by the City of Rancho Mirage. These restrictions, muffling of construction equipment, and other measures will reduce, to some extent,

construction noise impacts on surrounding land uses. Impacts will be temporary and will end once construction is complete.

Construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the scheduled proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. The project's construction noise levels were estimated using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model Version 1.1. The distance used between the construction activity and the nearest sensitive receptors varied depending on the individual pieces of equipment but a distance of 100 feet was used. The model assumes a 10.0 dBA reduction due to attenuation from the existing walls located along the street frontages of the nearby residential development. The results of the construction noise modeling are presented in Table 7 below. The middle column ("Baseline) indicates the anticipated noise levels adjacent to the construction equipment. The last column indicates the anticipated daytime noise levels 100 feet from the equipment.

Table 7 Construction Noise Levels at the Nearest Sensitive Receptors

Construction Equipment	Baseline Max (in Lmax)	Projected Noise Levels (in Lmax)
Backhoe	77.6 dBA	61.5 dBA
Compactor (ground)	83.2 dBA	67.2 dBA
Concrete Mixer	78.8 dBA	62.8 dBA
Dump Truck	76.5 dBA	60.4 dBA
Excavator	80.7 dBA	64.7 dBA
Grader	85.0 dBA	69.0 dBA
Roller	80.0 dBA	64.0 dBA
Paver	77.2 dBA	61.2 dBA
Tractor	84.0 dBA	68.0 dBA
Flat Bed Truck	74.3 dBA	58.2 dBA

Source: Roadway Construction Noise Model

As shown in Table 7, the majority of the equipment would result in noise levels under 65 dBA at a distance of 100 feet from the equipment generating the noise. All of the adjacent residences are located more than 100 feet from where the equipment would be operating. The proposed project will not expose sensitive receptors to excessive noise levels. As a result, the impacts would be less than significant.

b) Less Than Significant Impact:

Construction activities would produce varying degrees of ground vibration, depending on the equipment and methods employed. While ground vibrations from typical construction activities very rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction site. The construction activities that typically generate the highest levels of vibration are blasting and impact pile driving and the use of a vibratory roller. However, the project would not require blasting, pile driving, or vibratory rollers. The largest piece of vibration-generating equipment that could be used for project

construction is a large bulldozer. Large bulldozers generate a vibration level of 0.089 in/sec PPV at 25 feet. Existing or potential noise sensitive residential development is located on all sides of the project site. Ground vibrations associated with construction activities using modern construction methods and equipment rarely reach the levels that result in damage to nearby buildings though vibration related to construction activities may be discernible in areas located near the construction site. A possible exception is in older buildings where special care must be taken to avoid damage.

Table 8 summarizes the levels of vibration and the usual effect on people and buildings. The U.S. Department of Transportation (U.S. DOT) has guidelines for vibration levels from construction related to their activities and recommends that the maximum peak-particle-velocity (PPV) levels remain below 0.05 inches per second at the nearest structures. PPV refers to the movement within the ground of molecular particles and not surface movement. Vibration levels above 0.5 inches per second have the potential to cause architectural damage to normal dwellings. The U.S. DOT also states that vibration levels above 0.015 inches per second (in/sec) are sometimes perceptible to people, and the level at which vibration becomes an irritation to people is 0.64 inches per second. The effects of vibration on buildings are summarized in Table 8.

Table 8 Common Effects of Construction Vibration

Peak Particle Velocity (in/sec)	Effects on Humans	Effects on Buildings
<0.005	Imperceptible	No effect on buildings
0.005 to 0.015	Barely perceptible	No effect on buildings
0.02 to 0.05	Level at which continuous vibrations begin to annoy occupants of nearby buildings	No effect on buildings
0.1 to 0.5	Vibrations considered unacceptable for persons exposed to continuous or long-term vibration.	Minimal potential for damage to weak or sensitive structures
0.5 to 1.0	Vibrations considered bothersome by most people, tolerable if short-term in length	Threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls. Some risk to ancient monuments and ruins.
1.0 to 2.0	Vibrations considered unpleasant by most people.	U.S. Bureau of Mines data indicates that blasting vibration in this range will not harm most buildings. Most construction vibration limits are in this range.
>3.0	Vibration is unpleasant	Potential for architectural damage and possible minor structural damage

Source: U.S. Department of Transportation

Various types of construction equipment have been measured under a wide variety of construction activities with an average of source levels reported in terms of velocity levels as shown in Table 8. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data in Table 9 does provide a reasonable estimate for a wide range of soil conditions. Based on Transit Noise and Vibration Impact Assessment, a vibration level of 102 VdB (vibration decibels, or 0.5 inches per second [in/sec]) is considered safe and would not result in any construction vibration damage.

Table 9 Vibration Source Levels for Typical Construction Equipment

Construction Equipment		PPV @25 ft. (inches/sec.)	Vibration (VdB) @ 25 ft.
Pile Driver (impact)	Upper range	1.58	112
	Typical	0.644	104
Pile Drive (Sonic)	Upper range	0.734	105
	Typical	0.170	93
Clam Shovel Drop		0.202	94
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Small Bulldozer		0.035	79

Source: Federal Highway Administration FHWA Noise and Vibration During Construction

The project will be required to adhere to all pertinent City noise control regulations. The limited duration of construction activities and the City's construction-related noise control requirements will reduce the potential impacts. A vibration level of 0.089 in/sec PPV at 25 feet would be 0.53 in/sec PPV at 40 feet and 0.089 in/sec PPV at 25 feet (refer to Table 9). These vibration levels would be less than the FTA thresholds. Additionally, construction equipment would move throughout the entire site and would only be located near the project boundaries for short periods of time. Thus, vibration levels at the receptors located near the project boundaries would be less than these maximum levels for a majority of the construction period. Although vibration levels may be perceptible for short periods of time, maximum vibration levels would not exceed FTA thresholds. Therefore, project construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant. As a result, the impacts would be less than significant.

c) No Impact:

The project site is not located within an airport land use plan and is located within two miles of a public airport or public use airport. The nearest airports to the project site include the Palm Springs International Airport, which is located approximately 4.7 miles northwest of the project site and the Bermuda Dunes Airport is located approximately 9 miles east of the project. As a result, the proposed project will not expose people residing or working in the project area to excessive noise levels related to airport uses. As a result, no impacts would occur.

13.3 Mitigation Measures:

None required.

14 - POPULATION AND HOUSING

POPULATION AND HOUSING – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

SOURCES:

1. Southern California Association of Governments. The 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments. *Adopted September 3, 2020.*
2. State of California, Department of Finance, *E-5 Population and Housing Estimates for Cities, Counties and the State — January 1, 2021-2023*. Sacramento, California, May 2023.
3. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
4. United States Census Bureau. Rancho Mirage City, California. 2024.

14.1 SETTING

According to the Demographics and Growth Forecast Technical Report Adopted on September 3, 2020 by SCAG, the City of Rancho Mirage's population is projected to increase from the year 2016 figure of 18,200 to 25,200 in the year 2045, an increase of 7,000. The 2024 population estimate of the City of Rancho Mirage is 18,001, according to the United States Census Bureau. The average persons per household is 1.97. An estimated 49.9% of the population in Rancho Mirage is 65 years or older.

14.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

Growth-inducing impacts are generally associated with the provision of urban services to an undeveloped or rural area. Growth-inducing impacts include the following:

- *New development in an area presently undeveloped and economic factors which may influence development.* The site is currently undeveloped. All land use surrounding the property are designated for residential development.
- *Extension of roadways and other transportation facilities.* Future roadway and infrastructure connections will serve the proposed project site only.
- *Extension of infrastructure and other improvements.* The installation of any new utility lines will not lead to subsequent offsite development since these utility connections will serve the site only.
- *Major off-site public projects (treatment plants, etc.).* The project's increase in demand for

utility services can be accommodated without the construction or expansion of landfills, water treatment plants, or wastewater treatment plants.

- *The removal of housing requiring replacement housing elsewhere.* The site contains a single older dilapidated housing unit. As a result, no replacement housing will be required.
- *Additional population growth leading to increased demand for goods and services.* The proposed 16-unit project would potentially result in 31 new residents assuming an average household size of 1.95 persons per household derived from the 2023 United States Census Bureau for the City of Rancho Mirage.
- *Short-term growth-inducing impacts related to the project's construction.* The project will result in temporary employment during the construction phase.

The newly established roads and existing utility lines will serve the project site only and will not extend into undeveloped areas. According to the Demographics and Growth Forecast Technical Report Adopted on September 3, 2020 by SCAG, the City of Rancho Mirage's population is projected to increase from the year 2016 figure of 18,200 to 25,200 in the year 2045, an increase of 7,000. The 2024 population estimate of the City of Rancho Mirage is 18,001, according to the United States Census Bureau. The proposed project will not result in any unplanned growth. Therefore, the impacts would be less than significant.

b) Less Than Significant Impact:

The project site's General Plan and Zoning designation is Residential Estate (R-E). The proposed 16-unit project would potentially result in 31 new residents assuming an average household size of 1.95 persons per household derived from the 2023 United States Census Bureau for the City of Rancho Mirage. Therefore, the impacts would be less than significant.

14.3 MITIGATION MEASURES:

None required.

15 - PUBLIC SERVICES

PUBLIC SERVICES – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

SOURCES:

1. Toll-Free Airline. Riverside*, California.*
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. Statement from Riverside County Sheriff's Department's Lieutenant Chrisopher Ternes.

15.1 SETTING

The Riverside County Fire Department (RCFD), under contract with the City of Rancho Mirage, provides a full range of 24-hour fire protection and emergency medical services to the City. RCFD maintains two fire stations within the City of Rancho Mirage, Fire Station 50 and Fire Station 69.

Law enforcement services in the City of Rancho Mirage are provided under a contractual agreement with Riverside County Sheriff's Department (RCSD). The main County sheriff's station is located Palm Desert at 73-705 Gerald Ford Drive. According to Riverside County Sheriff's Department's Lieutenant Christopher Ternes, the RCSD consists of 10 dedicated police personnel, 19 patrol deputies, and 4 non-dedicated deputies.

The project site is within the boundary of the Palm Springs Unified School District (PSUSD). The district provides education from grades transitional kindergarten to grade 12 within surrounding cities such as Cathedral City, Desert Hot Springs, Palm Desert, Palm Springs, and Rancho Mirage, as well as the unincorporated parts of the County of Riverside.

City of Rancho Mirage provides public parks, open space, and multi-city recreational facilities with various amenities. Other public facilities in the City of Rancho Mirage include the City Hall, public library, and observatory.

15.2 DISCUSSION OF IMPACTS:

i) Less Than Significant Impact:

The Riverside County Fire Department (RCFD), under contract with the City of Rancho Mirage, provides a full range of 24-hour fire protection and emergency medical services to the City. The City's Fire Department serves approximately 25 square miles with an estimated service population of 18,001 (Riverside County Fire Department for Rancho Mirage). RCFD maintains two fire stations within the City of Rancho Mirage, Fire Station 50, and Fire Station 69. Fire Station 50 is located at 70-801 Highway 111. From the City of Rancho Mirage General Plan Update Public Services + Facilities Element, Fire Station 50 covers the southern portion of the City Fire Station 69 is located at 71-751 Gerald Ford Drive. The Riverside County Fire Department operates under a Regional Fire Protection Program, which allows all of its fire stations to provide support as needed regardless of jurisdictional boundaries.

The RCFD currently reviews all new development plans. The proposed project would be required to conform to all fire protection and prevention requirements, including, but not limited to, building setbacks, emergency access, and fire flow (or the flow rate of water that is available for extinguishing fires). The proposed project would only place an incremental demand on fire services since the installation of fire hydrants and sprinkler systems inside the buildings. Furthermore, the project will be reviewed by County Fire officials to ensure adequate fire service and safety as a result of project implementation. Development of the proposed project would result in a minimal increase in demand for fire services. Service calls could place an additional demand on fire personnel, fire apparatus and equipment. The project will be constructed with strict adherence to all pertinent building and fire codes. In addition, the proposed project would be required to implement all pertinent Fire Code Standards. As a result, the impacts would be less than significant.

ii) Less Than Significant Impact:

Law enforcement services in the City of Rancho Mirage are provided under a contractual agreement with Riverside County Sheriff's Department (RCSD). The Sheriff's department provides 24-hour police law enforcement services and operates a small police substation at the Rancho Mirage Public Library. The main County sheriff's station is located Palm Desert at 73-705 Gerald Ford Drive. This station is approximately 4.4 miles from the project site. The City's police department patrols 7 days a week, 365 days a year and 24-hours a day. According to Riverside County Sheriff's Department's Lieutenant Christopher Ternes, the RCSD consists of 10 dedicated police personnel, 19 patrol deputies, and 4 non-dedicated deputies. the City provided a ratio of 1 officer per 786 residents, which is well above the commonly used and accepted ratio of one officer per 1,000 residents. Emergency response times vary and are dependent on the location of patrol cars. The average response time for priority 1 calls in the City of Rancho Mirage was 5 to 6 minutes.

The project site is located in an existing urban area and is currently serviced by the Sheriff's Department. Therefore, the proposed project would not substantially increase the need for new or expanded police facilities and response times are not expected to be impacted. Additionally,

all new construction in the City will be required to pay Development Impact Fees to assist in offsetting impacts to police services. As a result, the impacts would be less than significant.

iii) Less Than Significant Impact:

The project site is within the boundary of the Palm Springs Unified School District (PSUSD). The construction of the proposed 16 single family units would not create a significant increase in school enrollments. The project would be required to pay *School Impact Fees* to the PSUSD. According to the Palm Springs Unified School District, current impact fees at the time of writing is $5.17 per square foot for residential development and $0.84 for commercial/industrial development. The payment of these fees is considered to be mitigation of potential impacts. As a result, the impacts would be less than significant.

iv) Less Than Significant Impact:

City of Rancho Mirage provides public parks, open space, and multi-city recreational facilities with various amenities. The proposed project would be required to comply with the City's parkland in lieu fee (Quimby) and other development impact fees requirements. The future residents generated by project implementation may lead to an incremental increase in physical deterioration of City public recreational facilities. The occupancy of the 16-units would not substantially increase the use of existing parks so as to accelerate their physical deterioration since the site is relatively small and it would provide private open space amenities. Additionally, the project will be required to comply with the City's development impact fee requirements. As a result, the impacts would be less than significant.

v) Less Than Significant Impact:

The proposed project would not generate substantial population growth that would increase the demand for other governmental service. The review of the project indicates that this development will not create any unique public facilities which require extensive maintenance. As a result, the impacts would be less than significant.

15.3 MITIGATION MEASURES:

None required.

16 - RECREATION

RECREATION – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

SOURCES:

1. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

16.1 SETTING

The City of Rancho Mirage contains several mini parks and local parks. Mini Parks are usually less than one acre and are intended to complement adjacent uses. These types of parks may be children's play lots, passive seating areas, city entry features, or special purpose open space areas. Local parks are intended for the active and passive recreation needs of nearby residents in the park's vicinity. These types of parks may include picnic areas, playground equipment, hard court areas, multi-purpose playfields, limited parking, and special landscaping and public art. The nearest park is the Michael S. Wolfson Park located approximately 700 feet north of the project site.

16.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

The project would be required to comply with the City's parkland in lieu fee (Quimby) and other development impact fees requirements. The occupancy of the 16 units would not substantially increase the use of existing parks to accelerate their physical deterioration since the site is relatively small and it would provide private open space amenities. As a result, the impacts would be less than significant.

b) Less Than Significant Impact:

As previously indicated, the implementation of the proposed project would not physically impact any existing parks and recreational facilities in the City. No such facilities are located adjacent to the project site. The project would be required to comply with the City's parkland in lieu fee (Quimby) and other development impact fees requirements. As a result, the impacts would be less than significant.

16.3 MITIGATION MEASURES:

None required.

17 - TRANSPORTATION

TRANSPORTATION – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☐	☒

SOURCES:

1. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

17.1 SETTING

The City of Rancho Mirage has two regional routes through Rancho Mirage: State Highway 111 and U.S. Interstate 10 (I-10). These highway routes provide regional and interstate connections for Rancho Mirage and Coachella Valley. There are 5 categories in the Rancho Mirage roadway hierarchy: Major Arterial, Minor Arterial, Major Collector, Minor Collector, and Local streets. The City of Rancho Mirage is required to operate these roads and all corridors at a level of service (LOS) of D or higher. Streets located within and along the boundaries of the project site include Nielson Road, Peterson Road, Kelley Lane, and Mirage Cove Drive are all classified as Local streets.

17.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

The trip generation for the proposed project is based on the trip generation rates for Land Use 210 – “Single-Family Detached Housing” included in the Institute of Transportation Engineers’ (ITE) *Trip Generation*, 11th Edition.

Table 10 Project Trip Generation

Land Use	Units	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	
Single Family	ITE Code 210	0.19	0.56	0.74	0.62	0.37	0.99	9.44
Project	16 units	3	9	12	10	6	16	151

Source: Institute of Transportation Engineers' (ITE) *Trip Generation*, 11th Edition

As shown in Table 10, the proposed project is forecast to generate 12 total trips in the AM peak hour, 16 total trips in the PM peak hour, and 151 daily trips. The proposed project would not create a level of service deficiency at any area intersection due to the limited trip generation. As a result, the impacts will be less than significant.

b) Less than Significant Impact:

The City's Transportation Analysis Policy identifies three types of screening criteria under which projects are not required to submit a detailed VMT analysis and a presumption of a less than significant transportation impact can be made based on the facts of the project. Project Type Screening Certain types of projects are exempt from the need to prepare a detailed VMT and may be presumed to result in a less than significant VMT impact as they are local serving by nature, thus shortening travel distances by introducing shopping/services within the community, or they are small enough to not warrant assessment. As specified in the City's Transportation Analysis Policy, the following types of projects may be presumed to result in a less than significant VMT impact:

- Local serving retail projects less than 50,000 square feet;
- Day care centers;
- Local parks;
- Local-serving public facilities;
- Ministerial projects;
- Small infill projects;
- Restricted affordable, transit supportive residential projects in planned growth areas with high-quality Transit;
- Transportation projects that do not increase VMT; and
- Projects that generate less than 110 daily vehicle trips. This provision generally correlates to typical development as listed as follows: 11 single-family residential dwelling units; 16 multi-family condominium or townhouse residential dwelling units; or 10,000 square feet of office.

The proposed project's trip daily generation is 151 trips. However, the proposed 16-unit residential development is considered to be a small infill project. According to the VMT legislation (SB 743) an "Infill site" means a lot located within an urban area that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with

qualified urban uses. The nearest major intersections to the project site are listed below. The proposed project is anticipated to generate 160 daily trips with 13 morning (AM) peak hour trips and 17 evening (PM) peak hour trips. As a result, the impacts would be less than significant.

c) Less Than Significant Impact:

The individual units would be located on the Peterson Road and Kelley Lane. The proposed project will not expose future drivers to dangerous intersections or sharp curves and the proposed project will not introduce incompatible equipment or vehicles to the adjacent roads. As a result, the potential impacts would be less than significant.

d) No Impact:

The proposed project would not affect emergency access to any adjacent parcels. At no time during construction will adjacent streets be completely closed to traffic. All construction staging must occur on-site. As a result, no impacts are associated with the proposed project's implementation.

17.3 Mitigation Measures:

None required.

18 - TRIBAL CULTURAL RESOURCES

TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

SOURCES:

1. CRM TECH. 16 Lot Subdivision Project on Peterson Road. March 25, 2024.
2. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
3. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

18.1 SETTING

The California State Government passed AB 4239, creating the Native American Heritage Commission (NAHC). The NAHC is responsible for identifying and categorizing Native American cultural resources as well as preventing damages to designated sacred sites and associated artifacts and remains. Legislation passed in 1982 authorized the NAHC to identify a Most Likely Descendant (MLD) when Native American remains are found outside of any place other than a designated cemetery. An MLD has the authority to make recommendations in regard to the treatment and disposition of the discovered remains.

The *Native American Historic Resource Protection Act* or Assembly Bill (AB 52), defines guidelines for reducing conflicts between Native Americans and development projects and activities. Projects are subject to AB 52 if a notice of preparation for an EIR is filed or a notice of intent to adopt a Negative or Mitigated Negative Declaration is filed on or after July 1, 2016. “Tribal Cultural Resources” (TCR) are protected under CEQA and are defined as a site, feature, place, cultural landscape (must include the size and scope of landscape), sacred place, and object with a cultural value to a California Native American tribe that is either included or eligible for inclusion in the California Register or included in a local register of historical resources. At the lead agency’s discretion, a resource can be treated as a TCR if a Native American Tribe provides substantial evidence. Additionally, AB 52 allows tribes to engage in consultation with lead agencies and sets guidelines for such consultation.

18.2 Discussion of Impacts:

a) Less Than Significant Impact with Mitigation:

A Tribal Resource is defined in Public Resources Code section 21074 and includes the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: included or determined to be eligible for inclusion in the California Register of Historical Resources or included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision I of Section 5024.1. In applying the criteria set forth in subdivision I of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a “non-unique archaeological resource” as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms to the criteria of subdivision (a).

All potentially interested tribes identified by the NAHC were also contacted pursuant to AB-52 for information regarding their knowledge of cultural resources that were within or near the project area. Tribal consultation was completed on May 15, 2025. The tribal consultation letters are attached as Appendix G – Tribal Consultation Letters. All potentially interested tribes identified by the NAHC were also contacted pursuant to AB-52 for information regarding their knowledge of cultural resources that were within or near the project area. These groups include the Agua Caliente Band of Cahuilla Indians, Augustine Band of Cahuilla Mission Indians, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Campo Band of Diegueno Mission Indians, Ewiiaapaayp Band of Kumeyaay Indians, La Posta Band of Duegueno Mission Indians, Los Coyotes Band of Mission Indians, Manzanita Band of Kumeyaay Nation, Mesa Grand Band of Diegueno Mission Indians, Morongo Band of Mission Indians, Pechanga Band of Indians, Quechan Tribe of the Fort Yuma, Quechan Tribe of the Fort Yuma Reservation, Ramona Band of Cahuilla, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, and Torres Martinez Desert Cahuilla Indians.

Augustine Band of Cahuilla Indians responded they are “unaware of specific cultural resources that may be affected by the proposed project.”

The Quechan Tribe of the Fort Yuma responded they “[did] not wish to comment on this project.”

The City has not received any additional correspondence from the Pechanga Band of Indians since April 21, 2025. In accordance with AB 52, and based on the reasonable and good-faith efforts detailed in the City’s letter in Appendix G – Tribal Consultation Letters, the City concluded

that mutual agreement could not be reached. Therefore, the AB 52 Tribal Consultation period with the Pechanga Band of Indians would be considered closed.

The Agua Caliente Band of Cahuilla Indians (ACBCI) has met with city staff for a consultation meeting to address concerns regarding the project's impact on Tribal Cultural resources. As a result of the meeting, the ACBCI requested the addition of the following mitigations d to ensure the protection of tribal cultural resources within an April 29, 2025 letter . The applicant would be required to follow the mitigation measures to reduce potential impacts to tribal cultural resources:

Tribal Cultural Resources Mitigation No. 1 The Agua Caliente Band of Cahuilla Indians must be notified a minimum of 30 days prior to any earth-moving activities including grading, grubbing, trenching, or excavations at the site. All earth-moving activities including grading, grubbing, trenching, or excavations at the site shall be monitored by a qualified archaeologist and/or approved Agua Caliente Native American Cultural Resource Monitor(s).

Tribal Cultural Resources Mitigation No. 2 A qualified archaeologist and approved Agua Caliente Native American Cultural Resource Monitor(s) shall provide preconstruction training for all earthmoving construction personnel prior to the start of any ground-disturbing activities, regarding how to recognize the types of Tribal Cultural Resources and/or archaeological resources that may be encountered and to instruct personnel about actions to be taken in the event of a discovery. Should cultural materials be discovered, they shall be recorded and evaluated in the field. The monitors shall be prepared to recover artifacts to avoid construction delays but must have the power to temporarily halt or divert construction equipment to allow for controlled archaeological recovery if a substantial cultural deposit is encountered. If artifacts are discovered, these shall be cataloged and analyzed. The archaeologist and monitor, in discussion with the Tribal Historic Preservation Office, shall determine and implement the best course of action for the treatment and disposition of the artifacts.

Tribal Cultural Resources Mitigation No. 3 In the unexpected event human remains are uncovered during construction activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the Coroner to be of Native American descent, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains.

b) Less Than Significant Impact:

The project site is located within or on the Agua Caliente Band of Cahuilla Indians territory. A search of the National Register of Historic Places and the list of California Historical Resources was conducted, and it was determined that no Native historic resources was listed within the City of Rancho Mirage. Since the project's implementation would not impact any Federal, State, or locally designated historic resources. As a result, no impacts would occur.

18.3 MITIGATION MEASURES:

The analysis of tribal cultural resources impacts determined that the following mitigation measures would be required to reduce the project's impacts to levels that would be less than significant.

Tribal Cultural Resources Mitigation No. 1 The Agua Caliente Band of Cahuilla Indians must be notified a minimum of 30 days prior to any earth-moving activities including grading, grubbing, trenching, or excavations at the site. All earth-moving activities including grading, grubbing, trenching, or excavations at the site shall be monitored by a qualified archaeologist and/or approved Agua Caliente Native American Cultural Resource Monitor(s).

Tribal Cultural Resources Mitigation No. 2 A qualified archaeologist and approved Agua Caliente Native American Cultural Resource Monitor(s) shall provide preconstruction training for all earthmoving construction personnel prior to the start of any ground-disturbing activities, regarding how to recognize the types of Tribal Cultural Resources and/or archaeological resources that may be encountered and to instruct personnel about actions to be taken in the event of a discovery. Should cultural materials be discovered, they shall be recorded and evaluated in the field. The monitors shall be prepared to recover artifacts to avoid construction delays but must have the power to temporarily halt or divert construction equipment to allow for controlled archaeological recovery if a substantial cultural deposit is encountered. If artifacts are discovered, these shall be cataloged and analyzed. The archaeologist and monitor, in discussion with the Tribal Historic Preservation Office, shall determine and implement the best course of action for the treatment and disposition of the artifacts.

Tribal Cultural Resources Mitigation No. 3 In the unexpected event human remains are uncovered during construction activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the Coroner to be of Native American descent, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains.

19 - UTILITIES AND SERVICE SYSTEMS

UTILITIES AND SERVICE SYSTEMS – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statues and regulations related to solid waste?	☐	☐	☐	☒

SOURCES:

1. California Department of Resources Recycling and Recovery (CalRecycle). *Jurisdiction Review Reports.* 2023.
2. Coachella Valley Water District. *2022-23 Annual Review.* 2023.
3. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
4. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.

19.1 SETTING

Groundwater is the primary source of domestic water supply in the Coachella Valley. The Coachella Valley Water District (CVWD) is the largest provider of potable water in the valley and currently provides potable water in the project vicinity. CVWD operates more than 100 wells and serves a population of 290,000 in its service area including the City of Rancho Mirage. There are no existing water infrastructure located on-site.

The CVWD manages wastewater transportation and treatment within the City of Rancho Mirage.The CVWD operates 6 water reclamation plants and maintains more than 1,000 miles of sewer pipelines and more than 30 lift stations that transport wastewater to the nearest treatment facility and nearly 6.3 billion gallons of wastewater is treated yearly.

Solid waste disposal and recycling services for the City of Rancho Mirage is provided by Burrtec. Solid waste and recycling collected from the proposed project will be hauled to the Edom Hill Transfer Station. Waste from this transfer station is then sent to a permitted landfill or recycling facility outside of the Coachella Valley. These include Badlands Disposal Site, El Sobrante Sanitary Landfill and Lamb Canyon Disposal Site.

19.2 DISCUSSION OF IMPACTS:

a) Less Than Significant Impact:

There are no existing water or wastewater treatment plants, electric power plants, telecommunications facilities, natural gas facilities, or stormwater drainage infrastructure located on-site. Therefore, the project's implementation will not require the relocation of any of the aforementioned facilities. The existing unit located on the property is dilapidated and would be replaced. As a result, the potential impacts would be less than significant.

b) Less Than Significant Impact:

Groundwater is the primary source of domestic water supply in the Coachella Valley. The Coachella Valley Water District (CVWD) is the largest provider of potable water in the valley and currently provides potable water in the project vicinity. CVWD operates more than 100 wells and serves a population of 290,000 in its service areas. CVWD's 2012 adopted Water Management Plan and 2015 Urban Water Management Plan (UWMP) have been developed to assist the agency in reliably meeting current and future water demands in a cost-effective manner. The 2015 UWMP serves as a planning tool that documents actions in support of long-term water resources planning and ensures adequate water supplies are available to meet the existing and future urban water demands. There are no existing water infrastructure located on-site. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. As indicated in Table 11, the proposed project is projected to consume approximately 9,066 gallons of water on a daily basis.

Table 11 Water Consumption (gals/day)

Use	Unit	Factor	Generation
Single-family Home	16 units	566.6 gals./unit/day*	9,066 gals./day
Total	16 units		9,066 gals./day

Source: Coachella Valley Water District. *2022-23 Annual Review.* 2023.
*Based on 301 gals./capita/day

The existing water supply facilities and infrastructure will be able to accommodate this additional demand. In addition, the proposed project will be equipped with water efficient fixtures and drought tolerant landscaping will be planted throughout the project site. As a result, the impacts are considered to be less than significant. As a result, the impacts will be less than significant.

c) Less Than Significant Impact:

The CVWD operates 6 water reclamation plants and maintains more than 1,000 miles of sewer pipelines and more than 30 lift stations that transport wastewater to the nearest treatment facility

and nearly 6.3 billion gallons of wastewater is treated yearly. CVWD's peak flow factor of 200 gallons per day per equivalent dwelling unit (EDU), was used to determine the proposed wastewater generation for the project. The site was found to provide approximately 55 EDU and estimates a total wastewater demand of approximately 11,000 gallons per day (gpd), or 0.011 MGD. In addition, wastewater generated by the Project will be conveyed to CVWD Wastewater Reclamation Plant Number 10 in Palm Desert (WRP-10). Per the 2015 CVWD Urban Water Management Plan, WRP-10 has a capacity to treat 18 million gallons per day (MGD). This plant treats an annual average flow of 10.8 MGD (12,000 AFY) from the activated sludge plant. There are no existing water infrastructure located on-site. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. According to Table 12, the proposed project is expected to generate approximately 2,096 gallons of sewage per day.

Table 12 Wastewater (Effluent) Generation (gals/day)

Use	Unit	Factor	Generation
Single Family Residential	16 units	131 gals./unit/day*	2,096 gals./day
Total	16 units		2,096 gals./day

Source: Coachella Valley Water District. *2022-23 Annual Review.* 2023.
*Based on 69.6 gals./capita/day

The proposed project's sewage generation will likely be lower since the new plumbing fixtures that will be installed will consist of water conserving fixtures as is required by the current City Code requirements. As a result, the impacts are expected to be less than significant.

d) Less Than Significant Impact:

Solid waste disposal and recycling services for the City of Rancho Mirage is provided by Burrtec. Solid waste and recycling collected from the proposed project will be hauled to the Edom Hill Transfer Station. Waste from this transfer station is then sent to a permitted landfill or recycling facility outside of the Coachella Valley. These include Badlands Disposal Site, El Sobrante Sanitary Landfill and Lamb Canyon Disposal Site. Cal-Recycle data indicates the Bandlands Disposal site has 15,748,799 cubic yards of remaining capacity, the El Sobrante Landfill has a remaining capacity of 143,977,170 tons of solid waste, and Lamb Canyon Disposal has a remaining solid waste capacity of 19,242,950 cubic yards.

The proposed project is anticipated to generate approximately 259 pounds per day of solid waste (refer to Table 13). The projected quantify of solid waste is limited and can be accommodate by the existing capacity. As a result, the potential impacts are considered to be less than significant.

Table 13 Solid Waste Generation (lbs./day)

Use	Unit	Factor	Generation
Single Family Residential	16 units	16.2 lbs./unit/day*	259 lbs./day
Total	16 units		259 lbs./day

Source: California Department of Resources Recycling and Recovery (CalRecycle). *Jurisdiction Review Reports.* 2023.
*Based on 8.60 lbs./capita/day

e) No Impact:

The proposed project, like all other development in Rancho Mirage and Riverside County, would be required to adhere to City and County ordinances with respect to waste reduction and recycling. As a result, no impacts related to State and local statutes governing solid waste are anticipated.

19.3 MITIGATION MEASURES:

None required.

20 - WILDFIRE

WILDFIRE – Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

SOURCES:

1. Fomotor Engineering. *Tract Map 38971*. November 21, 2024.
2. Rancho Mirage, City of. *City of Rancho Mirage 2017 General Plan Update.* Adopted November 16, 2017.
3. Rancho Mirage, City of. Local Hazard Mitigation Plan. https://ranchomirageca.gov/wp-content/uploads/2022/07/Rancho-Mirage-2017-LHMP-Final-Adopted.pdf

20.1 SETTING

According to Appendix G of the CEQA Guidelines, a project may be deemed to have a significant adverse impact on wildfire risk and hazards if it results in any of the following:

- The proposed project would, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, substantially impair an adopted emergency response plan or emergency evacuation plan.

- The proposed project would, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

- The proposed project would, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation

or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.

- The proposed project would, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

According to the City's Local Hazard Mitigation Plan, The risk of fire in Rancho Mirage is considered moderate to very high due to a combination of hot dry summers, steep mountain terrain and sparse scrub vegetation. Although the majority of land within the City includes urbanized land such as golf courses, manicured lawns and street parkways, the northernmost area of the City (generally north of Ramon Road) is moderately susceptible to fire.

20.2 DISCUSSION OF IMPACTS:

a) No Impact:

Surface streets would be improved so as to serve the project site and adjacent area. Furthermore, the proposed project would not involve the closure or alteration of any existing evacuation routes that would be important in the event of a wildfire. At no time during construction will adjacent streets be completely closed to traffic. All construction staging must occur on-site. As a result, no impacts would occur.

b) No Impact:

The project site is located in the midst of an undeveloped area. The proposed project may be exposed to particulate emissions generated by wildland fires in the mountains located to the west of the site. However, the potential impacts would not be exclusive to the project site since criteria pollutant emissions from wildland fires may affect the entire City as well as the surrounding cities and unincorporated county areas. As a result, no impacts would occur.

c) No Impact:

The project site is not located in an area that is classified as a moderate fire risk severity within a State Responsibility Area (SRA), and therefore will not require the installation of specialized infrastructure such *as fire roads, fuel breaks, or emergency water* sources. As a result, no impacts would occur.

d) No Impact:

There is no risk from wildfire within the project site or the surrounding area given the project site's distance from any area that may be subject to a wildfire event. In addition, the site is not located within a moderate fire risk and state responsibility area. Therefore, the project would not expose future residents to flooding or landslides facilitated by runoff flowing down barren and charred slopes. As a result, no impacts would occur.

20.3 MITIGATION MEASURES:

None required.

21 - MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

21.1 DISCUSSION OF IMPACTS:

a) Less than Significant Impact with Mitigation:

The proposed project *would not* have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory. *As indicated in Chapter 2.1 through 2.20, the proposed project will not result in any significant unmitigable environmental impacts.*

Biological Resources Mitigation Measure No. 1. Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.

a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If

nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.

b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.

Biological Resources Mitigation Measure No. 2. A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.

Tribal Cultural Resources Mitigation Measure No. 1. The Agua Caliente Band of Cahuilla Indians must be notified a minimum of 30 days prior to any earth-moving activities including grading, grubbing, trenching, or excavations at the site. All earth-moving activities including grading, grubbing, trenching, or excavations at the site shall be monitored by a qualified archaeologist and/or approved Agua Caliente Native American Cultural Resource Monitor(s).

Tribal Cultural Resources Mitigation Measure No. 2. A qualified archaeologist and approved Agua Caliente Native American Cultural Resource Monitor(s) shall provide preconstruction training for all earthmoving construction personnel prior to the start of any ground-disturbing activities, regarding how to recognize the types of Tribal Cultural Resources and/or archaeological resources that may be encountered and to instruct personnel about actions to be taken in the event of a discovery. Should cultural materials be discovered, they shall be recorded and evaluated in the field. The monitors shall be prepared to recover artifacts to avoid construction delays but must have the power to temporarily halt or divert construction equipment to allow for controlled archaeological recovery if a substantial cultural deposit is encountered. If artifacts are discovered, these shall be cataloged and analyzed. The archaeologist and monitor, in discussion with the Tribal Historic Preservation Office, shall determine and implement the best course of action for the treatment and disposition of the artifacts.

Tribal Cultural Resources Mitigation Measure No. 3. In the unexpected event human remains are uncovered during construction activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the Coroner to be of Native American descent, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains.

b) No Impact:

The proposed project *would not* have impacts that are individually limited, but cumulatively considerable. *The environmental impacts will not lead to a cumulatively significant impact on any of the issues analyzed herein.*

c) No Impact:

The proposed project *would not* have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

Table 13 Mitigation Monitoring and Reporting Program			
Mitigation Measure	**Responsible Agency**	**Timing**	**Verification (Date and Initials)**
AESTHETICS			
No Mitigation was required.			
AGRICULTURAL RESOURCES			
No Mitigation was required.			
AIR QUALITY			
No Mitigation was required.			
BIOLOGICAL RESOURCES			
Biological Resources Mitigation Measure No. 1. Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance. a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged. b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas..	Project Developer Qualified Biologist City of Rancho Mirage	Prior to commencement of Construction	
Biological Resources Mitigation Measure No. 2. A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.	Project Developer Qualified Biologist City of Rancho Mirage	Prior to commencement of Construction	
CULTURAL RESOURCES			
No Mitigation was required.			
GEOLOGY AND SOILS			
No Mitigation was required.			
GREENHOUSE GAS EMISSIONS			
No Mitigation was required.			
HAZARDS AND HAZARDOUS MATERIALS			
No Mitigation was required.			
HYDROLOGY AND WATER QUALITY			

No Mitigation was required.			
LAND USE AND PLANNING			
No Mitigation was required.			
MINERAL RESOURCES			
No Mitigation was required.			
NOISE			
No Mitigation was required.			
POPULATION AND HOUSING			
No Mitigation was required.			
PUBLIC SERVICES			
No Mitigation was required.			
RECREATION			
No Mitigation was required.			
TRANSPORTATION/TRAFFIC			
No Mitigation was required.			
TRIBAL CULTURAL RESOURCES			
Tribal Cultural Resources Mitigation Measure No. 1. The Agua Caliente Band of Cahuilla Indians must be notified a minimum of 30 days prior to any earth-moving activities including grading, grubbing, trenching, or excavations at the site. All earth-moving activities including grading, grubbing, trenching, or excavations at the site shall be monitored by a qualified archaeologist and/or approved Agua Caliente Native American Cultural Resource Monitor(s).	Project Developer Cultural Monitor City of Rancho Mirage	Prior to commencement of Construction	
Tribal Cultural Resources Mitigation Measure No. 2. A qualified archaeologist and approved Agua Caliente Native American Cultural Resource Monitor(s) shall provide preconstruction training for all earthmoving construction personnel prior to the start of any ground-disturbing activities, regarding how to recognize the types of Tribal Cultural Resources and/or archaeological resources that may be encountered and to instruct personnel about actions to be taken in the event of a discovery. Should cultural materials be discovered, they shall be recorded and evaluated in the field. The monitors shall be prepared to recover artifacts to avoid construction delays but must have the power to temporarily halt or divert construction equipment to allow for controlled archaeological recovery if a substantial cultural deposit is encountered. If artifacts are discovered, these shall be cataloged and analyzed. The archaeologist and monitor, in discussion with the Tribal Historic Preservation Office, shall determine and implement the best course of action for the treatment and disposition of the artifacts.	Project Developer Cultural Monitor City of Rancho Mirage	During the Project's construction phase	
Tribal Cultural Resources Mitigation Measure No. 3. In the unexpected event human remains are uncovered during construction activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the Coroner to be of Native American descent, the Coroner shall contact the Native	Project Developer Cultural Monitor City of Rancho Mirage	During the Project's construction phase	

American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains.			
UTILITIES AND SERVICE SYSTEMS			
No Mitigation was required.			
Wildfire			
No Mitigation was required.			

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CHAPTER 3: REFERENCES

The references that were consulted have been identified using footnotes.

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CHAPTER 5: REPORT PREPARERS

Lead Agency

City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, California 92270

Subconsultants

Blodgett Baylosis Environmental Planning
2211 S. Hacienda Boulevard, Suite 107
Hacienda Heights, California 91745
(626) 336-0033

Marc Blodgett, Project Principal
Raymond Wen, Project Manager
Brian Wong, Project Planner & GIS Technician

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APPENDIX A

RNCH 005 - 16 Lot Subdivision (TTM 38971) Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	RNCH 005 - 16 Lot Subdivision (TTM 38971)
Construction Start Date	7/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	10.0
Location	33.7677427749099, -116.43910090881545
County	Riverside-Salton Sea
City	Rancho Mirage
Air District	South Coast AQMD
Air Basin	Salton Sea
TAZ	5621
EDFZ	11
Electric Utility	Southern California Edison
Gas Utility	Southern California Gas
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	16.0	Dwelling Unit	19.8	31,200	187,406	—	52.0	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-9	Use Dust Suppressants
Construction	C-10-A	Water Exposed Surfaces

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	4.04	3.40	31.7	31.8	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	6,896	6,896	0.28	0.06	1.03	6,923
Mit.	4.04	3.40	31.7	31.8	0.06	1.37	7.89	9.26	1.26	3.99	5.25	—	6,896	6,896	0.28	0.06	1.03	6,923
% Reduced	—	—	—	—	—	—	60%	56%	—	61%	54%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.91	9.89	10.5	13.4	0.02	0.43	0.20	0.52	0.40	0.05	0.42	—	2,525	2,525	0.10	0.03	0.02	2,536
Mit.	9.91	9.89	10.5	13.4	0.02	0.43	0.20	0.52	0.40	0.05	0.42	—	2,525	2,525	0.10	0.03	0.02	2,536
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	0.97	6.72	9.09	0.02	0.27	1.35	1.62	0.25	0.59	0.84	—	1,699	1,699	0.07	0.02	0.13	1,707
Mit.	1.12	0.97	6.72	9.09	0.02	0.27	0.56	0.83	0.25	0.24	0.49	—	1,699	1,699	0.07	0.02	0.13	1,707
% Reduced	—	—	—	—	—	—	59%	49%	—	60%	42%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.18	1.23	1.66	< 0.005	0.05	0.25	0.30	0.05	0.11	0.15	—	281	281	0.01	< 0.005	0.02	283
Mit.	0.20	0.18	1.23	1.66	< 0.005	0.05	0.10	0.15	0.05	0.04	0.09	—	281	281	0.01	< 0.005	0.02	283
% Reduced	—	—	—	—	—	—	59%	49%	—	60%	42%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.04	3.40	31.7	31.8	0.06	1.37	19.9	21.3	1.26	10.2	11.4	—	6,896	6,896	0.28	0.06	1.03	6,923
2026	1.31	1.10	9.94	13.5	0.02	0.38	0.09	0.47	0.35	0.02	0.37	—	2,534	2,534	0.10	0.03	0.41	2,546
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.37	1.15	10.5	13.4	0.02	0.43	0.09	0.52	0.40	0.02	0.42	—	2,525	2,525	0.10	0.03	0.01	2,536
2026	9.91	9.89	9.94	13.3	0.02	0.38	0.20	0.52	0.35	0.05	0.37	—	2,522	2,522	0.10	0.03	0.02	2,533
2027	9.91	9.88	0.84	1.18	< 0.005	0.02	0.02	0.03	0.02	< 0.005	0.02	—	147	147	0.01	< 0.005	< 0.005	148
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.85	0.72	6.54	7.00	0.01	0.27	1.35	1.62	0.25	0.59	0.84	—	1,395	1,395	0.06	0.01	0.10	1,401
2026	1.12	0.97	6.72	9.09	0.02	0.26	0.07	0.33	0.24	0.02	0.25	—	1,699	1,699	0.07	0.02	0.13	1,707
2027	0.33	0.33	0.03	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.94	4.94	< 0.005	< 0.005	< 0.005	4.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.19	1.28	< 0.005	0.05	0.25	0.30	0.05	0.11	0.15	—	231	231	0.01	< 0.005	0.02	232
2026	0.20	0.18	1.23	1.66	< 0.005	0.05	0.01	0.06	0.04	< 0.005	0.05	—	281	281	0.01	< 0.005	0.02	283
2027	0.06	0.06	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.82

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	4.04	3.40	31.7	31.8	0.06	1.37	7.89	9.26	1.26	3.99	5.25	—	6,896	6,896	0.28	0.06	1.03	6,923
2026	1.31	1.10	9.94	13.5	0.02	0.38	0.09	0.47	0.35	0.02	0.37	—	2,534	2,534	0.10	0.03	0.41	2,546
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.37	1.15	10.5	13.4	0.02	0.43	0.09	0.52	0.40	0.02	0.42	—	2,525	2,525	0.10	0.03	0.01	2,536
2026	9.91	9.89	9.94	13.3	0.02	0.38	0.20	0.52	0.35	0.05	0.37	—	2,522	2,522	0.10	0.03	0.02	2,533
2027	9.91	9.88	0.84	1.18	< 0.005	0.02	0.02	0.03	0.02	< 0.005	0.02	—	147	147	0.01	< 0.005	< 0.005	148
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.85	0.72	6.54	7.00	0.01	0.27	0.56	0.83	0.25	0.24	0.49	—	1,395	1,395	0.06	0.01	0.10	1,401
2026	1.12	0.97	6.72	9.09	0.02	0.26	0.07	0.33	0.24	0.02	0.25	—	1,699	1,699	0.07	0.02	0.13	1,707
2027	0.33	0.33	0.03	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.94	4.94	< 0.005	< 0.005	< 0.005	4.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.16	0.13	1.19	1.28	< 0.005	0.05	0.10	0.15	0.05	0.04	0.09	—	231	231	0.01	< 0.005	0.02	232
2026	0.20	0.18	1.23	1.66	< 0.005	0.05	0.01	0.06	0.04	< 0.005	0.05	—	281	281	0.01	< 0.005	0.02	283
2027	0.06	0.06	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.82

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	1.50	1.43	0.82	7.76	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	2,099	2,109	1.01	0.08	5.37	2,162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.29	1.23	0.87	4.60	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	1,910	1,919	1.01	0.08	0.36	1,969
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.35	1.29	0.82	5.62	0.02	0.02	1.31	1.33	0.02	0.33	0.35	9.19	1,950	1,959	1.01	0.08	2.40	2,010
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.23	0.15	1.03	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	1.52	323	324	0.17	0.01	0.40	333

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Area	0.81	0.80	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.50	1.43	0.82	7.76	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	2,099	2,109	1.01	0.08	5.37	2,162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Area	0.72	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.29	1.23	0.87	4.60	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	1,910	1,919	1.01	0.08	0.36	1,969
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.57	0.52	0.68	5.11	0.01	0.01	1.31	1.32	0.01	0.33	0.34	—	1,524	1,524	0.06	0.07	2.17	1,549
Area	0.76	0.76	< 0.005	0.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.20	1.20	< 0.005	< 0.005	—	1.20
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.35	1.29	0.82	5.62	0.02	0.02	1.31	1.33	0.02	0.33	0.35	9.19	1,950	1,959	1.01	0.08	2.40	2,010
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256
Area	0.14	0.14	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20
Energy	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.3	66.3	< 0.005	< 0.005	—	66.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98
Waste	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.25	0.23	0.15	1.03	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	1.52	323	324	0.17	0.01	0.40	333

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Area	0.81	0.80	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.50	1.43	0.82	7.76	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	2,099	2,109	1.01	0.08	5.37	2,162
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Area	0.72	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.29	1.23	0.87	4.60	0.02	0.02	1.35	1.37	0.02	0.34	0.36	9.19	1,910	1,919	1.01	0.08	0.36	1,969
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.57	0.52	0.68	5.11	0.01	0.01	1.31	1.32	0.01	0.33	0.34	—	1,524	1,524	0.06	0.07	2.17	1,549
Area	0.76	0.76	< 0.005	0.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.20	1.20	< 0.005	< 0.005	—	1.20
Energy	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	400	400	0.03	< 0.005	—	401
Water	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Waste	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.35	1.29	0.82	5.62	0.02	0.02	1.31	1.33	0.02	0.33	0.35	9.19	1,950	1,959	1.01	0.08	2.40	2,010
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256
Area	0.14	0.14	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20

Energy	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.3	66.3	< 0.005	< 0.005	—	66.5
Water	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98
Waste	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	0.25	0.23	0.15	1.03	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	1.52	323	324	0.17	0.01	0.40	333

3. Construction Emissions Details

3.1. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188

Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.43	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	223	223	0.01	0.01	0.77	226
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.86	2.40	22.2	19.9	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.22	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.43	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	223	223	0.01	0.01	0.77	226
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.1	11.1	< 0.005	< 0.005	0.02	11.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.84	1.84	< 0.005	< 0.005	< 0.005	1.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.87	0.83	< 0.005	0.04	—	0.04	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.67	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	260	260	0.01	0.01	0.90	264
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.48	6.48	< 0.005	< 0.005	0.01	6.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Site Preparation (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.94	3.31	31.6	30.2	0.05	1.37	—	1.37	1.26	—	1.26	—	5,295	5,295	0.21	0.04	—	5,314

Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.87	0.83	< 0.005	0.04	—	0.04	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.21	0.21	—	0.11	0.11	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.09	1.67	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	260	260	0.01	0.01	0.90	264

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.48	6.48	< 0.005	< 0.005	0.01	6.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.44	2.33	0.01	0.10	—	0.10	0.09	—	0.09	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.45	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.10	1.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	297	297	0.01	0.01	1.03	301
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.2	22.2	< 0.005	< 0.005	0.04	22.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	0.01	3.72
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.80	3.20	29.7	28.3	0.06	1.23	—	1.23	1.14	—	1.14	—	6,599	6,599	0.27	0.05	—	6,622
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.31	0.26	2.44	2.33	0.01	0.10	—	0.10	0.09	—	0.09	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.12	0.12	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.45	0.42	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.11	0.10	1.91	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	297	297	0.01	0.01	1.03	301
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.2	22.2	< 0.005	< 0.005	0.04	22.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.68	3.68	< 0.005	< 0.005	0.01	3.72
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.21	1.98	2.48	< 0.005	0.08	—	0.08	0.08	—	0.08	—	455	455	0.02	< 0.005	—	457
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	75.4	75.4	< 0.005	< 0.005	—	75.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.55	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.5	85.5	< 0.005	< 0.005	0.30	86.8
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	0.01	0.15	56.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.31	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	72.8	72.8	< 0.005	< 0.005	0.01	73.7
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	54.2	54.2	< 0.005	0.01	< 0.005	56.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.8	14.8	< 0.005	< 0.005	0.02	15.0
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.01	10.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.45	2.45	< 0.005	< 0.005	< 0.005	2.48
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.70	1.70	< 0.005	< 0.005	< 0.005	1.77
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Building Construction (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.21	1.98	2.48	< 0.005	0.08	—	0.08	0.08	—	0.08	—	455	455	0.02	< 0.005	—	457
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	75.4	75.4	< 0.005	< 0.005	—	75.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.55	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.5	85.5	< 0.005	< 0.005	0.30	86.8
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	54.1	54.1	< 0.005	0.01	0.15	56.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.03	0.31	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	72.8	72.8	< 0.005	< 0.005	0.01	73.7
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	54.2	54.2	< 0.005	0.01	< 0.005	56.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.8	14.8	< 0.005	< 0.005	0.02	15.0
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.3	10.3	< 0.005	< 0.005	0.01	10.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.45	2.45	< 0.005	< 0.005	< 0.005	2.48
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.70	1.70	< 0.005	< 0.005	< 0.005	1.77
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.68	6.25	8.22	0.01	0.24	—	0.24	0.22	—	0.22	—	1,520	1,520	0.06	0.01	—	1,525
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.50	< 0.005	0.04	—	0.04	0.04	—	0.04	—	252	252	0.01	< 0.005	—	253
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.51	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.7	83.7	< 0.005	< 0.005	0.27	84.9
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	0.14	55.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	71.3	71.3	< 0.005	< 0.005	0.01	72.2
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	53.2	53.2	< 0.005	0.01	< 0.005	55.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.02	0.23	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.3	48.3	< 0.005	< 0.005	0.07	48.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	< 0.005	0.04	35.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.00	8.00	< 0.005	< 0.005	0.01	8.10
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	0.01	5.82
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Building Construction (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.81	0.68	6.25	8.22	0.01	0.24	—	0.24	0.22	—	0.22	—	1,520	1,520	0.06	0.01	—	1,525
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.14	1.50	< 0.005	0.04	—	0.04	0.04	—	0.04	—	252	252	0.01	< 0.005	—	253
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.51	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.7	83.7	< 0.005	< 0.005	0.27	84.9
Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	53.1	53.1	< 0.005	0.01	0.14	55.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.03	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	71.3	71.3	< 0.005	< 0.005	0.01	72.2
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	< 0.005	—	53.2	53.2	< 0.005	0.01	< 0.005	55.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.01	0.02	0.23	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.3	48.3	< 0.005	< 0.005	0.07	48.9
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.7	33.7	< 0.005	< 0.005	0.04	35.1
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.00	8.00	< 0.005	< 0.005	0.01	8.10
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.58	5.58	< 0.005	< 0.005	0.01	5.82
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.08	0.75	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.02	11.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	7.12	9.94	0.01	0.32	—	0.32	0.29	—	0.29	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.39	0.54	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.08	0.75	0.00	0.00	0.20	0.20	0.00	0.05	0.05	—	186	186	< 0.005	0.01	0.02	188
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.02	11.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.80	1.80	< 0.005	< 0.005	< 0.005	1.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	9.76	9.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.14	3.14	< 0.005	< 0.005	—	3.15
Architectural Coatings	0.23	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.52	0.52	< 0.005	< 0.005	—	0.52
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	< 0.005	14.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.14. Architectural Coating (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.86	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134

Architectural Coating	9.76	9.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.14	3.14	< 0.005	< 0.005	—	3.15
Architectural Coatings	0.23	0.23	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.52	0.52	< 0.005	< 0.005	—	0.52
Architectural Coatings	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	< 0.005	14.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.36	0.36	< 0.005	< 0.005	< 0.005	0.36
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.06	0.06	< 0.005	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	9.76	9.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.44	4.44	< 0.005	< 0.005	—	4.46
Architectural Coatings	0.32	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.74	0.74	< 0.005	< 0.005	—	0.74
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	< 0.005	14.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.16. Architectural Coating (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	9.76	9.76	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.44	4.44	< 0.005	< 0.005	—	4.46
Architectural Coatings	0.32	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.74	0.74	< 0.005	< 0.005	—	0.74
Architectural Coatings	0.06	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	< 0.005	14.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.08	0.08	< 0.005	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Total	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Total	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256
Total	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Total	0.67	0.62	0.66	6.80	0.02	0.01	1.35	1.36	0.01	0.34	0.35	—	1,672	1,672	0.06	0.07	5.14	1,700
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Total	0.56	0.50	0.72	4.54	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,485	1,485	0.06	0.07	0.13	1,509
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256
Total	0.10	0.09	0.12	0.93	< 0.005	< 0.005	0.24	0.24	< 0.005	0.06	0.06	—	252	252	0.01	0.01	0.36	256

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Total	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Total	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	36.1	36.1	< 0.005	< 0.005	—	36.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	36.1	36.1	< 0.005	< 0.005	—	36.2

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Total	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Total	—	—	—	—	—	—	—	—	—	—	—	—	218	218	0.01	< 0.005	—	219
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	36.1	36.1	< 0.005	< 0.005	—	36.2
Total	—	—	—	—	—	—	—	—	—	—	—	—	36.1	36.1	< 0.005	< 0.005	—	36.2

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Total	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Total	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	—	30.3
Total	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	—	30.3

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Total	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Total	0.02	0.01	0.14	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	182	182	0.02	< 0.005	—	183
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	—	30.3
Total	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	—	30.3

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.67	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.08	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Total	0.81	0.80	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.67	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.72	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20
Total	0.14	0.14	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.67	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.08	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Total	0.81	0.80	0.01	0.91	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.43	2.43	< 0.005	< 0.005	—	2.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.67	0.67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.72	0.72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.12	0.12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coating	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20
Total	0.14	0.14	< 0.005	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.20	0.20	< 0.005	< 0.005	—	0.20

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98
Total	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Total	—	—	—	—	—	—	—	—	—	—	—	1.25	24.7	25.9	0.13	< 0.005	—	30.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98
Total	—	—	—	—	—	—	—	—	—	—	—	0.21	4.08	4.29	0.02	< 0.005	—	4.98

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Total	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Total	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60
Total	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Total	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8

Total	—	—	—	—	—	—	—	—	—	—	—	7.94	0.00	7.94	0.79	0.00	—	27.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60
Total	—	—	—	—	—	—	—	—	—	—	—	1.32	0.00	1.32	0.13	0.00	—	4.60

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04	0.04

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	7/1/2025	7/29/2025	5.00	20.0	—
Site Preparation	Site Preparation	7/30/2025	8/13/2025	5.00	10.0	—
Grading	Grading	8/14/2025	9/25/2025	5.00	30.0	—
Building Construction	Building Construction	9/26/2025	11/20/2026	5.00	300	—
Paving	Paving	11/21/2026	12/19/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	12/20/2026	1/17/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40

Site Preparation	Tractors/Loaders/Back	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Back hoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Back hoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38

Grading	Tractors/Loaders/Back	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Back hoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	5.76	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	1.71	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.15	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	18.5	LDA,LDT1,LDT2
Demolition	Vendor	—	10.2	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—

Site Preparation	Worker	17.5	18.5	LDA,LDT1,LDT2
Site Preparation	Vendor	—	10.2	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	18.5	LDA,LDT1,LDT2
Grading	Vendor	—	10.2	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	5.76	18.5	LDA,LDT1,LDT2
Building Construction	Vendor	1.71	10.2	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	18.5	LDA,LDT1,LDT2
Paving	Vendor	—	10.2	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	1.15	18.5	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	10.2	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	63,180	21,060	0.00	0.00	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	0.18

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.18	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	532	0.03	< 0.005
2026	0.00	532	0.03	< 0.005
2027	0.00	532	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	151	153	137	54,471	1,889	1,909	1,711	681,259

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	151	153	137	54,471	1,889	1,909	1,711	681,259

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
63180	21,060	0.00	0.00	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	149,428	532	0.0330	0.0040	569,029

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	149,428	532	0.0330	0.0040	569,029

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	650,780	4,298,297

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	650,780	4,298,297

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	14.7	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	14.7	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	20.9	annual days of extreme heat
Extreme Precipitation	0.85	annual days with precipitation above 20 mm

Sea Level Rise	—	meters of inundation depth
Wildfire	1.26	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2

Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	88.7
AQ-PM	6.45
AQ-DPM	10.4
Drinking Water	48.5
Lead Risk Housing	15.5
Pesticides	12.6
Toxic Releases	2.00
Traffic	71.1
Effect Indicators	—

CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	8.76
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	22.9
Cardio-vascular	19.9
Low Birth Weights	45.9
Socioeconomic Factor Indicators	—
Education	38.1
Housing	60.9
Linguistic	24.8
Poverty	52.4
Unemployment	52.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	47.69665084
Employed	6.274862056
Median HI	34.1973566
Education	—
Bachelor's or higher	60.87514436
High school enrollment	100
Preschool enrollment	83.27986655
Transportation	—

Auto Access	58.83485179
Active commuting	32.27255229
Social	—
2-parent households	87.34761966
Voting	71.03811113
Neighborhood	—
Alcohol availability	85.0891826
Park access	27.34505325
Retail density	44.12934685
Supermarket access	31.64378288
Tree canopy	18.95290645
Housing	—
Homeownership	53.93301681
Housing habitability	71.28191967
Low-inc homeowner severe housing cost burden	68.00975234
Low-inc renter severe housing cost burden	44.18067496
Uncrowded housing	84.29359682
Health Outcomes	—
Insured adults	32.06723983
Arthritis	0.0
Asthma ER Admissions	85.4
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	42.3

Cognitively Disabled	48.3
Physically Disabled	38.4
Heart Attack ER Admissions	75.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	92.9
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	97.3
Elderly	1.5
English Speaking	79.2
Foreign-born	26.9
Outdoor Workers	71.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	51.4
Traffic Density	35.3
Traffic Access	23.0
Other Indices	—
Hardship	37.1
Other Decision Support	—

2016 Voting	89.4

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	14.0
Healthy Places Index Score for Project Location (b)	47.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	The lot acreage is 19.81 acres
Operations: Hearths	No hearths will be used

APPENDIX B

GENERAL BIOLOGICAL RESOURCES ASSESSMENT

RANCHO MIRAGE, RIVERSIDE COUNTY, CALIFORNIA
(Township 5 South, Range 5 East, Section 2)
APN: 689-090-003, 689-130-004, -005, -012, -014, -017 & 689-140-022

Prepared for:

Horti Caesaris, LLC
9401 Wilshire Blvd., 9th Floor
Beverly Hills, CA 90212

Prepared by:

RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, California 92345
(760) 596-0017

Principal Investigators:
Ryan Hunter, Senior Environmental Scientist/Biologist
Brian Bunyi, Environmental Scientist/Wildlife Biologist

Project: #2023-1187 BA

March 3, 2023

TITLE PAGE

Date Report Written: **March 3, 2024**

Date Field Work Completed: **February 12, 2024**

Report Title: **General Biological Resources Assessment**

Project Location: **Rancho Mirage, California**
APN: 689-090-003,
689-130-004, -005, -012,-014, -017 &
689-140-022

Prepared for: **Horti Caesaris, LLC**
9401 Wilshire Blvd., 9th Floor
Beverly Hills, CA 90212

Principal Investigators: **Ryan Hunter, Senior Environmental Scientist/Biologist**
Brian Bunyi, Environmental Scientist/Wildlife Biologist

Contact Information: **Randall C. Arnold, Jr.**
RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, California 92345
(760) 596-0017
rarnold@rcaassociatesllc.com
www.rcaassociatesllc.com

Ryan D. Hunter
RCA Associates, Inc.
15555 Main Street, #D4-235
Hesperia, CA 92345
(760) 998-9165
rhunter@rcaassociatesllc.com
www.rcaassociatesllc.com

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1.0 INTRODUCTION AND SUMMARY

Biological surveys were conducted on a 19.8-acre parcel (Approximate), located north of the intersection of Mirage Cove Dr. and Peterson Rd. in the City of Rancho Mirage, California (Township 5 South, Range 5 East, Section 2, USGS Cathedral City, California Quadrangle, 1956) (Figures 1 and 2). The property is located in an area zoned for residential usage in Rancho Mirage, California.

As part of the environmental process, California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) data sources were reviewed. Following the data review, surveys were performed on the site on October 4, 2022, during which the biological resources on the site and in the surrounding areas were documented by biologists from RCA Associates, Inc. As part of the surveys, the property and adjoining areas were evaluated for the presence of native habitats which may support populations of sensitive wildlife species. The property was also evaluated for the presence of sensitive habitats including wetlands, vernal pools, riparian habitats, and jurisdictional areas.

Habitat assessments were also conducted for the desert tortoise and burrowing owl. Based on data from USFWS, CDFW, and a search of the California Natural Diversity Database (CNDDB, 2022). Scientific nomenclature for this report is based on the following references: Hickman (1993), Munz (1974), Stebbins (2003), Sibley (2016) and Whitaker (1980).

2.0 EXISTING CONDITIONS

The property is approximately 19.8-acres and is located north of the intersection of Mirage Cove Dr. and Peterson Rd. in the City of Rancho Mirage, California. The site is located in Section 2, Township 5 South, Range 5 East (USGS Cathedral City, CA 7.5-minute quadrangle) (Figures 1 and 2). Vacant land surrounds the property in the north, east and west while a community of homes lines the southern border of the property.

The relatively flat site is approximately 131 meters above sea level and contains no slope. The vegetation community present on site supports a disturbed desert scrub habitat encompassing mainly native plants and some non-native grasses. The site contains a few species of plant which include kelch grass (*Schismus barbatus*), creosote bush (*Larrea tridentata*), Four winged saltbush (*Atriplex canescens*), Asian mustard (*Brassica tournefortii*), Nettle leaved goosefoot (*Chenopodiastrum murale*) and Brittlebush (*Encelia farinosa*). Section 5.0 provides a more detailed discussion of the various plant species observed during the surveys.

The site supports a minimal amount of wildlife, with many of them being birds. Species that were not observed, but are expected to occur on site given their abundance in the surrounding areas include California ground squirrel (*Otospermophilus beecheyi*) and antelope ground squirrel (*Ammospermophilus leucurus*).

Birds observed included common ravens (*Corvus corax*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), Anna's hummingbird (*Calypte anna*), red-tailed hawk (*Buteo jamaicensis*), Northern mockingbird (*Mimus polyglottos*) and rock pigeon (*Columba livia*). Section 5.0 provides a more detailed discussion of the various species observed during the surveys.

No reptiles were observed during the field investigation, however there were a number of reptile tracks along the property and we can assume that they are present in the area. Species that are expected to occur on site include the western whiptail lizard (*Cnemidophorus tigris*) and common side-blotched lizard (*Uta stansburiana*). Table 2 provides a compendium of wildlife species.

There were no observations that indicated that a potential channel is present on the site. It is the opinion of RCA Associates, Inc. that no additional surveys will be required at this time.

In addition, no sensitive habitats (e.g., sensitive species, critical habitats, etc.) have been documented in the immediate area according to the CNDDB (2024) and none were observed during the field investigations.

3.0 METHODOLOGIES

General biological surveys were conducted on February 12, 2024, during which biologists from RCA Associates, Inc. initially walked meandering transects throughout the property. During the surveys, data was collected on the plant and animal species present on the site. All plants and animals detected during the surveys were recorded and are provided in Tables 1 & 2 (Appendix A). The property was also evaluated for the presence of habitats which might support sensitive species. Scientific nomenclature for this report is based on the following references: Hickman (1993), Munz (1974), Stebbins (2003), Sibley (2016) and Whitaker (1980). Following completion of the initial reconnaissance survey, habitat assessments were conducted for the burrowing owl. Weather conditions consisted of wind speeds of 0 to 5 mph, temperatures in the low to mid 70's (°F) (AM), and 0% cloud cover. The applicable methodologies are summarized below.

General Plant and Animal Surveys: Meandering transects were walked on the site and in surrounding areas (i.e., the zone of influence) where accessible at a pace that allowed for careful documentation of the plant and animal species present on the site. All plants observed were identified in the field or sampled and brought back for further identification. Wildlife was identified through visual observations and/or by vocalizations. Habitat assessments were conducted for the burrowing owl. Tables 1 and 2 (Appendix A) provides a comprehensive compendium of the various plant and animal; species observed during the field investigations.

4.0 LITERATURE SEARCH

As part of the environmental process, a search of the California Natural Diversity Database (CNDDB) search was performed. Based on this review, it was determined that sixteen special status species have been documented within the Cathedral City quad of the property. The following tables provide data on each special status species which has been documented in the area.

Table 4-1: Federal and State Listed Species and State Species of Special Concern.
E = Endangered; T = Threatened; SSC = Species of special concern; CNPS = California Native Plant Society; CNDDB = California Natural Diversity Data Base

NAME	STATUS	HABITAT REQUIREMENTS	PRESENCE/ ABSENCE ON PROPERTY
Plant Species			
Within Cathedral City Quadrangle			
Chaparral sand-verbena (*Abronia villosa var. aurita*)	Federal: None State: None CNPS: 1B.1	Desert Scrub	The site supports minimal suitable habitat for the species; and none were observed during field surveys.
Horn's milk-vetch (*Diplacus mohavensis*)	Federal: None State: None CNPS: 1B.1	Alkali Sink, wetland-riparian	Site does not support minimum suitable habitat for the species; and no species were observed during the field survey.
Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*)	Federal: Endangered State: None CNPS: 1B.2	Creosote Bush Scrub	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Arizona spurge (*Euphorbia arizonica*)	Federal: None State: None CNPS: 2B.3	Desert Habitat with compact soils	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Flat-seeded spurge (*Euphorbia platysperma*)	Federal: None State: None CNPS: 1B.2	Creosote Bush Scrub	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Slender cottonheads (*Nemacaulis denudata var. gracilis*)	Federal: None State: None CNPS: 2B.2	Dunes and sandy areas	The site does support minimum suitable habitat for the species; however none were observed during field surveys.

Desert spike-moss (*Selaginella eremophila*)	Federal: None State: None CNPS: 2B.2	Rocky and sandy slopes, in open rock or crevices, on rock or terrestrial.	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Purple stemodia (*Stemodia durantifolia*)	Federal: None State: None CNPS: 2B.1	wetland-riparian	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.

Notes:

Status abbreviations:

CNPS List 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CNPS List 1B: Plants rare, threatened, or endangered in California and elsewhere
CNPS List 2A: Plants presumed extirpated in California, but more common somewhere else
CNPS List 2B: Plants rare, threatened, or endangered in California, but more common somewhere else
CNPS List 3: Plants about which more information is needed - a review list
CNPS List 4: Plants of limited distribution - a watch list

.1 Seriously threatened in California (over 80% of occurrences threatened/ high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened/ moderate degree and immediacy of threat)
.3 No very threatened in California (<20% of occurrences threatened/ low degree and immediacy of threat or no current threats known)

NAME	STATUS	HABITAT REQUIREMENTS	PRESENCE/ ABSENCE ON PROPERTY
Wildlife Species			
Within Cathedral City Quadrangle			
Western yellow bat (*Lasiurus xanthinus*)	Federal: None State: None CDFW: SSC	Riparian woodland	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Burrowing owl (*Athene cunicularia*)	Federal: None State: None CDFW: SSC	Grasslands and desert habitats	The site does not support minimal suitable habitat for the species and no owls or owl sign, or suitable burrows, were observed during field surveys.
Casey's June beetle (Dinacoma caseyi)	Federal: Endangered State: None	Alluvial habitat	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.

Flat-tailed horned lizard (*Phrynosoma mcallii*)	Federal: None State: None CDFW: SSC	Sandy desert hardpan or gravel flats	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Le Conte's thrasher (*Toxostoma lecontei*)	Federal: None State: None CDFW: SSC	Desert scrub	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Coastal California gnatcatcher (*Polioptila californica californica*)	Federal: Threatened State: None CDFW: SSC	Coastal sage scrub	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.
Coachella Valley fringe-toed lizard (*Uma inornate*)	Federal: Threatened State: Endangered	Sandy desert habitat	The site does support minimum suitable habitat for the species; However, none were observed during field surveys.
Palm Springs round-tailed ground squirrel (*Xerospermophilus tereticaudus chlorus*)	Federal: None State: None CDFW: SSC	Desert succulent shrub, desert wash, desert scrub, alkali desert scrub, and levees in cropland habitat.	The site does not support minimum suitable habitat for the species; and none were observed during field surveys.

5.0 RESULTS

5.1 General Biological Resources

The site supports a disturbed desert scrub community which sparsely covers the property (Figure 3). Species present on the site included kelch grass (*Schismus barbatus*), creosote bush (*Larrea tridentata*), Four-winged saltbush (*Atriplex canescens*), Asian mustard (*Brassica tournefortii*), Nettle leaved goosefoot (*Chenopodiastrum murale*) and Brittlebush (*Encelia farinosa*). Table 1 provides a compendium of all plants occurring on the site and/or in the immediate surrounding area.

Birds observed included common ravens (*Corvus corax*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), Anna's hummingbird (*Calypte anna*), red-tailed hawk (*Buteo jamaicensis*), Northern mockingbird (*Mimus polyglottos*) and rock pigeon (*Columba livia*). Section 5.0 provides a more detailed discussion of the various species observed during the surveys. Table 2 provides a complete compendium of wildlife species occurring on site or in the surrounding area.

No mammals were seen during the February 2024 survey. Although the Antelope Ground squirrel (*Ammospermophilus leucurus*) were not present during the field investigation we can assume they are in the area due to current conditions and population distributions. Other wildlife species that may occur on site include desert cottontails (*Sylvilagus audubonii*) and California ground squirrels (*Otospermophilus beecheyi*), and Merriam's kangaroo rats (*Dipodomys merriami*) may also occur on the site given their wide-spread distribution in the region. Tables 1 and 2 (Appendix A) provides a compendium of the various plant and animal species identified during the field investigations and those common to the area. No distinct wildlife corridors were identified on the site or in the immediate area.

No reptiles were observed on site during the February 2024 field investigations. However, some reptiles that may inhabit the site include the Western Whiptail Lizard *(Cnemidophorus tigris)* and Side-blotched lizard *(Uta stansburiana)*.

No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations.

The following are the listed and special status species that have the ability to occur on the project site. It is not a comprehensive list of all the species in the quad. This information has been taken from the California Natural Diversity Database and is using the most current version.

5.2 Federal and State Listed Species

Coachella Valley fringed-toed lizard: The site is located within the documented Coachella Valley fringed-toed lizard range, a state and federal threatened species, according to CNDDB (2024). The property supports minimal suitable habitat for the lizard based on the location of the site in a developed area of Rancho Mirage. No Coachella Valley fringed-toed lizard was observed anywhere within the property boundaries during the February 12, 2024 surveys. The species is not expected to move onto the site in the near future based on the absence of any recent observations in the immediate area, and the presence of busy roadways and developments in the immediate area which may act as barriers to migration.

5.3 Species of Special Concern

Burrowing Owl: The site is located within documented burrowing owl habitat according to CNDDB (2024). No owls were seen on the property during the survey, and minimal suitable habitat was observed. Burrowing owls are not expected to occur on the site due to lack of suitable vegetation and burrows.

Le Conte's thrasher: Le Conte's thrashers have not been recently observed in the area according to CNDDB (2024). Thrashers are not expected to occur on the site due to lack of critical vegetation used by the species, such as catclaw acacia. Thrashers may be very infrequent in the area given the low population levels in the region as well as the lack of any recent sightings according to the CNDDB.

5.4 Jurisdictional Waters and Riparian Habitat

No riparian vegetation (e.g., cottonwoods, willows, etc.) exist on the site. No potential channels were observed on the property and it is the opinion of RCA Associates that no further surveys will be necessary.

5.5 Protected Plants

There were no instances of any federally or state endangered plant species during the field survey conducted on February 12, 2024. The site has been disturbed in the past and development has occurred around most of the neighboring properties. Although the site does contain minimal habitat for the Chapparal sand verbena (*Abronia villosa var. aurita*) and the Slender cottonhead (*Nemacaulis denudata var. gracilis*) which include sandy areas and desert scrub, the species were not observed during the February 2024 field survey.

6.0 IMPACTS AND MITIGATION MEASURES

6.1 General Biological Resources

Future development of the site will impact the general biological resources present on site, because most if not all of the vegetation will be removed during future construction activities. The site is expected to support very few wildlife species which will be impacted by development activities. Those species with limited mobility (i.e., small mammals and reptiles) will experience increases in mortality during the construction phase. However, more mobile species (i.e., birds, large mammals) will be displaced into adjacent areas and will likely experience minimal impacts. Therefore, loss of about 19.8-acres of a relatively disturbed desert scrub habitat is not expected to have a significant cumulative impact on the overall biological resources in the region given the presence of similar habitat throughout the surrounding area. No sensitive habitats (e.g., wetlands, vernal pools, critical habitats for sensitive species, etc.) were observed on the site during the field investigations.

6.2 Federal and State Listed and Species of Special Concern

No federal or State-listed species were observed on the site during the field investigations. In addition, there are no documented observations of these species either on the site or in the immediate area. The site is not expected to support populations of the desert tortoise based on the absence of habitat, suitable burrows, or signs.

A pre-construction burrowing owl survey may be required by CDFW to determine if any owls have moved on to the site since the February 12, 2024 surveys. As stated in CDFW's *Staff Report on Burrowing Owl Mitigation*, the most effective method of completing a pre-construction survey (take avoidance survey) should be performed within 30 days of ground disturbance, followed by a final pre-construction survey within 24 hours of breaking ground.

7.0 CONCLUSIONS AND CONSIDERATIONS

Future development activities include the grading and removal of all vegetation from the 19.8-acre parcel; however, cumulative impacts to the general biological resources (plants and animals) in the surrounding area are expected to be negligible. This assumption is based on the habitat containing scarce vegetation of non-native species. As discussed above, the site does not support any burrowing owls due to the lack of suitable habitat and potential burrows. Joshua trees (a state candidate species) were not observed in the field investigations during February 2024 survey. The following mitigation measures should be considered:

1. Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.
    a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as the desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.
    b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.
2. A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April - June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.

If any sensitive species are observed on the property during future activities, CDFW and USFWS (as applicable) should be contacted to discuss specific mitigation measures which may be required for the individual species. CDFW and USFWS are the only agencies which can grant authorization for the "take" of any sensitive species and can approve the implementation of any applicable mitigation measures.

8.0 BIBLIOGRAPHY

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CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits, presents the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Fieldwork conducted for this assessment was performed by Ryan Hunter and Brian Bunyi. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project.

Date: 3/3/2024 Signed: *Ryan Hunter*

Brian Bunyi

Field Work Performed By: Ryan Hunter
Senior Environmental Scientist/Biologist

Field Work Performed By: Brian Bunyi
Environmental Scientist/Wildlife Biologist

Appendix A

Tables and Figures

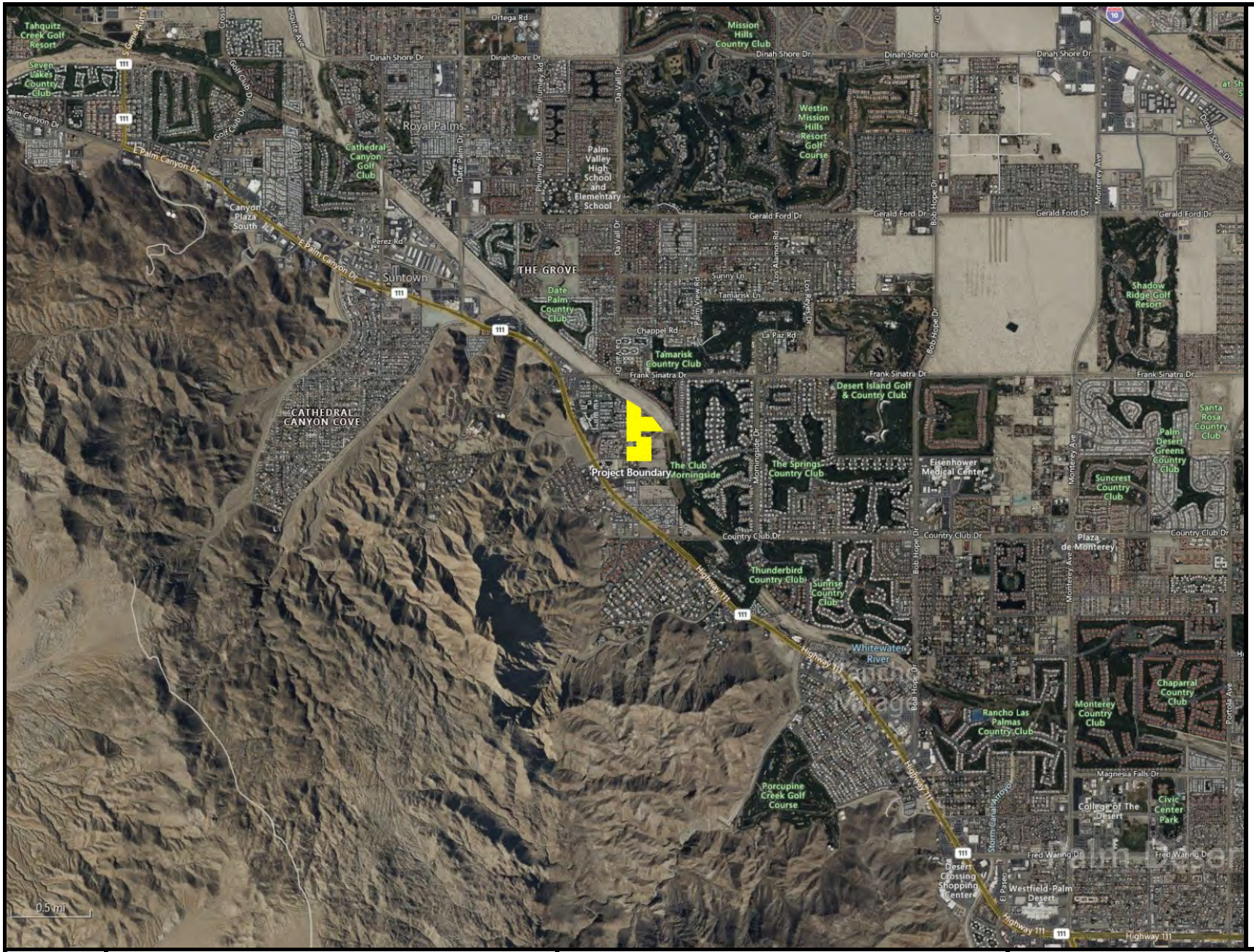


	Figure 1: Regional Exhibit Produced By: RCA Associates Inc.	**North of the Intersection of Mirage Cove Dr. and Peterson Rd. in Rancho Mirage, CA.**	Source: Uinta Software Acreage: 19.8-Acres (Approximately) Project #: 2023-187	RCA ASSOCIATES,INC



	Figure 2: Vicinity Exhibit Produced By: RCA Associates Inc.	**North of the Intersection of Mirage Cove Dr. and Peterson Rd. in Rancho Mirage, CA.**	Source:	Uinta Software	RCA ASSOCIATES,INC
			Acreage:	19.8-Acres (Approximately)	
			Project #:	2023-187	

CENTER OF SITE LOOKING NORTH



CENTER OF SITE LOOKING EAST



FIGURE 3: PHOTOGRAPHS OF SITE

CENTER OF SITE LOOKING SOUTH



CENTER OF SITE LOOKING WEST



FIGURE 3, cont: PHOTOGRAPHS OF SITE

Table 1 - Plants observed on the site and known to occur in the immediate surrounding area.

Common Name	Scientific Name	Location
Asian mustard	*Brassica tournefortii*	On Site and in the surrounding area.
Mexican fan palm	*Washingtonia robusta*	"
Creosote bush	*Larrea tridentata*	"
Four-winged saltbush	*Atriplex canescens*	"
Desert pala fox	*Palafoxia arida var. arida*	"
Athel tamarisk	*Tamarix aphylla*	"
Cheatgrass	*Bromus tectorum*	"
Cheeseweed	*Malva parviflora*	"
Tumbleweed	*Kali tragus var. tragus*	"
Desert Indian wheat	*Plantago ovata*	"
Nettle leaved goosefoot	*Chenopodiastrum murale*	"
Flatspine bur ragweed	*Ambrosia acanthicarpa*	"
Western tansy mustard	*Descurainia pinnata*	"
Jerusalem thorn	*Parkinsonia aculeata*	"
Desert tobacco	*Nicotiana obtusifolia*	"
Common burrobrush	*Ambrosia salsola*	"
Kelch grass	*Schismus barbatus*	"

Note: The above list is not intended to be a comprehensive list of every plant which may occur on the site or in the zone of influence.

Table 2 - Wildlife observed on the site during the field investigations.

Common Name	Scientific Name	Location
Common raven	*Corvus corax*	On-site and in the surrounding area.
House finch	*Carpodacus mexicanus*	"
Rock pigeon	*Columba livia*	"
House sparrow	*Passer domesticus*	"
Northern mockingbird	*Mimus polyglottos*	"
Cassin's kingbird	*Tyrannus vociferans*	"
Mourning Dove	*Zenaida macroura*	"
Anna's hummingbird	*Calypte anna*	"
Red-Tailed Hawk	*Buteo jamaicensis*	"

Note: The above Table is not a comprehensive list of every animal species which may occur in the area, but is a list of those common species which were identified on the site or which have been observed in the region by biologists from RCA Associates, Inc.

REGULATORY CONTEXT

The following provides a summary of federal and state regulatory jurisdiction over biological and wetland resources. Although most of these regulations do not directly apply to the site, given the general lack of sensitive resources, they provide important background information.

Federal Endangered Species Act

The USFWS has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) and its implementing regulations prohibit the take of any fish or wildlife species that is federally listed as threatened or endangered without prior approval pursuant to either Section 7 or Section 10 of the ESA. ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Federal regulation 50CFR17.3 defines the term "harass" as an intentional or negligent act that creates the likelihood of injuring wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, or sheltering (50CFR17.3). Furthermore, federal regulation 50CFR17.3 defines "harm" as an act that either kills or injures a listed species. By definition, "harm" includes habitat modification or degradation that actually kills or injures a listed species by significantly impairing essential behavior patterns such as breeding, spawning, rearing, migrating, feeding, or sheltering (50CFR217.12).

Section10(a) of the ESA establishes a process for obtaining an incidental take permit that authorizes non federal entities to incidentally take federally listed wildlife or fish. Incidental take is defined by ESA as take that is "incidental to, and not the purpose of, the carrying out of another wise lawful activity." Preparation of a habitat conservation plan, generally referred to as an HCP, is required for all Section 10(a) permit applications. The USFWS and National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) have joint authority under the ESA for administering the incidental take program. NOAA Fisheries Service has jurisdiction over anadromous fish species and USFWS has jurisdiction over all other fish and wildlife species.

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any species listed under the ESA, or result in the destruction or adverse modification of its habitat. Federal agencies are also required

to minimize impacts to all listed species resulting from their actions, including issuance or permits or funding. Section 7 requires consideration of the indirect effects of a project, effects on federally listed plants, and effects on critical habitat (ESA requires that the USFWS identify critical habitat to the maximum extent that it is prudent and determinable when a species is listed as threatened or endangered). This consultation results in a Biological Opinion prepared by the USFWS stating whether implementation of the HCP will result in jeopardy to any HCP Covered Species or will adversely modify critical habitat and the measures necessary to avoid or minimize effects to listed species.

Although federally listed animals are legally protected from harm no matter where they occur, section 9 of the ESA provides protection for endangered plants by prohibiting the malicious destruction on federal land and other "take" that violates State law. Protection for plants not living on federal lands is provided by the California Endangered Species Act.

California Endangered Species Act

CDFW has jurisdiction over species listed as threatened or endangered under Section 2080 of the California Fish and Wildlife Code. Section 2080 prohibits the take of a species listed by CDFW as threatened or endangered. The state definition of take is similar to the federal definition, except that Section 2080 does not prohibit indirect harm to listed species by way of habitat modification. To qualify as take under the state ESA, an action must have direct, demonstrable detrimental effect on individuals of the species. Impacts on habitat that may ultimately result in effects on individuals are not considered take under the state ESA but can be considered take under the federal ESA.

Proponents of a project affecting a state-listed species must consult with CDFW and enter into a management agreement and take permit under Section 2081. The state ESA consultation process is similar to the federal process. California ESA does not require preparation of a state biological assessment; the federal biological assessment and the CEQA analysis or any other relevant information can provide the basis for consultation. California ESA requires that CDFW coordinate consultation for joint federally listed and state-listed species to the extent possible; generally, the state opinion for the listed species is brief and references provisions under the federal opinion.

Clean Water Act, Section 404

The COE and the U.S. Environmental Protection Agency regulate the placement of dredged or fill material into "Waters of the United States" under Section 404 of the Clean Water Act. Waters of the United States include lakes, rivers, streams, and their tributaries, and wetlands. Wetlands are defined for regulatory purposes as "areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3, 40 CFR 230.3).

The COE may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits (NWP's) are general permits issued to cover particular fill activities. All NWP's have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each NWP.

Clean Water Act, Section 401

Section 401 of the Clean Water Act requires water quality certification and authorization of placement of dredged or fill material in wetlands and Other Waters of the United States. In accordance with Section 401 of the Clean Water Act, criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. As such, proponents of any new project which may impair water quality as a result of the project are required to create a post construction stormwater management plan to ensure offsite water quality is not degraded. The resulting requirements are used as criteria in granting National Pollution Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Central Valley Regional Water Quality Control Board (RWQCB). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

California Fish and Wildlife Code, Sections 1600-1616

Under the California Fish and Wildlife Code, Sections 1600-1616 CDFW regulates projects that divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake. Proponents of such projects must notify CDFW and enter into a streambed alteration agreement with them.

Section 1602 of the California Fish and Wildlife Code requires a state or local government agency, public utility, or private entity to notify CDFW before it begins a construction project that will: (1) divert, obstruct, or change the natural flow or the bed, bank, channel, or bank of any river, stream, or lake; (2) use materials from a streambed; or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake. Once the notification is filed and determined to be complete, CDFW issues a streambed alteration agreement that contains conditions for construction and operations of the proposed project.

California Fish and Wildlife Code, Section 3503.5

Under the California Fish and Wildlife Code, Section 3503.5, it is unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls). Take would include the disturbance of an active nest resulting in the abandonment or loss of young.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) prohibits the taking, hunting, killing, selling, purchasing, etc. of migratory birds, parts of migratory birds, or their eggs and nests. As used in the MBTA, the term "take" is defined as "to pursue, hunt, shoot, capture, collect, kill, or attempt to pursue, hunt, shoot, capture, collect, or kill, unless the context otherwise requires." Most bird species native to North America are covered by this act.

Sensitive Natural Communities

The California Office of Planning and Research and the Office of Permit Assistance (1986) define project effects that substantially diminish habitat for fish, wildlife, or plants, or that disrupt or divide the physical arrangement of an established community as significant impacts under CEQA.

This definition applies to certain natural communities because of their scarcity and ecological values and because the remaining occurrences are vulnerable to elimination. For this study, the term "sensitive natural community" includes those communities that, if eliminated or substantially degraded, would sustain a significant adverse impact as defined under CEQA. Sensitive natural communities are important ecologically because their degradation and destruction could threaten populations of dependent plant and wildlife species and significantly reduce the regional distribution and viability of the community. If the number and extent of sensitive natural communities continue to diminish, the status of rare, threatened, or endangered species could become more precarious, and populations of common species (i.e., not special status species) could become less viable. Loss of sensitive natural communities also can eliminate or reduce important ecosystem functions, such as water filtration by wetlands and bank stabilization by riparian woodlands for example.

Protected Plants

The California Desert Native Plant Act was passed in 1981 to protect non-listed California desert native plants from unlawful harvesting on both public and privately-owned lands. Harvest, transport, sale, or possession of specific native desert plants is prohibited unless a person has a valid permit. The following plants are under the protection of the California Desert Native Plants Act:

- Dalea spinosa (smoketree)
- All species of the genus Prosopis (mesquites)
- All species of the family Agavaceae (century plants, nolinas, yuccas)
- All species of Cactus
- Creosote Rings, ten feet in diameter or greater
- All Joshua Trees

The project would be required to comply with the County of San Bernardino Desert Native Plant Protection Ordinance. The removal of any trees listed under Section 88.01.060 would be required to comply with Section 88.01.050, which requires the project applicant to apply for a Tree or Plant Removal Permit prior to removal from the project site.

APPENDIX C

CULTURAL RESOURCE ASSESSMENT

16 LOT SUBDIVISION PROJECT ON PETERSON ROAD

Assessor's Parcel Nos. 689-090-003, 689-130-004, -005, -013, -014, -and 017 and 689-140-022

City of Rancho Mirage, Riverside County, California

For Submittal to:

Development Services Department, Planning Division
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, CA 92270

Prepared for:

Horti Caesaris, LLC
9401 Wilshire Blvd, 9th Floor
Beverly Hills, CA 90212

Prepared by:

CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324

Bai "Tom" Tang, Principal Investigator
Michael Hogan, Principal Investigator

March 25, 2024
CRM TECH Contract No. 4085

Title: Cultural Resource Assessment: 16 Lot Subdivision Project on Peterson Road; Assessor's Parcel Nos. 689-090-003, 689-130-004, -005, -013, -014, and -017, and 689-140-022, City of Rancho Mirage, Riverside County, California

Authors: Frank Raslich, Archaeologist/Report Writer
Michael Hogan, Principal Investigator

Consulting Firm: CRM TECH
1016 East Cooley Drive, Suite A/B
Colton, CA 92324
(909) 824-6400

Date: March 25, 2024

For Submittal to: Development Services Department, Planning Division
City of Rancho Mirage
69-825 Highway 111
Rancho Mirage, CA 92270
(760) 328-2266

Prepared for: Konstantinos Patis
Horti Caesaris, LLC
9401 Wilshire Blvd, 9th Floor
Beverly Hills, CA 90212
+30-21-08128242

Project Size: Approximately 19.8 acres

USGS Quadrangle: Cathedral City, Calif., 7.5' quadrangle (Section 2, T5S R5E, San Bernardino Baseline and Meridian)

Keywords: Coachella Valley, western Colorado Desert; Phase I cultural resource assessment; no "historical resources" under CEQA

EXECUTIVE SUMMARY

Between December 2023 and March 2024, at the request of Horti Caesaris, LLC, CRM TECH performed a cultural resources survey on approximately 19.8 acres of undeveloped land in the City of Rancho Mirage, Riverside County, California. The subject property of the study consists of Assessor's Parcel Nos. 689-090-003, 689-130-004, -005, -013, -014, and -017 and 689-140-022, located on both the east and west sides of Peterson Road, north of Mirage Cove Drive, and south of the Whitewater River, in the northwest quarter of Section 2, Township 5 South, Range 5 East, San Bernardino Baseline and Meridian.

The study is part of the environmental review process for a proposed 16-lot subdivision project. The City of Rancho Mirage, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA). The purpose of the study is to provide the City with the necessary information and analysis to determine whether the project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

To identify such resources, CRM TECH conducted a historical/archaeological resources records search, initiated a Native American Sacred Lands File search, contacted pertinent Native American representatives, pursued historical background research, and carried out an intensive-level field survey. Throughout the various avenues of research, this study did not encounter any "historical resources" within or adjacent to the project area. Therefore, CRM TECH recommends to the City of Rancho Mirage a finding of *No Impact* regarding "historical resources."

No further cultural resources investigation is recommended for the project unless development plans undergo such changes as to include areas not covered by this study. However, if buried cultural materials are encountered during any earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

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INTRODUCTION

Between December 2023 and March 2024, at the request of Horti Caesaris, LLC, CRM TECH performed a cultural resources survey on approximately 19.8 acres of undeveloped land in the City of Rancho Mirage, Riverside County, California (Figure 1). The subject property of the study consists of Assessor's Parcel Nos. 689-090-003, 689-130-004, -005, -013, -014, -017 and 689-140-022, located on both the east and west sides of Peterson Road, north of Mirage Cove Drive, and south of the Whitewater River, in the northwest quarter of Section 2, Township 5 South, Range 5 East, San Bernardino Baseline and Meridian (Figures 2, 3).

The study is part of the environmental review process for a proposed 16-lot subdivision project. The City of Rancho Mirage, as the lead agency for the project, required the study in compliance with the California Environmental Quality Act (CEQA; PRC §21000, et seq.). The purpose of the study is to provide the City with the necessary information and analysis to determine whether the project would cause substantial adverse changes to any "historical resources," as defined by CEQA, that may exist in or around the project area.

To identify such resources, CRM TECH conducted a historical/archaeological resources records search, initiated a Native American Sacred Lands File search, contacted pertinent Native American representatives, pursued historical background research, and carried out an intensive-level field survey. The following report is a complete account of the methods, results, and final conclusion of the study. Personnel who participated in the study are named in the appropriate sections below, and their qualifications are provided in Appendix 1.

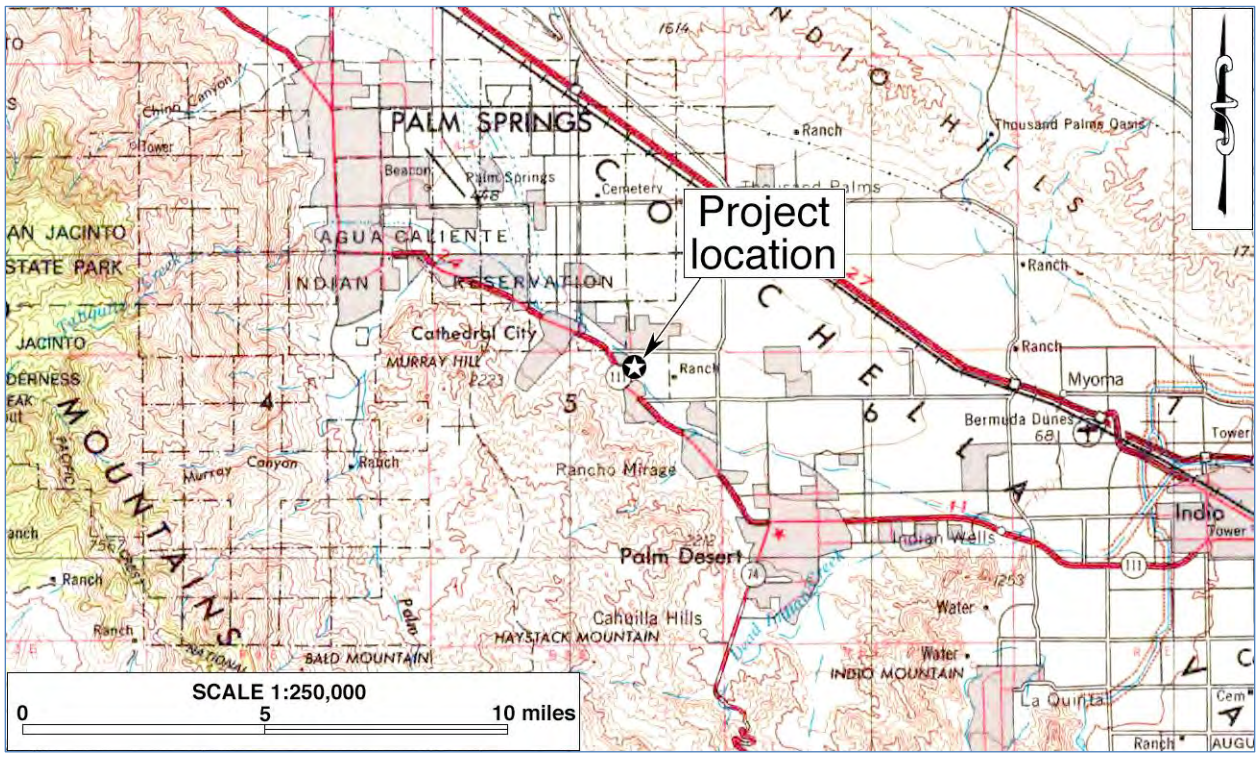


Figure 1. The project vicinity. (Based on the USGS Santa Ana, Calif., quadrangle [USGS 1979])

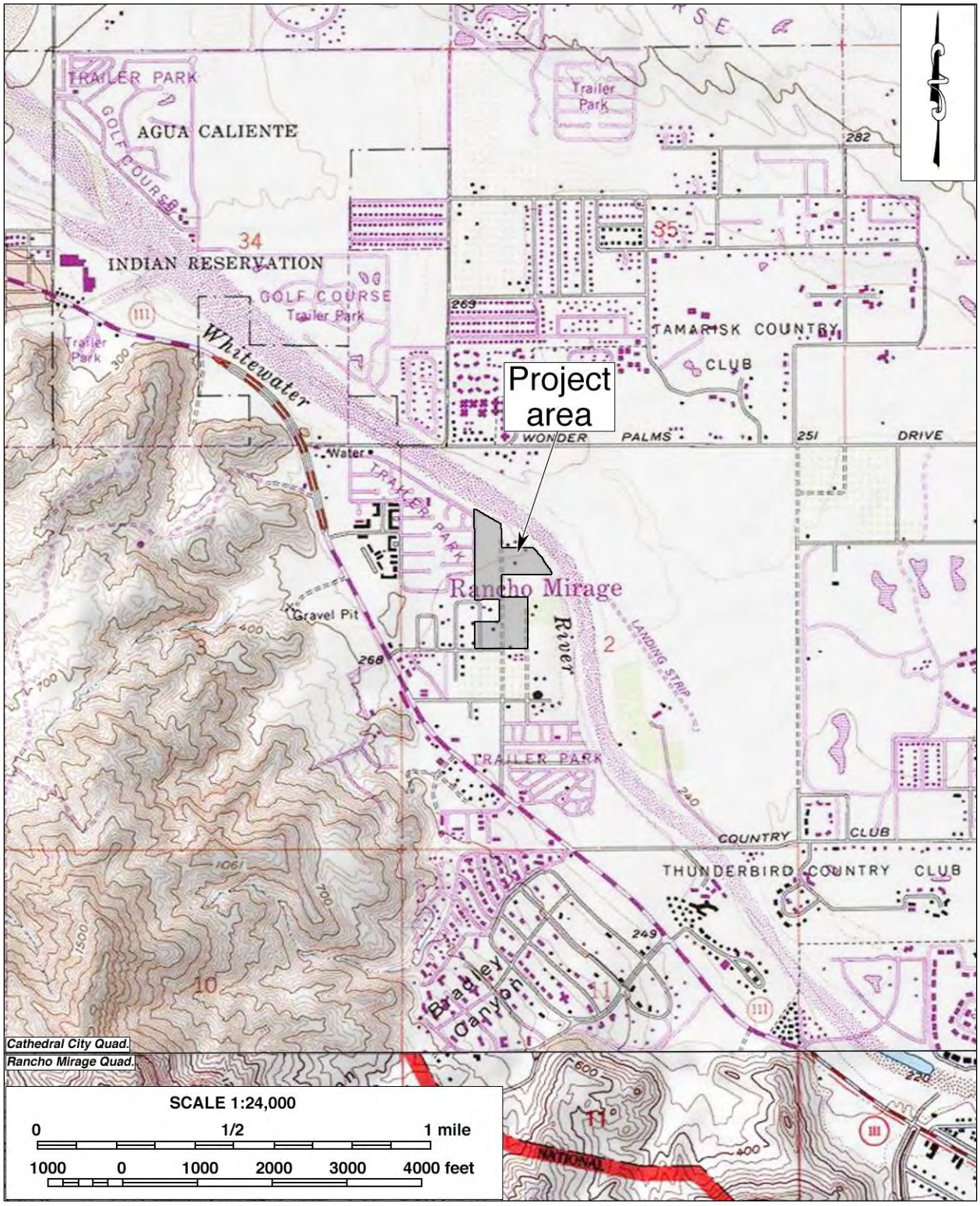


Figure 2. The project area and vicinity. (Based on the USGS Cathedral City, Calif., 7.5' quadrangle [USGS 1981])



Figure 3. A recent satellite image showing the project area. (Based on Google Earth imagery)

SETTING

CURRENT NATURAL SETTING

The City of Rancho Mirage is located in the heart of the Coachella Valley, a northwest-southeast trending desert valley that constitutes the western end of the Colorado Desert. Dictated by this geographic setting, the climate and environment of the region are typical of the southern California desert country, marked by extremes in temperature and aridity. Temperatures in the region reach over 120 degrees Fahrenheit in summer, and dip to freezing in winter. Average annual precipitation is less than five inches, and the average annual evaporation rate exceeds three feet.

The project location is in the City of Rancho Mirage, in a rapidly urbanizing area near Highway 111. The property is surrounded by residential neighborhoods of relatively recent vintages to the west, the Whitewater River on the north and east, and residential developments to the south. The terrain in the project area is generally level, with elevations ranging approximately from 313 to 330 feet above mean sea level. The surface soil is composed of light olive gray fine sand.

The project location is within what would be the California Creosote Bush Scrub plant community; however, the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses (Figure 4).



Figure 4. Overview of the current natural setting of the project area. (January 19, 2024; view to the east)

CULTURAL SETTING

Prehistoric Context

Numerous investigations on the history of cultural development in southern California have led researchers to propose a number of cultural chronologies for the desert regions. A specific cultural sequence for the Colorado Desert was offered by Schaefer (1994) on the basis of the many archaeological studies conducted in the area. The earliest time period identified is the Paleoindian (ca. 8,000 to 10,000-12,000 years ago), when "small, mobile bands" of hunters and gatherers, who relied on a variety of small and large game animals as well as wild plants for subsistence, roamed the region (Schaefer 1994:63). These small groups settled "on mesas and terraces overlooking larger washes" (Schaefer 1994:64). The artifact assemblage of that period typically consists of very simple stone tools, "cleared circles, rock rings, [and] some geoglyph types" (Schaefer 1994:64).

The Early Archaic Period follows and dates to ca. 8,000 to 4,000 years ago. It appears that a decrease in population density occurred at this time and that the indigenous groups of the area relied more on foraging than hunting. Very few archaeological remains have been identified to this time period. The ensuing Late Archaic Period (ca. 4,000 to 1,500 years ago) is characterized by continued low population densities and groups of "flexible" sizes that settled near available seasonal food resources and relied on "opportunistic" hunting of game animals. Stone grinding implements for food processing were prominent during this time period.

The most recent period in Schaefer's scheme, the Late Prehistoric, dates from ca. 1,500 years ago to the time of the Spanish missions and saw the continuation of the seasonal settlement pattern. Peoples of the Late Prehistoric Period were associated with the Patayan cultural pattern and relied more heavily on the availability of seasonal "wild plants and animal resources" (Schaefer 1994:66). It was during this period that ceramics and the bow and arrow were introduced into the region.

The shores of Holocene Lake Cahuilla, during times of its presence, attracted much settlement and resource procurement activities. In times of the lake's desiccation and absence, according to Schaefer (1994:66), the Native people moved away from its receding shores towards rivers, streams, and mountains. Numerous archaeological sites dating to the last high stand of Holocene Lake Cahuilla, roughly between 1600 and 1700 A.D., have been identified along its former shoreline. Testing and mitigative excavations at these sites have recovered brown and buff ware ceramics, a variety of stone grinding tools and projectile point types, ornaments, and cremation remains.

Ethnohistoric Context

The Coachella Valley is a historical center of Native American settlement, where U.S. surveyors noted large numbers of Indian villages and *rancherías*, occupied by the Cahuilla people, in the mid-19th century. The origin of the name "Cahuilla" is unclear, but may originate from their own word *káwiya*, meaning master or boss (Bean 1978). The Takic-speaking Cahuilla are generally divided by anthropologists into three groups, according to their geographic setting: the Pass Cahuilla of the San Gorgonio Pass-Palm Springs area, the Mountain Cahuilla of the San Jacinto and Santa Rosa Mountains and the Cahuilla Valley, and the Desert Cahuilla of the eastern Coachella Valley. The

basic written sources on Cahuilla culture and history include Kroeber (1925), Strong (1929), and Bean (1978), based on information provided by such Cahuilla informants as Juan Siva, Francisco Patencio, Katherine Siva Saubel, and Mariano Saubel. The following ethnohistoric discussion is based primarily on these sources.

The Cahuilla did not have a single name that referred to an all-inclusive tribal affiliation. Instead, membership was in terms of lineages or clans. Each lineage or clan belonged to one of two main divisions of the people, known as moieties. Their moieties were named for the Wildcat, or *Tuktum,* and Coyote*,* or *Istam*. Members of clans in one moiety had to marry into clans from the other moiety. Individual clans had villages, or central places, and territories they called their own, for purposes of hunting game, and gathering raw materials for food, medicine, ritual, or tool use. They interacted with other clans through trade, intermarriage, and ceremonies.

Cahuilla subsistence was defined by the surrounding landscape and primarily based on the hunting and gathering of wild and cultivated foods, exploiting nearly all of the resources available in a highly developed seasonal mobility system. They were adapted to the arid conditions of the desert floor, the lacustral cycles of Holocene Lake Cahuilla, and the environments of the nearby mountains. When the lake was full, or nearly full, the Cahuilla would take advantage of the resources presented by the body of fresh water, building elaborate stone fish traps. Once the lake had desiccated, they relied on the available terrestrial resources. The cooler temperatures and resources available at higher elevations in the nearby mountains were also taken advantage of.

The Cahuilla diet included seeds, roots, wild fruits and berries, acorns, wild onions, piñon nuts, and mesquite and screw beans. Medicinal plants such as creosote, California sagebrush, yerba buena and elderberry were typically cultivated near villages (Bean and Saubel 1972). Common game animals included deer, antelope, big horn sheep, rabbits, wood rats and, when Holocene Lake Cahuilla was present, fish and waterfowl. The Cahuilla hunted with throwing sticks, clubs, nets, traps, and snares, as well as bows and arrow (Bean 1978; CSRI 2002). Common tools included manos and metates, mortars and pestles, hammerstones, fire drills, awls, arrow-straighteners, and stone knives and scrapers. These lithic tools were made from locally sourced material as well as materials procured through trade or travel. They also used wood, horn, and bone spoons and stirrers; baskets for winnowing, leaching, grinding, transporting, parching, storing, and cooking; and pottery vessels for carrying water, storage, cooking, and serving food and drink (Bean 1978; CSRI 2002).

As the landscape defined their subsistence practices, the tending and cultivation practices of the Cahuilla helped shape the landscape. Biological studies have recently found evidence that the fan palms found in the Coachella Valley and throughout the southeastern California desert (*Washingtonia filifera*) may not be relics from a paleo-tropical environment, but instead a relatively recent addition brought to the area and cultivated by native populations (Anderson 2005). The planting of palms by the Cahuilla is well-documented, as is their enhancement of palm stands through the practice of controlled burning (Anderson 2005; Bean and Saubel 1972). Burning palm stands would increase fruit yield dramatically by eliminating pests such as the palm borer beetle, date scales, and spider mites (Bean and Saubel 1972). It also prevented out-of-control wildfires by eliminating dead undergrowth before it accumulated to dangerous levels. The Cahuilla also burned stands of chia to produce higher yields, and deergrass to yield straighter, more abundant stalks for basketry (Bean and Saubel 1972; Anderson 2005).

Population data prior to European contact is almost impossible to obtain, but estimates range from 3,600 to as high as 10,000 persons covering a territory of over 2,400 square miles. During the 19th century, the Cahuilla population was decimated as a result of European diseases, most notably smallpox, for which the Native peoples had no immunity. Today, Native Americans of Pass or Desert Cahuilla heritage are mostly affiliated with one or more of the Indian reservations in and near the Coachella Valley, including Agua Caliente, Morongo, Cabazon, Torres Martinez, and Augustine. There has been a resurgence of traditional ceremonies in recent years, and the language, songs, and stories are now being taught to the youngest generations.

Historic Context

In 1823-1825, José Romero, José Maria Estudillo, and Romualdo Pacheco became the first noted European explorers to travel through the Coachella Valley when they led a series of expeditions in search of a route to Yuma (Johnston 1987:92-95). Due to its harsh environment, few non-Indians ventured into the desert valley during the Mexican and early American periods, except those who traveled along the established trails. The most important of these trails was the Cocomaricopa Trail, an ancient Indian trading route that was "discovered" in 1862 by William David Bradshaw and known after that as the Bradshaw Trail (Gunther 1984:71; Ross 1992:25). In much of the Coachella Valley, this historic wagon road traversed a similar course to that of present-day State Route 111. During the 1860s-1870s, the Bradshaw Trail served as the main thoroughfare between coastal southern California and the Colorado River, until the completion of the Southern Pacific Railroad in 1876-1877 brought an end to its heyday (Johnston 1987:185).

Non-Indian settlement in the Coachella Valley began in the 1870s with the establishment of railroad stations along the Southern Pacific Railroad and spread further in the 1880s after public land was opened for claims under the Homestead Act, the Desert Land Act, and other federal land laws (Laflin 1998:35-36; Robinson 1948:169-171). Farming became the dominant economic activity in the valley thanks to the development of underground water sources, often in the form of artesian wells. Around the turn of the century, the date palm was introduced into the Coachella Valley, and by the late 1910s dates were the main agricultural crop and the tree an iconic image celebrating the region as the "Arabia of America" (Shields Date Gardens 1957). Then, starting in the 1920s, a new industry featuring equestrian camps, resorts, hotels, and eventually country clubs began to spread throughout the Coachella Valley, transforming it into southern California's premier winter retreat.

In the Rancho Mirage area, the first notable settlement activities occurred in the 1910s-1920s, when several date ranches were established in the present-day city boundary (Love and Tang 1996:7). In 1924, R.P. "Bert" Davie and E.E. McIntyre subdivided the Rancho Rio del Sol Estates around today's Clancy Lane, creating a small community nicknamed "Little Santa Monica" (Love and Tang 1996:8). Ten years later, Louis Blankenhorn and Laurence Macomber began a new subdivision at the mouth of Magnesia Spring Canyon, and for the first time bestowed the name Rancho Mirage on the community (Love and Tang 1996:8). After the end of WWII, Rancho Mirage embarked on a period of rapid growth. With the development of the Thunderbird Country Club and the Tamarisk Country Club in 1951-1952, Rancho Mirage set the trend in the post-WWII boom among the five cove communities along Highway 111 (Love and Tang 1996:8-9). This trend has continued into the present and has given rise to the City of Rancho Mirage's popular reputation as the "country club city."

RESEARCH METHODS

RECORDS SEARCH

On January 9, 2024, CRM TECH archaeologist Nina Gallardo completed the historical/ archaeological resources records search for this study at the Eastern Information Center (EIC) of the California Historical Resources Information System. Located on the campus of the University of California, Riverside, the EIC is the official cultural resource records repository for the County of Riverside. The purpose of the records search was to compile a complete inventory of previously identified cultural resources and existing cultural resources reports within a one-mile radius of the project location. Previously identified cultural resources include properties designated as California Historical Landmarks, Points of Historical Interest, or Riverside County Historic Landmarks, as well as those listed in the National Register of Historic Places, the California Register of Historical Resources, or the California Historical Resources Inventory.

NATIVE AMERICAN PARTICIPATION

On December 21, 2023, CRM TECH submitted a written request to the State of California Native American Heritage Commission (NAHC) for a records search in the commission's Sacred Lands File. In the meantime, CRM TECH also contacted the nearby Agua Caliente Band of Cahuilla Indians (ACBCI) for additional information on potential Native American cultural resources in the project vicinity and to arrange for tribal participation in the upcoming archaeological field survey. The responses from the NAHC and the ACBCI are summarized below and attached to this report in Appendix 2.

HISTORICAL BACKGROUND RESEARCH

Historical background research for this study was conducted by CRM TECH Archaeologist Frank Raslich. In addition to published literature in local and regional history, sources consulted during the research included U.S. General Land Office (GLO) land survey plat maps dated 1856, United States Geological Survey (USGS) topographic maps dated 1904-1988, and aerial/satellite photographs taken in 1959-2023. The historical maps are available at the websites of the U.S. Bureau of Land Management and the USGS, and the aerial/satellite photographs are available at the website of Nationwide Environmental Title Research (NETR) Online and through the Google Earth software.

FIELD SURVEY

On January 19, 2024, CRM TECH archaeologists Michael D. Richards and Malika Mobley carried out the field survey of the project area with the assistance of ACBCI Cultural Resources Analyst Claritsa Duarte from the Tribal Historic Preservation Office. The survey was conducted at an intensive level by walking a series of parallel north-south transects at 15-meter (approximately 50-foot) intervals. In this way, the entire project area was systematically and carefully examined for any evidence of human activities dating to the prehistoric or historic period (i.e., 50 years or older). Ground visibility was fair (~50 percent) in areas where there were low-lying grasses but excellent (~90 percent) where there was little to no vegetation.

RESULTS AND FINDINGS

RECORDS SEARCH

According to EIC records, the project area had been surveyed for cultural resources once prior to this study (RI-08506 in Figure 5; Sander 2010). No cultural resources have been recorded on or adjacent to the property, however. Within the one-mile scope of the records search, EIC records identified a total of 30 previous studies completed on various tracts of land and linear features between 1979 and 2016 (Figure 5).

As a result of these and other similar studies in the vicinity, one historic-period site and one prehistoric-period site were previously recorded within the scope of the records search but outside the current project area. The historic-period site (33-005513) was recorded as the Peterson Ranch, a single wood frame house ca. 1930s (Wagner 1982). The prehistoric-period site (33-000628/CA-RIV-628T) consists of a trail segment and several stone cairns (Banks 1979; Parr and Arkush 1988; Bissell 2000). These previously recorded cultural resources were found more than a quarter mile from the project location. As such, none of them requires further consideration during this study.

NATIVE AMERICAN PARTICIPATION

In response to CRM TECH's inquiry, the NAHC reported in a letter dated January 18, 2024, that the Sacred Lands File identified no Native American cultural resources in the project vicinity but recommended contacting local Native American groups for further information. For that purpose, the NAHC provided a list of potential contacts in the region. The NAHC's reply is attached to this report in Appendix 2 for reference by the City of Rancho Mirage in future government-to-government consultations, if necessary.

As mentioned above, the ACBCI, which is the nearest tribe to the project location, participated in the archaeological field survey for this study on January 19, 2024. In a letter dated December 26, 2023, Xitlaly Madrigal, Cultural Resources Analyst with the ACBCI Tribal Historic Preservation Office, identified the project location as a part of the tribe's Traditional Use Area. Therefore, the ACBCI requested copies of all cultural resources documentation generated for this project for review by the Tribal Historic Preservation Office as well as the presence of an ACBCI Cultural Resource Monitor (see App. 2).

HISTORICAL BACKGROUND RESEARCH

Historical sources consulted for this study indicate that the entire project area was unsettled and undeveloped until the mid-20th century (Figures 6-9). Between the 1850s and the 1930s, no human-made features of any kind were noted within or adjacent to the project area despite its location near the Southern Pacific Railroad (built in the 1870s), U.S. Highway 60/70/99 (built prior to the 1920s), and two other major transportation arteries located approximately two miles to the north (Figures 6-8). By the 1940s, Rio del Sol Road, the forerunner of present-day Bob Hope Drive, had been completed near the project vicinity along with several date gardens and ranches and a structure was present in the southern part of the project area (Figure 9).

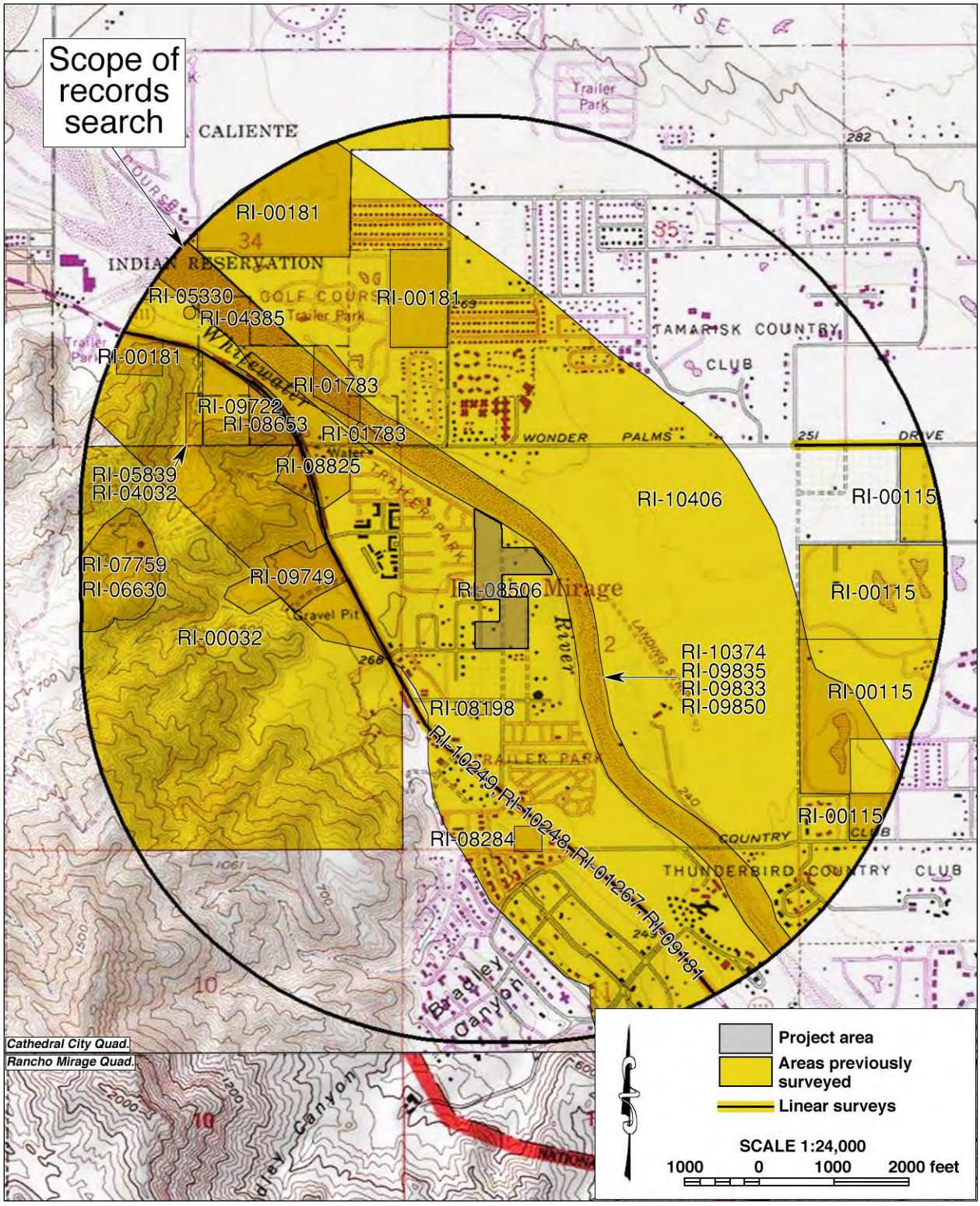


Figure 5. Previous cultural resources studies in the vicinity of the project area, listed by EIC file number. Locations of known historical/archaeological resources are not shown as a protective measure.

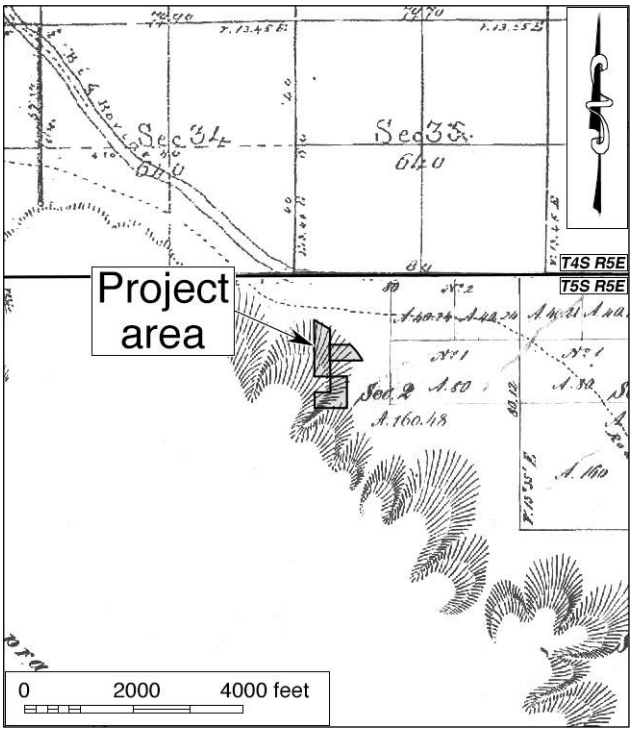


Figure 6. The project area and vicinity in 1855-1856. (Source: GLO 1856a,b)

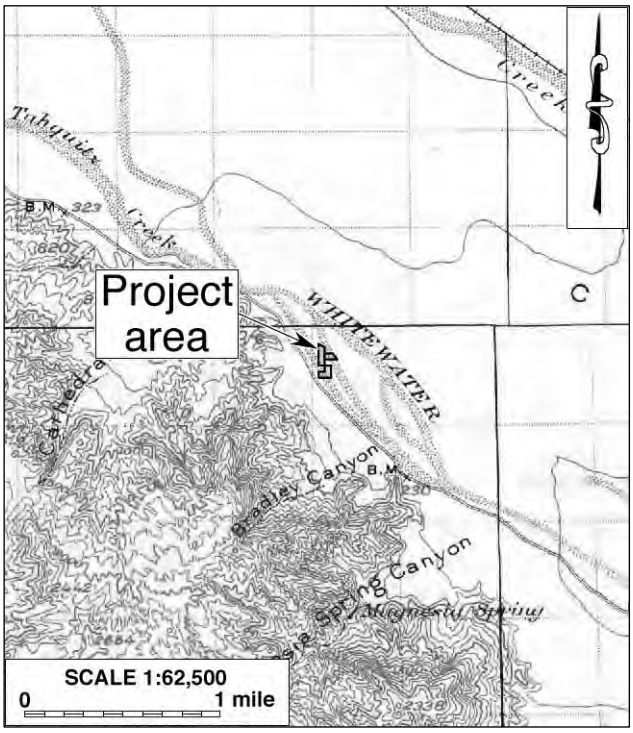


Figure 7. The project area and vicinity in 1901. (Source: USGS 1904)

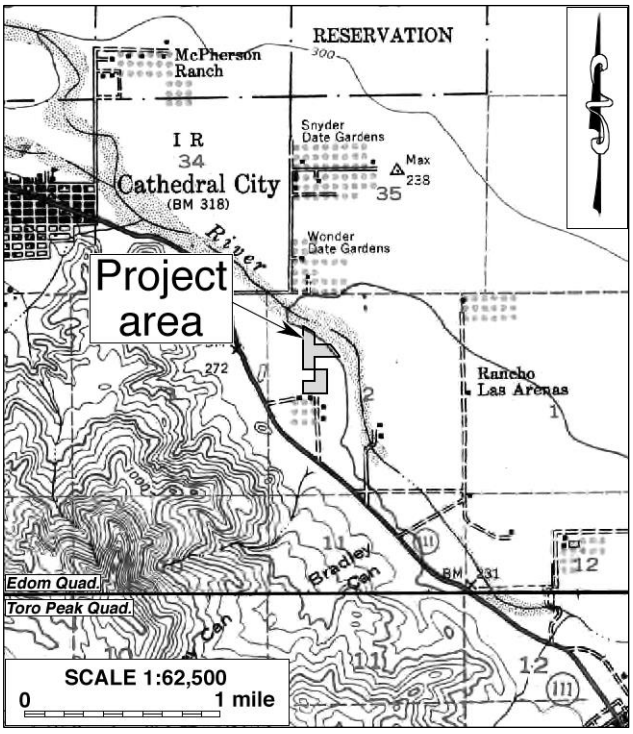


Figure 8. The project area and vicinity in 1941. (Source: USGS 1941a, b)

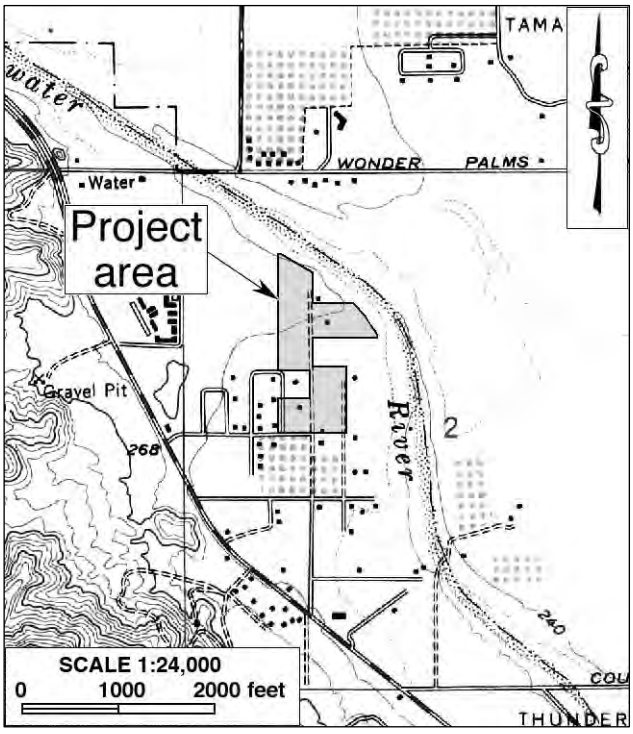


Figure 9. The project area and vicinity in 1956-1958. (Source: USGS 1958)

By 1957, roads and housing appeared around and within the project area (Figure 9; NETR Online 1972). To the south of the project location, Gerald Ford Drive was first laid out between 1979 and 1984 and subsequently became a paved road by 1996, which ushered in a period of rapid urban growth in the surrounding area (NETR Online 1977-1996). The residential neighborhoods to the north and the south of the project location and the commercial properties to the west were all developed since then (NETR Online 1996-2020; Google Earth 1996-2023). The project area was not involved in any of these nearby developments. The structures in the southern part of the project area appears to have been removed after 2005 but before 2009 (NETR Online 1996-2020; Google Earth 1996-2023). The rest of the study area, however, has remained undeveloped and largely unused to the present time (NETR Online 1996-2020; Google Earth 1996-2023).

FIELD SURVEY

The field survey of the project area produced completely negative results for any potential "historical resources," and no buildings, structures, objects, sites, features, or artifacts more than 50 years of age were encountered within the project boundaries. The entirety of the project area has been disturbed in the past, with all native vegetation being removed. Previous modern development and demolition have impacted the ground surface. Modern debris is comprised of milled lumber fragments, PVC pipe, chain fencing, broken glass bottle fragments, a few steel cans, and paper and building material refuse. No evidence of the structures previously located in the southern portion of the project area were observed. There are residential developments, a paved road, fencing along the Whitewater drainage, and utility poles, adjacent to the project area, but all of these items are modern in origin and, therefore, none of them are of any historical/archaeological interest.

DISCUSSION

The purpose of this study is to identify any cultural resources within the project area and to assist the City of Rancho Mirage in determining whether such resources meet the official definition of "historical resources," as provided in the California Public Resources Code, in particular CEQA. According to PRC §5020.1(j), "'historical resource' includes, but is not limited to, any object, building, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California."

More specifically, CEQA guidelines state that the term "historical resources" applies to any such resources listed in or determined to be eligible for listing in the California Register of Historical Resources, included in a local register of historical resources, or determined to be historically significant by the lead agency (Title 14 CCR §15064.5(a)(1)-(3)). Regarding the proper criteria for the evaluation of historical significance, CEQA guidelines mandate that "generally a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" (Title 14 CCR §15064.5(a)(3)). A resource may be listed in the California Register if it meets any of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
(4) Has yielded, or may be likely to yield, information important in prehistory or history. (PRC §5024.1(c))

In summary of the research results presented above, no potential "historical resources" were previously recorded within or adjacent to the project area, and none was found during the present survey. In addition, Native American input during this study identified no properties of traditional cultural value in the project vicinity. Based on these findings, and considering the criteria listed above, the present report concludes that *no historical resources exist within or adjacent to the project area*. Therefore, CRM TECH recommends to the City of Rancho Mirage a finding of *No Impact* regarding "historical resources."

CONCLUSIONS AND RECOMMENDATIONS

CEQA establishes that a project that may cause a substantial adverse change in the significance of a "historical resource" is a project that may have a significant effect on the environment (PRC §21084.1). "Substantial adverse change," according to PRC §5020.1(q), "means demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired." As stated above, no "historical resources," as defined by CEQA, were encountered throughout the course of this study. Therefore, CRM TECH presents the following recommendations to the City of Rancho Mirage:

- The proposed project will not cause a substantial adverse change to any known "historical resources."
- No further cultural resources investigation is necessary for the project unless development plans undergo such changes as to include areas not covered by this study.
- If buried cultural materials are discovered during any earth-moving operations associated with the project, all work in that area should be halted or diverted until a qualified archaeologist can evaluate the nature and significance of the finds.

REFERENCES

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GLO (General Land Office, U.S. Department of the Interior)
1856a Plat map: Township No. IV South Range No. V East, San Bernardino Meridian; surveyed in 1855-1856.
1856b Plat map: Township No. V South Range No. V East, San Bernardino Meridian; surveyed in 1855-1856.

Google Earth
1996-2023 Aerial/satellite photographs of the project vicinity; taken in 1996, 2002, 2004-2006, 2009, 2011-2013, 2015-2019, and 2021-2023. Available through the Google Earth software.

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1984 *Riverside County, California, Place Names: Their Origins and Their Stories*. J.D. Gunther, Riverside.

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1998 *Coachella Valley California: A Pictorial History.* The Donning Company, Virginia Beach, Virginia.

Love, Bruce, and Bai "Tom" Tang
1996 Cultural Resources Report: Rancho Mirage General Plan, City of Rancho Mirage, Riverside County, California. On File, Eastern Information Center, University of California, Riverside.

NETR (Nationwide Environmental Title Research) Online
1959-2020 Aerial/satellite photographs of the project vicinity; taken in 1959, 1972, 1977, 1979, 1984, 1996, 2002, 2005, 2009, 2010, 2012, 2014, 2016, 2018, and 2020. http://www.historicaerials.com.

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1988 Site Record Update for Site 33-000628 (CA-RIV-628T). On File, Eastern Information Center, University of California, Riverside.

Robinson, W.W.
1948 *Land in California.* University of California Press, Berkeley.

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1992 *Gold Road to La Paz: An Interpretive Guide to the Bradshaw Trail*. Tales of the Mojave Road Publishing Company, Essex, California.

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2010 A Phase I Cultural Resources Inventory for APN 689-090-003, 689-130-004, 689-130-005,689-130-013, 689-130-014, 689-130-017, 689-130-018, and 689-140-022 Comprising Approximately 20 Acres Rancho Mirage, Riverside County, California. On file at Eastern Information Center.

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1994 The Challenge of Archaeological Research in the Colorado Desert: Recent Approaches and Discoveries. *Journal of California and Great Basin Anthropology* 16(1):60-80.

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1957 *Coachella Valley Desert Trails and the Romance and Sex Life of the Date*. Shields Date Gardens, Indio.

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USGS (United States Geological Survey, U.S. Department of the Interior)
1904 Map: Indio, Calif. (30', 1:125,000); surveyed in 1901.
1941a Map: Edom, Calif. (15', 1:62,500); aerial photographs taken in 1941.
1941b Map: Toro Peak, Calif. (15', 1:62,500); aerial photographs taken in 1941.
1958 Map: Cathedral City, Calif. (7.5', 1:24,000); aerial photographs in 1956.
1979 Map: Santa Ana, Calif. (1:250,000); 1959 edition revised.
1981 Map: Cathedral City, Calif. (7.5', 1:24,000); 1958 edition photorevised in 1978.
1988 Map: Rancho Mirage, Calif. (7.5', 1:24,000); 1957 edition photorevised in 1984.

Wagner, Jim
1982 Site Record for Site 33-005513. On File, Eastern Information Center, University of California, Riverside.

APPENDIX 1:
PERSONNEL QUALIFICATIONS

FRANK J. RASLICH, M.A.
Project Archaeologist/Report Writer

Education

2016-	Ph.D. candidate, Michigan State University, East Lansing.
2010	M.A., Anthropology, Michigan State University, East Lansing.
2005	B.A., Anthropology, University of Michigan, Flint.
2019	Grant and Research Proposal Writing for Archaeologists; Society for American Archaeology online seminar.
2014	Bruker Industries Tracer S1800 pXRF Training; presented by Dr. Bruce Kaiser, Bruker Scientific.

Professional Experience

2022-	Project Archaeologist/Report Writer, CRM TECH, Colton, California.
2022	Archaeological Monitor, Agua Caliente Band of Cahuilla Indians, Palm Springs, California.
2014-2022	Board of Directors, Ziibiwing Center of Anishinabe Culture and Lifeways, Saginaw Chippewa Indian Tribe of Michigan.
2008-2021	Archaeological Consultant, Saginaw Chippewa Indian Tribe of Michigan.
2019	Archaeologist, Sault Tribe of Chippewa Indians and Little Traverse Bay Band of Odawa Indians.
2016-2018	Adjunct Lecturer, Michigan State University, East Lansing.
2017-2018	Adjunct Lecturer, University of Michigan, Flint.
2009-2017	Teaching Assistant, Michigan State University, East Lansing.
2008-2014	Research Assistant, Intellectual Property Issues in Cultural Heritage, Simon Fraser University, British Columbia, Canada.
2010-2013	Research Assistant, Michigan State University, East Lansing.
2009-2011	Archaeologist/Crew Chief, Saginaw Chippewa Indian Tribe of Michigan.

Publications

2017 Preliminary Results of a Handheld X-Ray Fluorescence (pXRF) Analysis on a Marble Head Sarcophagus Sculpture from the Collection of the Kresge Art Center, Michigan State University. Submitted to Jon M. Frey, Department of Art, Art History, and Design, Michigan State University, East Lansing.

2013 Geochemical Analysis of the Dickenson Group of the Upper Peninsula, Michigan: A study of an Accreted Terrane of the Superior Province. Geological Society of America *Abstracts with Programs* 45:4(53)

MICHAEL HOGAN, PH.D., RPA*
Principal Investigator/Archaeologist

Education

1991	Ph.D., Anthropology, University of California, Riverside.
1981	B.S., Anthropology, University of California, Riverside; with honors.
2021	"An Introduction to Geoarchaeology: How Understanding Basic Soils, Sediments, and Landforms can make you a Better Archaeologist." SAA Online Seminar.
2002	"Section 106—National Historic Preservation Act: Federal Law at the Local Level," UCLA Extension Course #888.
2002	"Recognizing Historic Artifacts," workshop presented by Richard Norwood, Historical Archaeologist.
2002	"Wending Your Way through the Regulatory Maze," symposium presented by the Association of Environmental Professionals.
1992	"Southern California Ceramics Workshop," presented by Jerry Schaefer.
1992	"Historic Artifact Workshop," presented by Anne Duffield-Stoll.

Registrations

*Registered Professional Archaeologist 41781498

Professional Experience

2002-	Principal Investigator, CRM TECH, Riverside/Colton, California.
1999-2002	Field Director/Project Archaeologist/Project Paleontologist, CRM TECH.
1996-1998	Project Director and Ethnographer, Statistical Research, Inc., Redlands.
1992-1998	Assistant Research Anthropologist, University of California, Riverside
1992-1995	Project Director, Archaeological Research Unit, U.C. Riverside.
1991-1992	Crew Chief, Archaeological Research Unit, U.C. Riverside.
1984-1998	Project Director, Field Director, Crew Chief, and Archaeological Technician for various southern California cultural resources management firms.

Research Interests

Cultural Resource Management, Southern Californian Archaeology, Settlement and Exchange Patterns, Specialization and Stratification, Culture Change, Native American Culture, Cultural Diversity.

Cultural Resources Management Reports

Principal investigator for, author or co-author of, and contributor to numerous cultural resources management study reports since 1986.

Memberships

Society for American Archaeology; Society for California Archaeology; Pacific Coast Archaeological Society; Coachella Valley Archaeological Society.

MICHAEL D. RICHARDS, M.A., RPA
Project Archaeologist

Education

2002	M.A., Anthropology, California State University, Northridge (CSUN).
1986	B.A., Anthropology: University of California, Los Angeles (UCLA).
1982	A.A., Los Angeles Valley College, Los Angeles, California.

2015	Section 106 workshop.
2000	CSUN "Olmec" field excavation and lab analysis; La Venta, Mexico.
1999	Rock art recording, UCLA Extension; Little Lake, California.
1998	Rock art symposium, UCLA Extension.

Professional Experience

2018-	Project Archaeologist/Paleontologist, CRM TECH, Colton, Calif.
2016-2018	Co-Principal Investigator/Archaeologist, LSA Associates Inc.
2012-2016	Co-Principal Investigator/Archaeologist, ICF International (Jones & Stokes).
2010-2012	Co-Principal Investigator/Archaeologist, various CRM firms (on call).
2007-2010	Principal Investigator/Field Director/Crew Chief, ASM Affiliates, Inc.
2004-2007	Project Manager/Co-Principal Investigator, ArchaeoPaleo Resource Management, Inc.
2003-2004	Staff Archaeologist/Crew Chief, SRI, Inc.
2000-2003	Project Archaeologist/Field Director, Ancient Enterprises (Clewlow, Jr.).
1999-2000	Staff Archaeologist/Lab Crew Chief, CSC/Edwards Air Force Base.

Research Interests

Pottery and rock art analysis; prehistory the American southwest; Mesoamerica; Japan.

Cultural Resources Management Reports

Author and co-author of, contributor to, and principal investigator for numerous cultural resources management study reports since 1999.

Memberships

Society for American Archaeology; Society for California Archaeology; Archaeological Institute of America; Conejo Open Space Trails Advisory Committee; Conejo Valley Historical Society.

NINA GALLARDO, B.A.
Project Archaeologist/Native American Liaison

Education

2004 B.A., Anthropology/Law and Society, University of California, Riverside.

Professional Experience

2004- Project Archaeologist, CRM TECH, Riverside/Colton, California.

Cultural Resources Management Reports

Co-author of and contributor to numerous cultural resources management reports since 2004.

APPENDIX 2

NATIVE AMERICAN SCOPING RESPONSES

SACRED LANDS FILE & NATIVE AMERICAN CONTACTS LIST REQUEST

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916)373-3710
(916)373-5471 (Fax)
nahc@nahc.ca.gov

Project: Proposed 16-Lot Subdivision Project; APNs 689-090-003, 689-130-004, -005, -013, -014, -017, and 689-140-022 (CRM TECH No. 4085)

County: Riverside

USGS Quadrangle Name: Cathedral City and Rancho Mirage, Calif.

Township 5 South **Range** 5 East SB **BM; Section(s)** 2

Company/Firm/Agency: CRM TECH

Contact Person: Nina Gallardo

Street Address: 1016 E. Cooley Drive, Suite A/B

City: Colton, CA **Zip:** 92324

Phone: (909) 824-6400 **Fax:** (909) 824-6405

Email: ngallardo@crmtech.us

Project Description: The primary component of the project is to subdivide the property into a 16-lot residential development on approximately 20 acres, is located on both the east and west side of Peterson Road, north of Mirage Cove Drive and south of the Whitewater River, in the City of Rancho Mirage, Riverside County, California

December 21, 2023

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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Reginald Pagaling
Chumash

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Luiseño

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Isaac Bojorquez
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COMMISSIONER
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Kumeyaay

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Laurena Bolden
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Cahuilla

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

January 18, 2024

Nina Gallardo
CRM TECH

Via Email to: ngallardo@crmtech.us

Re: Proposed 16-Lot Subdivision Project, Riverside County

Dear Ms. Gallardo:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Page 1 of 1

Native American Heritage Commission
Native American Contact List
Riverside County
1/18/2024

Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties
Agua Caliente Band of Cahuilla Indians	F	Lacy Padilla, THPO Operations Manager	5401 Dinah Shore Drive Palm Springs, CA, 92264	(760) 333-5222	(760) 699-6919	ACBCI-THPO@aguacaliente.net	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Augustine Band of Cahuilla Indians	F	Tribal Operations,	84-001 Avenue 54 Coachella, CA, 92236	(760) 398-4722			Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Cabazon Band of Mission Indians	F	Doug Welmas, Chairperson	84-245 Indio Springs Parkway Indio, CA, 92203	(760) 342-2593	(760) 347-7880	jstapp@cabazonindians-nsn.gov	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Cahuilla Band of Indians	F	BobbyRay Esaprza, Cultural Director	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		besparza@cahuilla-nsn.gov	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Cahuilla Band of Indians	F	Anthony Madrigal, Tribal Historic Preservation Officer	52701 CA Highway 371 Anza, CA, 92539	(951) 763-5549		anthonymad2002@gmail.com	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Cahuilla Band of Indians	F	Daniel Salgado, Chairperson	52701 CA Highway 371 Anza, CA, 92539	(951) 972-2568	(951) 763-2808	chairman@cahuilla-nsn.gov	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Los Coyotes Band of Cahuilla and Cupeño Indians	F	Ray Chapparosa, Chairperson	P.O. Box 189 Warner Springs, CA, 92086-0189	(760) 782-0711	(760) 782-0712		Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Morongo Band of Mission Indians	F	Robert Martin, Chairperson	12700 Pumarra Road Banning, CA, 92220	(951) 755-5110	(951) 755-5177	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Los Angeles,Riverside,San Bernardino,San Diego
Morongo Band of Mission Indians	F	Ann Brierty, THPO	12700 Pumarra Road Banning, CA, 92220	(951) 755-5259	(951) 572-6004	abrierty@morongo-nsn.gov	Cahuilla Serrano	Imperial,Los Angeles,Riverside,San Bernardino,San Diego
Quechan Tribe of the Fort Yuma Reservation	F	Manfred Scott, Acting Chairman - Kw'ts'an Cultural Committee	P.O. Box 1899 Yuma, AZ, 85366	(928) 210-8739		culturalcommittee@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
Quechan Tribe of the Fort Yuma Reservation	F	Jordan Joaquin, President, Quechan Tribal Council	P.O.Box 1899 Yuma, AZ, 85366	(760) 919-3600		executivesecretary@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
Quechan Tribe of the Fort Yuma Reservation	F	Jill McCormick, Historic Preservation Officer	P.O. Box 1899 Yuma, AZ, 85366	(928) 261-0254		historicpreservation@quechantribe.com	Quechan	Imperial,Kern,Los Angeles,Riverside,San Bernardino,San Diego
Ramona Band of Cahuilla	F	John Gomez, Environmental Coordinator	P. O. Box 391670 Anza, CA, 92539	(951) 763-4105	(951) 763-4325	jgomez@ramona-nsn.gov	Cahuilla	Imperial,Riverside,San Bernardino,San Diego

Ramona Band of Cahuilla	F	Joseph Hamilton, Chairperson	P.O. Box 391670 Anza, CA, 92539	(951) 763-4105	(951) 763-4325	admin@ramona-nsn.gov	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Santa Rosa Band of Cahuilla Indians	F	Lovina Redner, Tribal Chair	P.O. Box 391820 Anza, CA, 92539	(951) 659-2700	(951) 659-2228	lsaul@santarosa-nsn.gov	Cahuilla	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego
Soboba Band of Luiseno Indians	F	Joseph Ontiveros, Tribal Historic Preservation Officer	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-5279	(951) 654-4198	jontiveros@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego
Soboba Band of Luiseno Indians	F	Jessica Valdez, Cultural Resource Specialist	P.O. Box 487 San Jacinto, CA, 92581	(951) 663-6261	(951) 654-4198	jvaldez@soboba-nsn.gov	Cahuilla Luiseno	Imperial,Los Angeles,Orange,Riverside,San Bernardino,San Diego
Torres-Martinez Desert Cahuilla Indians	F	Mary Belardo, Cultural Committee Vice Chair	P.O. Box 1160 Thermal, CA, 92274	(760) 397-0300		belardom@gmail.com	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Torres-Martinez Desert Cahuilla Indians	F	Gary Resvaloso, TM MLD	P.O. Box 1160 Thermal, CA, 92274	(760) 777-0365		grestmtm@gmail.com	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Torres-Martinez Desert Cahuilla Indians	F	Abraham Becerra, Cultural Coordinator	P.O. Box 1160 Thermal, CA, 92274	(760) 397-0300		abecerra@tmdci.org	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Torres-Martinez Desert Cahuilla Indians	F	Thomas Tortez, Chairperson	P.O. Box 1160 Thermal, CA, 92274	(760) 397-0300	(760) 397-8146	thomas.tortez@tmdci.org	Cahuilla	Imperial,Riverside,San Bernardino,San Diego
Torres-Martinez Desert Cahuilla Indians	F	Alesia Reed, Cultural Committee Chairwoman	P.O. Box 1160 Thermal, CA, 92274	(760) 397-0300		lisareed990@gmail.com	Cahuilla	Imperial,Riverside,San Bernardino,San Diego

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Proposed 16-Lot Subdivision Project, Riverside County.

FROM: NGALLARDO@CRMTECH.US
SENT: THURSDAY, DECEMBER 21, 2023 10:22 AM
TO: 'THPO CONSULTING'
CC: MADRIGAL, XITLALY (TRBL)
SUBJECT: CULTURAL STUDY AND PARTICIPATION IN FIELD SURVEY FOR THE PROPOSED 16-LOT SUBDIVISION PROJECT, IN THE CITY OF RANCHO MIRAGE (CRM TECH NO. 4085)
ATTACHMENTS:4085 NAHC REQUEST.DOCX; 4085 PA MAP.JPG

HELLO,

I'M WRITING TO INFORM YOU THAT CRM TECH WILL BE CONDUCTING A CULTURAL RESOURCES STUDY FOR THE PROPOSED 16-LOT SUBDIVISION PROJECT (APNS 689-090-003, 689-130-004, -005, -013, -014, -017, AND 689-140-022), IN THE CITY OF RANCHO MIRAGE, RIVERSIDE COUNTY, CALIFORNIA (CRM TECH NO. 4085). SPECIFICALLY, I AM CONTACTING YOU TO SEE IF THE TRIBE WOULD LIKE TO PARTICIPATE IN THE FIELD SURVEY OF THE PROPERTY. WE WILL CONTACT YOU AGAIN WHEN WE BEGIN TO SET UP A SPECIFIC TIME AND DATE FOR THE FIELDWORK ONCE WE HAVE COMPLETED THE RECORD SEARCH AT THE EIC.

WE ARE ALSO ASKING FOR ANY INFORMATION REGARDING ANY TRIBAL CULTURAL RESOURCES WITHIN OR NEAR THE PROPOSED PROJECT LOCATION. I'M ALSO ATTACHING THE PROPOSED PROJECT AREA MAP, AND PROJECT INFORMATION. WE WOULD ALSO APPRECIATE ANY INFORMATION THAT THE TRIBE MAY PROVIDE THAT CRM TECH CAN INCLUDE IN OUR REPORT. PLEASE FEEL FREE TO EMAIL BACK WITH ANY QUESTIONS, COMMENTS AND/ OR INFORMATION REGARDING THE PROPOSED PROJECT, AND POSSIBLE AVAILABILITY FOR THE FIELD SURVEY.

THANK YOU FOR YOUR TIME AND INPUT ON THIS PROJECT.

NINA GALLARDO
(909) 824-6400 (PHONE)
(909) 824-6405 (FAX)
CRM TECH
1016 E. COOLEY DRIVE, STE. A/B
COLTON, CA 92324

FROM: MADRIGAL, XITLALY (TRBL) <XMADRIGAL@AGUACALIENTE.NET>
SENT: WEDNESDAY, JANUARY 17, 2024 11:30 AM
TO: 'NGALLARDO@CRMTECH.US'
CC: PADILLA, LACY (TRBL); DUARTE, CLARITSA (TRBL)
SUBJECT: RE: PROFESSIONAL OFFICE AND ART GALLERY

SOUNDS GOOD, CLARITSA WILL MEET MICHAEL OUT AT 7 AM AND IS AVAILABLE FOR BOTH SURVEYS.

THANK YOU,
XITLALY MADRIGAL
CULTURAL RESOURCES ANALYST
XMADRIGAL@AGUACALIENTE.NET
C: (760) 423-3485 | D: (760) 883-6829
5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-008-2023-009

December 26, 2023

[VIA EMAIL TO:ngallardo@crmtech.us]
CRM TECH
Ms. Nina Gallardo
1016 E. Cooley Drive, Suite A/B
Colton, CA 92324

Re: 16-Lot Subdivision in Rancho Mirage

Dear Ms. Nina Gallardo,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the 16-Lot Subdivision project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*A cultural resources inventory of the project area by a qualified archaeologist prior to any development activities in this area.

*A copy of the records search with associated survey reports and site records from the information center.

*Copies of any cultural resource documentation (report and site records) generated in connection with this project.

*The presence of an approved Agua Caliente Native American Cultural Resource Monitor(s) during any ground disturbing activities (including archaeological testing and surveys). Should buried cultural deposits be encountered, the Monitor may request that destructive construction halt and the Monitor shall notify a Qualified Archaeologist (Secretary of the Interior's Standards and Guidelines) to investigate and, if necessary, prepare a mitigation plan for submission to the State Historic Preservation Officer and the Agua Caliente Tribal Historic Preservation Office.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

5401 Dinah Shore Drive, Palm Springs, CA 92264
([illegible] F. [illegible] www.[illegible].net

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

APPENDIX D

PRELIMINARY HYDROLOGY STUDY
for
TENTATIVE TRACT MAP 38971
RANCHO MIRAGE, CALIFORNIA

Prepared for:
Horti Caesaris LLC
9401 Wilshire Blvd., 12th Floor
Beverly Hills, CA 90212-2928

Prepared by:

FOMOTOR ENGINEERING

225 S. Civic Drive, Suite 1-5
Palm Springs, California 92262
Phone (760)323-1842
Fax (760)323-1742



July 9, 2024

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PRELIMINARY HYDROLOGY STUDY FOR TENTATIVE TRACT MAP 38971

PROJECT SITE LOCATION

The 20.05-acre 16 lot proposed Tentative Tract Map site is located on Peterson Road, west of Mirage Cove Drive, in the City of Rancho Mirage, County of Riverside, California. The proposed development site lies in Section 2, T5S, R5E, and SBBM, with APNs: 689-090-003, 689-130-004, -005, -013, -014, -017, -018 and 689-140-022.

PROJECT SITE DESCRIPTION

The project site is presently vacant. Existing elevations vary from 264 down to 257 with a slight slope. The site is entirely composed of Hydrologic Soil Type "A". A Tentative Tract Map is proposed on this site. The project site area is in shaded Zone X, which is described as: "2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile". (See Riverside County Flood Insurance Rate Map numbers 06065C1589G and 06065C1595G, Effective August 28, 2008, in Reference Materials).

PURPOSE

Each proposed lot within the project site was separately analyzed for proposed condition basin capacity using Synthetic Unit Hydrograph Shortcut Method for the 1, 3, 6, and 24-hour duration 100-year storm event to determine the worst-case contributing runoff volume. This computed runoff volume was used to size a proposed retention basin for each lot as per City of Rancho Mirage Standard Detail 310 for Retention Basins. The runoff from each proposed onsite area would be directed via swale system to the proposed retention basin. Adjacent half street frontage was added to the runoff area of each lot.

METHODOLOGY

The materials included with this study are presented to satisfy the criteria set forth in the Riverside County Flood Control & Water Conservation District (RCFC & WCD) Hydrology Manual. The onsite/offsite post-developed condition design runoff volume was determined using the worst of the 1, 3, 6, and 24-hour duration storm for the 100-year event. Peak discharges of the 100-year storm event will be determined with the Rational Formula. Synthetic Unit Hydrograph (SUH) calculations were performed in accordance with RCFC & WCD criteria. The Hydrologic Soil Group area was determined with the Natural Resources Conservation Service's National Cooperative Soil Survey (See Reference Material). Point precipitation frequency data was obtained with the National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Data Server from Atlas 14 (See Reference Material.). The NOAA point precipitation data of the 100-year event will be plotted on a log-log plot to obtain the slope of intensity duration curve which will be used in the Rational Method analysis. Any necessary storm drains will be modeled with the computer modeling software, Hydraflow Storm Sewers Extensions for AutoCAD Civil3D 2024, by Autodesk, Inc. Any necessary storm drain inlets will be sized as per AutoCAD Hydraflow Express Extension, Version 12.

RESULT OF SYNTHETIC UNIT HYDROGRAPH ANALYSIS

Summary of results of the Synthetic Unit Hydrograph (SUH) analysis are as follows:
Please refer to the attached Hydrology Plan, and SUH Calculation Spreadsheets in the Reference Materials

Proposed Onsite and Offsite Area Runoff to Basins

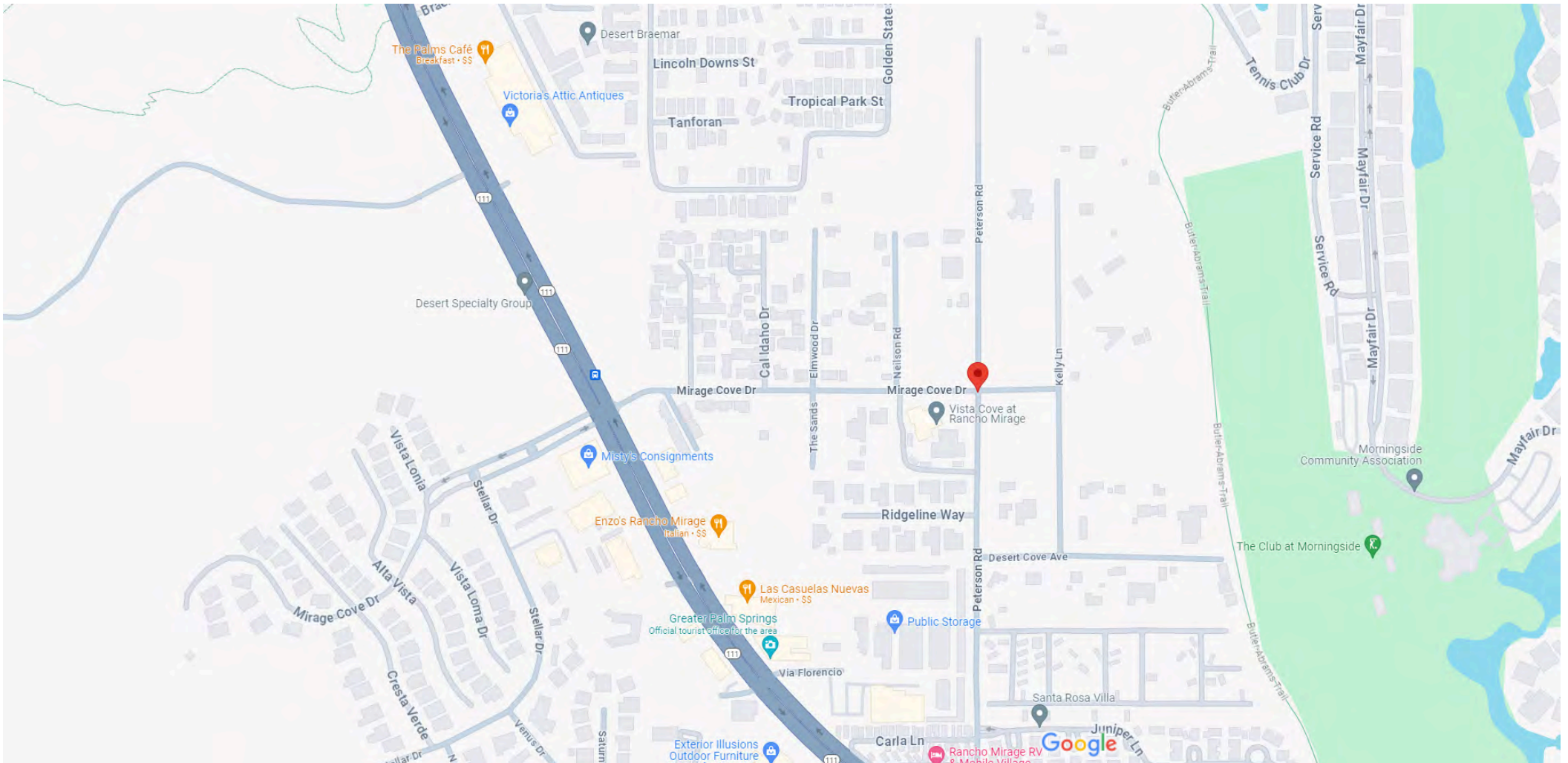
BASIN ID	*CONTRIBUTING AREA (ACRES) (STREET OFFSITE FRONTAGE 0.09AC)*	*STORM FREQUENCY (YEAR)*	*DURATION (HOUR)*	*PEAK RUNOFF STORAGE VOLUME VS INFILTRATION (CU-FT) -POST DEV*	*BASIN CAPACITY (CU-FT)*	*BASIN DEPTH (FT)*	*PEAK BASIN WATER DEPTH (FT)*
LOT 1	***1.09(1.00+0.09)***	***100***	***1***	***7,307***	***8,996***	***4***	***3.25***
LOT 2	***1.16(1.07+0.09)***	***100***	***1***	***7,777***	***8,239***	***4***	***3.78***
LOT 3	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 4	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 5	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 6	***1.25(1.16+0.09)***	***100***	***1***	***8,380***	***8,471***	***4***	***3.96***
LOT 7	***1.25(1.16+0.09)***	***100***	***1***	***8,380***	***8,471***	***4***	***3.96***
LOT 8	***1.07(0.98+0.09)***	***100***	***1***	***7,173***	***8,239***	***4***	***3.48***
LOT 9	***1.07(0.98+0.09)***	***100***	***1***	***7,173***	***8,239***	***4***	***3.48***
LOT 10	***1.23(1.14+0.09)***	***100***	***1***	***8,246***	***8,331***	***5***	***4.95***
LOT 11	***1.45(1.36+0.09)***	***100***	***1***	***9,721***	***9,830***	***5***	***4.94***
LOT 12	***1.64(1.55+0.09)***	***100***	***1***	***10,995***	***11,159***	***5***	***4.93***
LOT 13	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 14	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 15	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 16	***1.11(1.02+0.09)***	***100***	***1***	***7,441***	***8,239***	***4***	***3.61***

DISCUSSION

Basin infiltration was not used to size the retention basins. A percolation test will be performed in the future. The 1-hour storm was determined to be the worst case of the 1, 3, 6, and 24-hour duration 100-year storm events for the Synthetic Unit Hydrograph analysis. In general, each lot will have an independent retention basin sized to contain the 100-year 1-hour runoff from each respective lot as well as the adjacent half-street frontage. Each basin will be four to five feet deep with 3 to 1 side slopes and receive runoff from swale flow (See SUH Shortcut Calculations and Preliminary Hydrology Plan in the Reference Materials). The impermeable area used for calculations was based on a 1-acre residential lot from Plate D-5.6 of the RCFC&WCD Hydrology Manual and the adjacent half-street frontage was added. The Runoff Index was selected from Plate D-5.5 (1 of 2) of the RCFC&WCD Hydrology Manual.

REFERENCE MATERIAL

Google Maps Peterson Rd & Mirage Cove Dr

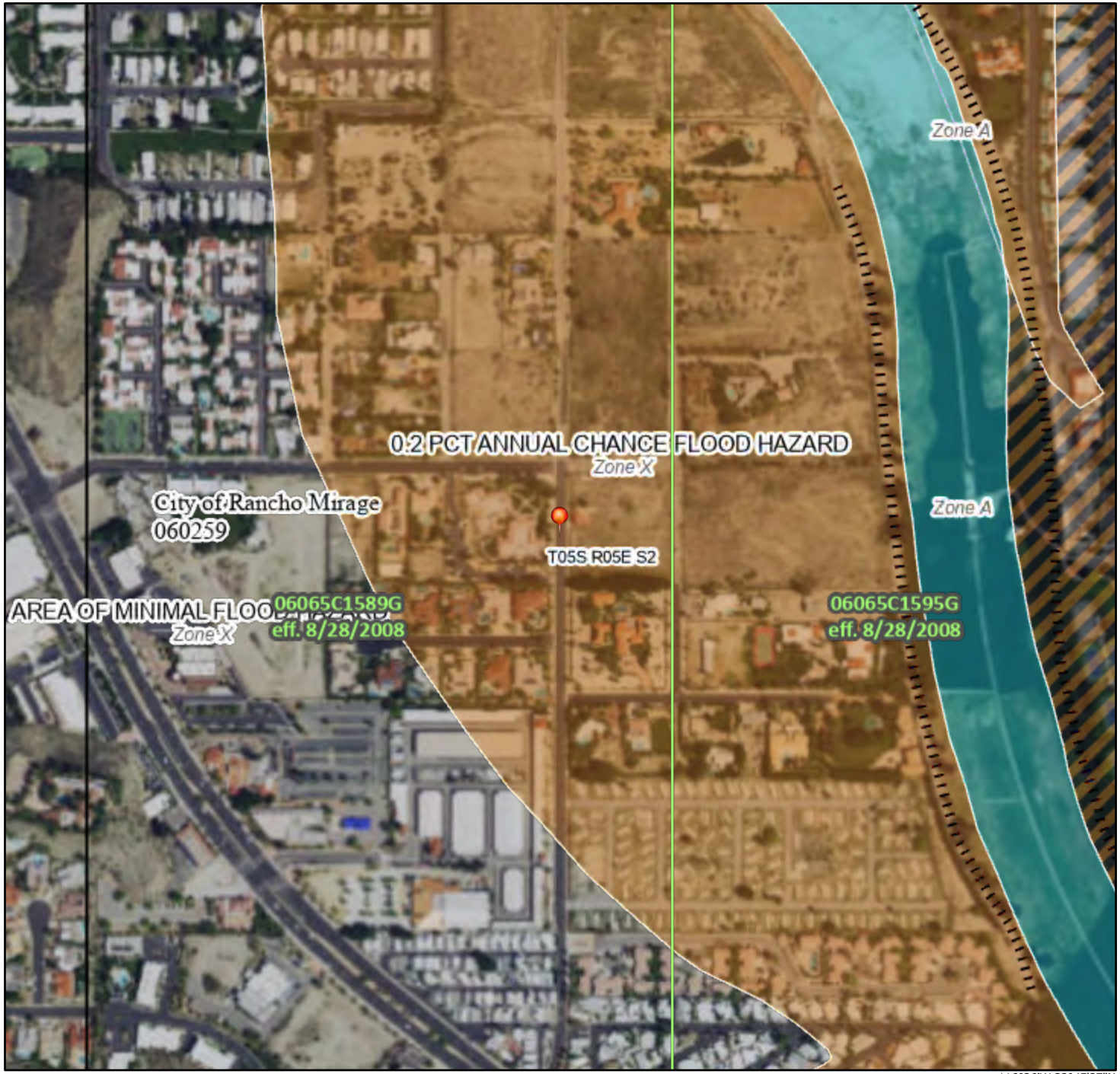


Map data ©2024 Google 200 ft

National Flood Hazard Layer FIRMette

FEMA

116°26'38"W 33°46'7"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

116°26'W 33°45'37"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/11/2024 at 4:17 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—Riverside County, Coachella Valley Area, California
(North Area)



Map Scale: 1:2,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2022—May 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CpA	Coachella fine sand, 0 to 2 percent slopes	A	13.0	100.0%
Totals for Area of Interest			**13.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

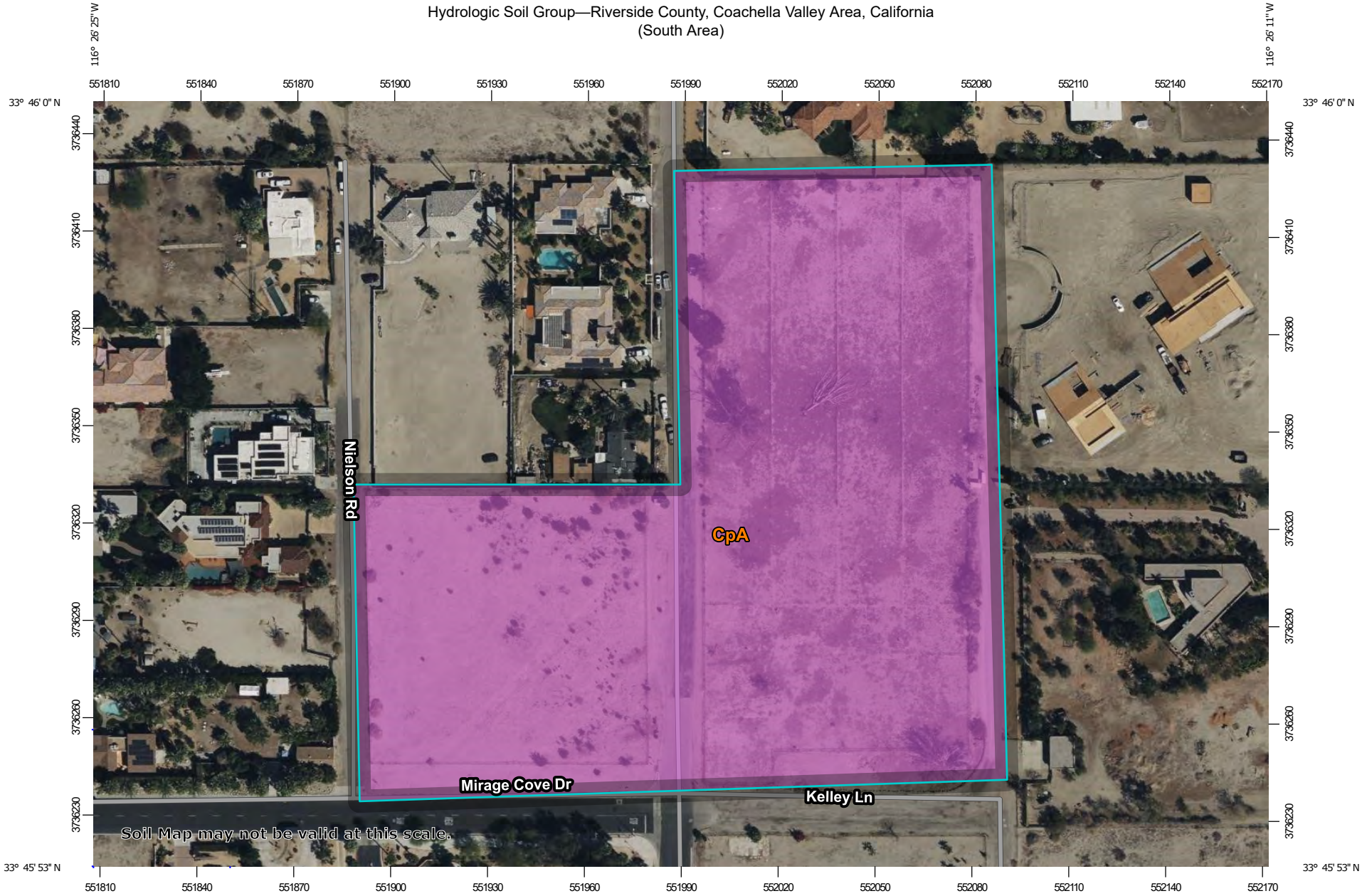
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Hydrologic Soil Group—Riverside County, Coachella Valley Area, California
(South Area)



Map Scale: 1:1,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

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Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2022—May 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CpA	Coachella fine sand, 0 to 2 percent slopes	A	7.1	100.0%
Totals for Area of Interest			**7.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

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Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

NOAA Atlas 14, Volume 6, Version 2
Location name: Rancho Mirage, California, USA*
Latitude: 33.767°, Longitude: -116.4389°
Elevation: 260 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.072 (0.060-0.087)	0.117 (0.097-0.142)	0.190 (0.157-0.231)	0.260 (0.214-0.319)	0.378 (0.301-0.479)	0.488 (0.380-0.632)	0.620 (0.471-0.824)	0.800 (0.590-1.09)	1.27 (0.901-1.82)	1.81 (1.24-2.68)
10-min	0.103 (0.086-0.124)	0.168 (0.140-0.203)	0.272 (0.226-0.330)	0.373 (0.307-0.458)	0.541 (0.431-0.687)	0.699 (0.544-0.906)	0.888 (0.675-1.18)	1.15 (0.846-1.57)	1.83 (1.29-2.61)	2.60 (1.78-3.84)
15-min	0.124 (0.104-0.150)	0.203 (0.169-0.246)	0.329 (0.273-0.400)	0.451 (0.372-0.553)	0.655 (0.521-0.831)	0.845 (0.658-1.10)	1.07 (0.816-1.43)	1.39 (1.02-1.90)	2.21 (1.56-3.15)	3.14 (2.15-4.65)
30-min	0.202 (0.169-0.245)	0.330 (0.275-0.400)	0.535 (0.444-0.650)	0.734 (0.605-0.900)	1.06 (0.848-1.35)	1.38 (1.07-1.78)	1.75 (1.33-2.32)	2.26 (1.66-3.09)	3.59 (2.54-5.13)	5.12 (3.49-7.56)
60-min	0.279 (0.233-0.338)	0.455 (0.379-0.552)	0.738 (0.613-0.898)	1.01 (0.835-1.24)	1.47 (1.17-1.87)	1.90 (1.48-2.46)	2.41 (1.83-3.21)	3.12 (2.30-4.26)	4.96 (3.51-7.08)	7.06 (4.83-10.4)
2-hr	0.374 (0.312-0.453)	0.611 (0.509-0.741)	0.969 (0.805-1.18)	1.30 (1.07-1.60)	1.82 (1.45-2.31)	2.28 (1.77-2.95)	2.80 (2.13-3.72)	3.40 (2.51-4.66)	5.01 (3.55-7.15)	7.14 (4.87-10.6)
3-hr	0.443 (0.369-0.536)	0.721 (0.601-0.875)	1.13 (0.940-1.38)	1.50 (1.24-1.84)	2.07 (1.65-2.62)	2.56 (1.99-3.31)	3.10 (2.36-4.12)	3.72 (2.75-5.09)	5.06 (3.58-7.22)	7.21 (4.92-10.7)
6-hr	0.593 (0.494-0.718)	0.953 (0.794-1.16)	1.47 (1.22-1.79)	1.93 (1.59-2.36)	2.60 (2.07-3.30)	3.17 (2.47-4.11)	3.79 (2.88-5.04)	4.48 (3.31-6.14)	5.51 (3.90-7.86)	7.28 (4.97-10.8)
12-hr	0.733 (0.611-0.888)	1.16 (0.969-1.41)	1.77 (1.47-2.15)	2.30 (1.90-2.82)	3.08 (2.45-3.91)	3.72 (2.90-4.83)	4.42 (3.36-5.88)	5.19 (3.83-7.10)	6.31 (4.46-9.00)	7.35 (5.02-10.9)
24-hr	0.867 (0.768-1.00)	1.36 (1.20-1.57)	2.06 (1.81-2.38)	2.66 (2.33-3.10)	3.54 (3.00-4.26)	4.27 (3.54-5.24)	5.05 (4.10-6.36)	5.91 (4.66-7.64)	7.16 (5.43-9.63)	8.20 (6.02-11.4)
2-day	0.996 (0.882-1.15)	1.54 (1.36-1.78)	2.32 (2.04-2.68)	2.99 (2.62-3.49)	3.98 (3.37-4.80)	4.80 (3.99-5.90)	5.69 (4.62-7.16)	6.67 (5.26-8.62)	8.09 (6.14-10.9)	9.28 (6.81-12.9)
3-day	1.06 (0.937-1.22)	1.63 (1.44-1.88)	2.44 (2.15-2.83)	3.16 (2.76-3.68)	4.21 (3.57-5.07)	5.09 (4.23-6.26)	6.05 (4.91-7.62)	7.11 (5.62-9.20)	8.67 (6.58-11.7)	9.99 (7.33-13.9)
4-day	1.09 (0.966-1.26)	1.67 (1.48-1.93)	2.51 (2.21-2.90)	3.24 (2.84-3.78)	4.33 (3.67-5.22)	5.24 (4.35-6.44)	6.24 (5.06-7.85)	7.34 (5.80-9.49)	8.97 (6.80-12.1)	10.4 (7.59-14.4)
7-day	1.19 (1.05-1.37)	1.82 (1.61-2.10)	2.73 (2.40-3.16)	3.52 (3.08-4.11)	4.71 (3.99-5.67)	5.70 (4.73-7.00)	6.78 (5.50-8.54)	7.98 (6.30-10.3)	9.76 (7.40-13.1)	11.3 (8.25-15.7)
10-day	1.26 (1.11-1.45)	1.93 (1.70-2.22)	2.89 (2.55-3.34)	3.74 (3.27-4.36)	5.00 (4.24-6.02)	6.06 (5.03-7.44)	7.21 (5.84-9.07)	8.48 (6.70-11.0)	10.4 (7.86-14.0)	12.0 (8.77-16.6)
20-day	1.38 (1.22-1.60)	2.14 (1.89-2.47)	3.23 (2.85-3.74)	4.20 (3.67-4.90)	5.65 (4.78-6.80)	6.86 (5.70-8.44)	8.20 (6.65-10.3)	9.68 (7.64-12.5)	11.9 (9.00-16.0)	13.7 (10.1-19.1)
30-day	1.55 (1.37-1.79)	2.42 (2.14-2.79)	3.68 (3.24-4.26)	4.80 (4.20-5.61)	6.49 (5.50-7.82)	7.92 (6.57-9.73)	9.48 (7.69-11.9)	11.2 (8.86-14.5)	13.8 (10.5-18.6)	16.0 (11.7-22.3)
45-day	1.70 (1.51-1.97)	2.69 (2.38-3.10)	4.12 (3.64-4.77)	5.41 (4.73-6.32)	7.36 (6.24-8.86)	9.02 (7.48-11.1)	10.8 (8.79-13.6)	12.9 (10.2-16.7)	15.9 (12.1-21.4)	18.5 (13.6-25.8)
60-day	1.83 (1.62-2.11)	2.91 (2.58-3.36)	4.50 (3.97-5.22)	5.94 (5.20-6.93)	8.12 (6.88-9.77)	9.98 (8.28-12.3)	12.0 (9.76-15.1)	14.3 (11.3-18.5)	17.8 (13.5-24.0)	20.8 (15.2-28.9)

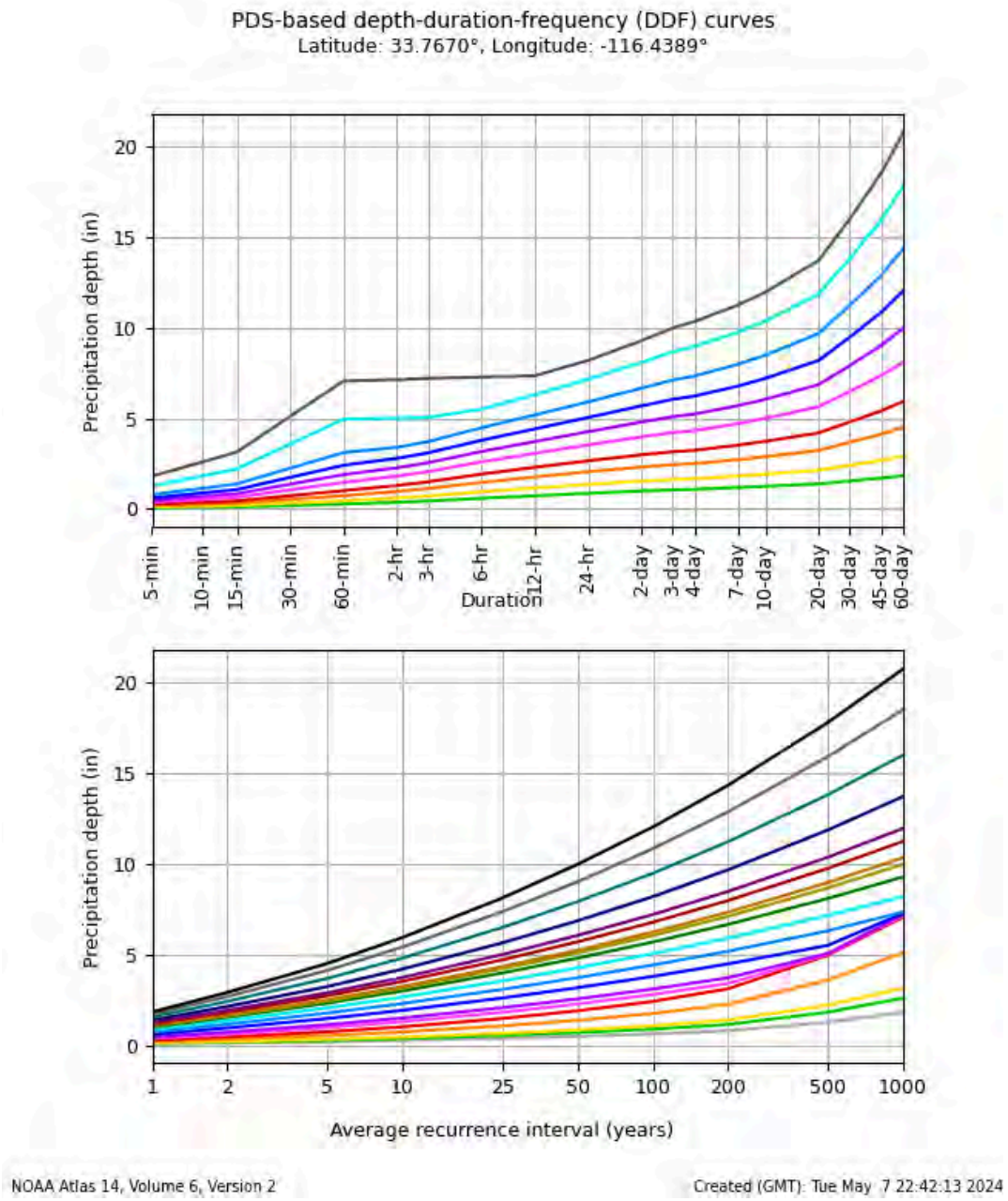
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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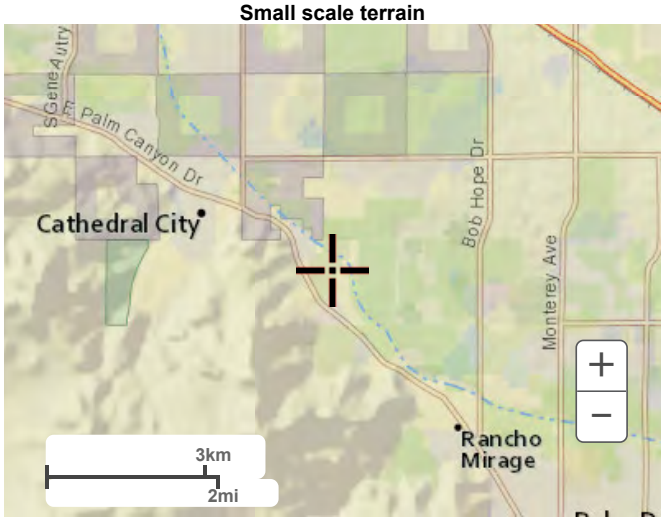
PF graphical



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Maps & aerials

Small scale terrain



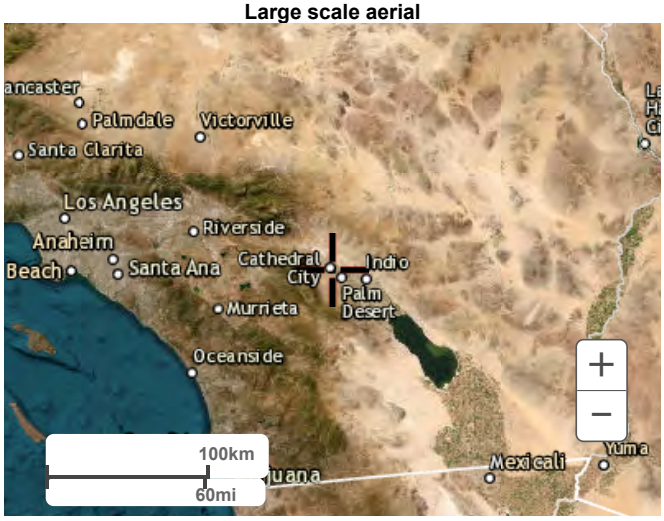
Large scale terrain



Large scale map



Large scale aerial

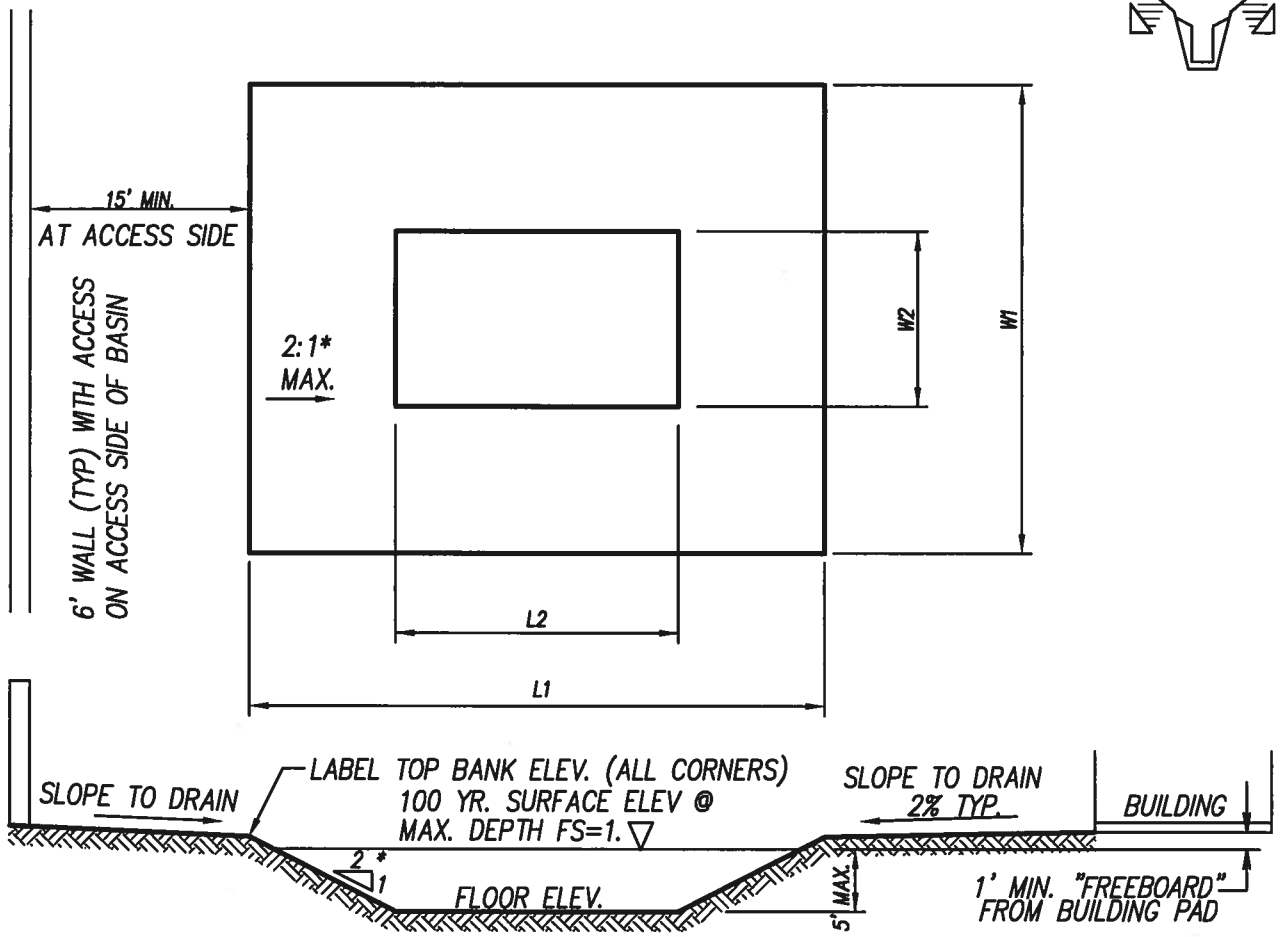


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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

CITY OF RANCHO MIRAGE



DESIGN CRITERIA

MAX. PERCOLATION RATE = 1"/HR.
MAX. DEPTH AT PEAK STORAGE = 5'
FACTOR OF SAFETY F.S. = 1.0 MINIMUM
ONE FOOT MINIMUM "FREEBOARD" BELOW LOWEST BUILDING PAD TO MAXIMIUM WATER LEVEL
THE BASIN SHALL BE DESIGNED TO RETAIN THE RUNOFF FROM THE WORST CASE OF THE 1 HR., 3 HR. 6 HR., OR 24 HR. DURATION, 100 YEAR FREQUENCY STORM.
SEE SHT. 2 OF 2 FOR MINIMUM PLAN REQUIREMENTS

* SLOPES STEEPER THAN 5:1 WILL REQUIRE EROSION CONTROL APPROVED BY THE CITY ENGINEER. (TYPICAL EROSION CONTROL CONSISTS OF CONTINUOUS GROUND COVER LIKE GRASS, OR WASHED ROCK WITH A DIAMETER OF 1" OR LARGER, PLACED TO A DEPTH OF 3" OVER WEED BARRIER CLOTH.)

CITY OF RANCHO MIRAGE		STANDARD
REVISIONS	RETENTION BASIN	DETAIL
* 7/5/2012		310
	7/12/12	
	APPROVED BY: CITY ENGINEER DATE	SHT. 1 OF 2

CITY OF RANCHO MIRAGE

AT A MINIMUM, PLANS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. BOUNDARY (LOT LINES) INCLUDING BEARING AND DISTANCES
2. SLOPE SYMBOLS, OR FINISH CONTOURS, WITH SLOPE RATIOS OR PERCENTAGES
* 3. ELEVATION LABELS FOR: BOTTOM, WATER SURFACE AT VOL. MAX. FOR 100YR. STORM, AND TOP (HYDROLOGY CALCULATIONS SHALL BE SUBMITTED VERIFYING BASIN AREA, DEPTH, AND VOLUME.)
4. DIMENSIONS (LENGTH, WIDTH AND DEPTH) OR SCALED DRAWING.
5. FINISHED SURFACE ELEVATIONS FOR IDENTIFYING THE FLOW PATHS
6. RIP-RAP OR APPROPRIATE EROSION CONTROL IF SLOPES EXCEED 20% (5:1)
7. ANY STRUCTURES, PIPES, HEADWALLS, RIP-RAP, DRYWELLS, ETC. SHOWN WITH REFERENCE TO STREET PLANS, STORM DRAIN PLANS, OR GRADING PLANS (A DRYWELL IS RECOMMENDED FOR LARGER RETENTION BASINS AS A WAY OF INTERCEPTING "NUISANCE WATER' THAT MIGHT CAUSE A CONSTANT SWAMPY AREA TO DEVELOP IN THE RETENTION BASIN. FLOWS TO CVWD CHANNELS OR TO LAKES TYPICALLY REQUIRE A DRYWELL TO INTERCEPT STREET RUNOFF. MAINTENANCE IS EASIEST IF THE DRYWELL IS NEAR THE STREET SO VACUUM TRUCKS CAN ACCESS THEM. SEE STANDARD DRAWINGS 306 AND 311.)

CITY OF RANCHO MIRAGE		STANDARD
REVISIONS * 7/5/2012	RETENTION BASIN NOTES	DETAIL 310
	APPROVED BY: CITY ENGINEER 7/12/12 DATE	SHT. 2 OF 2

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent(2)
Natural or Agriculture	0 - 10	0
Single Family Residential: (3)		
40,000 S. F. (1 Acre) Lots	10 - 25	20
20,000 S. F. (½ Acre) Lots	30 - 45	40
7,200 - 10,000 S. F. Lots	45 - 55	50
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 -100	90

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.

2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.

3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

RCFC & WCD
HYDROLOGY MANUAL

IMPERVIOUS COVER FOR DEVELOPED AREAS

PLATE D-5.6

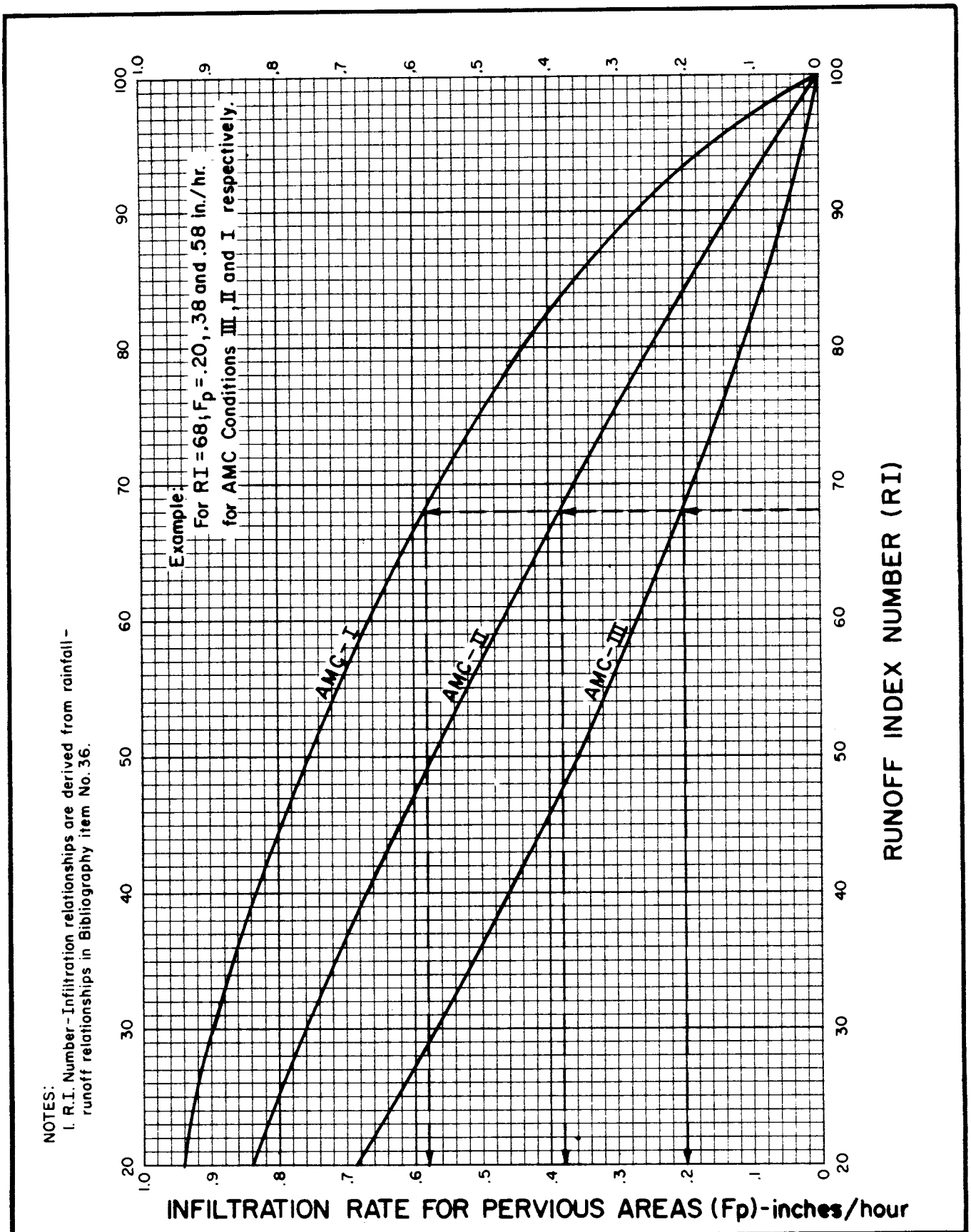
RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

RCFC & WCD
HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS FOR PERVIOUS AREA

PLATE D-5.5 (1 of 2)



NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

PLATE E-6.2

HYDROLOGY CALCULATIONS -

program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2

Area=1.00ac+0.09ac typ street frontage=1.09ac
5/7/2024 LOT 1

Drainage Area (ac.)	1.0900	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3702 s.f. Bot. = 1062 s.f. Max. Depth (d)= 4 Max. storage= 8995.74 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5575	167.24	0.00	0.00	0.00	0.00	0.00	167.24	1062.00	0.07	167.16	0.07	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9071	272.13	0.00	0.00	0.00	0.00	0.00	272.13	1111.06	0.08	439.21	0.20	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0024	300.73	0.00	0.00	0.00	0.00	0.00	300.73	1190.90	0.08	739.86	0.33	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9389	281.66	0.00	0.00	0.00	0.00	0.00	281.66	1279.13	0.09	1021.44	0.45	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4792	443.77	0.00	0.00	0.00	0.00	0.00	443.77	1361.76	0.09	1465.11	0.65	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7017	510.52	0.00	0.00	0.00	0.00	0.00	510.52	1491.97	0.10	1975.53	0.88	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0514	615.41	0.00	0.00	0.00	0.00	0.00	615.41	1641.76	0.11	2590.82	1.15	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2421	672.62	0.00	0.00	0.00	0.00	0.00	672.62	1822.33	0.13	3263.32	1.45	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2910	987.30	0.00	0.00	0.00	0.00	0.00	987.30	2019.69	0.14	4250.48	1.89	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.9756	1492.69	0.00	0.00	0.00	0.00	0.00	1492.69	2309.40	0.16	5743.01	2.55	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4989	1349.66	0.00	0.00	0.00	0.00	0.00	1349.66	2747.41	0.19	7092.48	3.15	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7164	214.91	0.00	0.00	0.00	0.00	0.00	214.91	3143.44	0.22	7307.17	3.25	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.45	0.22	7306.95	3.25	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.39	0.22	7306.73	3.25	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.32	0.22	7306.50	3.25	0.00	0.00	
					Total volume (cf)			7308.64								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0532	15.95	0.00	0.00	0.00	0.00	0.00	15.95	1062.00	0.07	15.87	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0532	15.95	0.00	0.00	0.00	0.00	0.00	15.95	1066.66	0.07	31.74	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0450	13.49	0.00	0.00	0.00	0.00	0.00	13.49	1071.32	0.07	45.16	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1075.25	0.07	63.49	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1080.63	0.08	81.81	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1086.01	0.08	116.93	0.05	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1096.32	0.08	135.26	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1101.69	0.08	170.38	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1112.00	0.08	205.50	0.09	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1122.31	0.08	223.82	0.10	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0654	19.63	0.00	0.00	0.00	0.00	0.00	19.63	1127.69	0.08	243.37	0.11	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1133.42	0.08	278.49	0.12	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1143.73	0.08	362.68	0.16	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1168.44	0.08	446.86	0.20	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1193.14	0.08	531.04	0.24	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1991	59.73	0.00	0.00	0.00	0.00	0.00	59.73	1217.84	0.08	590.68	0.26	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4444	133.33	0.00	0.00	0.00	0.00	0.00	133.33	1235.35	0.09	723.93	0.32	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4853	145.59	0.00	0.00	0.00	0.00	0.00	145.59	1274.45	0.09	869.43	0.39	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3626	108.79	0.00	0.00	0.00	0.00	0.00	108.79	1317.15	0.09	978.13	0.43	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4853	145.59	0.00	0.00	0.00	0.00	0.00	145.59	1349.05	0.09	1123.63	0.50	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7306	219.19	0.00	0.00	0.00	0.00	0.00	219.19	1391.75	0.10	1342.72	0.60	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6489	194.66	0.00	0.00	0.00	0.00	0.00	194.66	1456.05	0.10	1537.27	0.68	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5671	170.12	0.00	0.00	0.00	0.00	0.00	170.12	1513.15	0.11	1707.29	0.76	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6080	182.39	0.00	0.00	0.00	0.00	0.00	182.39	1563.04	0.11	1889.57	0.84	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6489	194.66	0.00	0.00	0.00	0.00	0.00	194.66	1616.54	0.11	2084.12	0.93	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0986	329.58	0.00	0.00	0.00	0.00	0.00	329.58	1673.63	0.12	2413.58	1.07	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4257	427.70	0.00	0.00	0.00	0.00	0.00	427.70	1770.32	0.12	2841.16	1.26	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8124	243.72	0.00	0.00	0.00	0.00	0.00	243.72	1895.80	0.13	3084.75	1.37	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1616	648.49	0.00	0.00	0.00	0.00	0.00	648.49	1967.29	0.14	3733.10	1.66	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3661	709.82	0.00	0.00	0.00	0.00	0.00	709.82	2157.56	0.15	4442.77	1.98	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.7340	820.21	0.00	0.00	0.00	0.00	0.00	820.21	2365.83	0.16	5262.81	2.34	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7937	538.10	0.00	0.00	0.00	0.00	0.00	538.10	2606.49	0.18	5800.73	2.58	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1991	59.73	0.00	0.00	0.00	0.00	0.00	59.73	2764.35	0.19	5860.27	2.61	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	2781.83	0.19	5895.27	2.62	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	2792.10	0.19	5930.28	2.64	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2802.37	0.19	5937.45	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.47	0.19	5937.25	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.42	0.19	5937.06	2.64	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.36	0.19	5936.86	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.30	0.19	5936.67	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.25	0.19	5936.47	2.64	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.19	0.19	5936.28	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.13	0.19	5936.08	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.07	0.19	5935.89	2.64	0.00	0.00
					Total volume (cf)		5941.35								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0250	7.50	0.00	0.00	0.00	0.00	0.00	7.50	1062.00	0.07	7.42	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1064.18	0.07	16.35	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1066.80	0.07	25.27	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1069.42	0.07	34.19	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1072.04	0.07	43.12	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1074.65	0.07	53.54	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1077.71	0.07	63.96	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1080.77	0.08	74.38	0.03	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1083.83	0.08	84.81	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1086.89	0.08	95.23	0.04	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1089.95	0.08	105.65	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1093.01	0.08	117.57	0.05	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1096.50	0.08	129.49	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1100.00	0.08	141.41	0.06	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1103.50	0.08	153.33	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1107.00	0.08	165.25	0.07	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1110.50	0.08	177.17	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1113.99	0.08	189.09	0.08	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1117.49	0.08	201.01	0.09	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1120.99	0.08	212.93	0.09	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1124.49	0.08	224.85	0.10	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1127.99	0.08	236.76	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1131.48	0.08	248.68	0.11	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1134.98	0.08	262.10	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1138.92	0.08	274.02	0.12	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1142.42	0.08	287.44	0.13	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1146.35	0.08	300.85	0.13	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1150.29	0.08	314.27	0.14	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1154.23	0.08	327.68	0.15	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1158.17	0.08	341.10	0.15	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1162.10	0.08	354.52	0.16	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1166.04	0.08	367.93	0.16	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1169.98	0.08	382.85	0.17	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1174.35	0.08	397.76	0.18	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1178.73	0.08	412.67	0.18	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1183.11	0.08	427.59	0.19	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1187.49	0.08	442.50	0.20	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1191.86	0.08	458.91	0.20	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1196.68	0.08	475.33	0.21	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1201.50	0.08	491.74	0.22	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0600	18.00	0.00	0.00	0.00	0.00	0.00	18.00	1206.31	0.08	509.65	0.23	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0650	19.49	0.00	0.00	0.00	0.00	0.00	19.49	1211.57	0.08	529.06	0.24	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0812	24.36	0.00	0.00	0.00	0.00	0.00	24.36	1217.26	0.08	553.33	0.25	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0812	24.36	0.00	0.00	0.00	0.00	0.00	24.36	1224.39	0.09	577.61	0.26	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1312	39.35	0.00	0.00	0.00	0.00	0.00	39.35	1231.51	0.09	616.88	0.27	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1312	39.35	0.00	0.00	0.00	0.00	0.00	39.35	1243.04	0.09	656.15	0.29	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1812	54.35	0.00	0.00	0.00	0.00	0.00	54.35	1254.56	0.09	710.41	0.32	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1812	54.35	0.00	0.00	0.00	0.00	0.00	54.35	1270.49	0.09	764.67	0.34	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2312	69.35	0.00	0.00	0.00	0.00	0.00	69.35	1286.41	0.09	833.93	0.37	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2811	84.34	0.00	0.00	0.00	0.00	0.00	84.34	1306.73	0.09	918.18	0.41	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3311	99.34	0.00	0.00	0.00	0.00	0.00	99.34	1331.46	0.09	1017.43	0.45	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3811	114.33	0.00	0.00	0.00	0.00	0.00	114.33	1360.59	0.09	1131.67	0.50	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4311	129.33	0.00	0.00	0.00	0.00	0.00	129.33	1394.11	0.10	1260.90	0.56	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4311	129.33	0.00	0.00	0.00	0.00	0.00	129.33	1432.04	0.10	1390.13	0.62	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1469.96	0.10	1534.35	0.68	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5311	159.32	0.00	0.00	0.00	0.00	0.00	159.32	1512.29	0.11	1693.57	0.75	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5811	174.32	0.00	0.00	0.00	0.00	0.00	174.32	1559.02	0.11	1867.78	0.83	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5811	174.32	0.00	0.00	0.00	0.00	0.00	174.32	1610.14	0.11	2041.99	0.91	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6310	189.31	0.00	0.00	0.00	0.00	0.00	189.31	1661.27	0.12	2231.18	0.99	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6810	204.31	0.00	0.00	0.00	0.00	0.00	204.31	1716.79	0.12	2435.37	1.08	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9310	279.29	0.00	0.00	0.00	0.00	0.00	279.29	1776.71	0.12	2714.54	1.21	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1809	354.27	0.00	0.00	0.00	0.00	0.00	354.27	1858.64	0.13	3068.68	1.36	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3309	399.26	0.00	0.00	0.00	0.00	0.00	399.26	1962.57	0.14	3467.80	1.54	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4808	444.24	0.00	0.00	0.00	0.00	0.00	444.24	2079.70	0.14	3911.90	1.74	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7307	519.22	0.00	0.00	0.00	0.00	0.00	519.22	2210.03	0.15	4430.97	1.97	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1806	654.19	0.00	0.00	0.00	0.00	0.00	654.19	2362.37	0.16	5084.99	2.26	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3311	99.34	0.00	0.00	0.00	0.00	0.00	99.34	2554.30	0.18	5184.15	2.31	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	2583.40	0.18	5197.47	2.31	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	2587.31	0.18	5206.29	2.31	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0250	7.50	0.00	0.00	0.00	0.00	0.00	7.50	2589.90	0.18	5213.60	2.32	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0150	4.50	0.00	0.00	0.00	0.00	0.00	4.50	2592.05	0.18	5217.92	2.32	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0100	3.00	0.00	0.00	0.00	0.00	0.00	3.00	2593.31	0.18	5220.74	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.14	0.18	5220.56	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.09	0.18	5220.38	2.32	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.04	0.18	5220.20	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.98	0.18	5220.02	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.93	0.18	5219.84	2.32	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.88	0.18	5219.66	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.83	0.18	5219.48	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.77	0.18	5219.30	2.32	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.72	0.18	5219.12	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.67	0.18	5218.94	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.61	0.18	5218.76	2.32	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.56	0.18	5218.58	2.32	0.00	0.00
					Total volume (cf)			5227.70								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1062.00	0.22	3.78	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1063.11	0.22	9.55	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1064.80	0.22	15.32	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1066.50	0.22	23.09	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1068.78	0.22	28.86	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1070.47	0.22	34.63	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1072.16	0.22	40.41	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1073.86	0.22	48.17	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1076.14	0.22	55.94	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1078.42	0.22	63.71	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1080.70	0.23	73.48	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1083.56	0.23	83.24	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1086.43	0.23	93.00	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1089.29	0.23	102.77	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1092.16	0.23	112.53	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1095.02	0.23	124.29	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1098.48	0.23	136.05	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1101.93	0.23	149.81	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1105.96	0.23	163.57	0.07	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1110.00	0.23	179.32	0.08	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1114.63	0.23	191.08	0.08	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1118.08	0.23	204.83	0.09	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1122.11	0.23	220.58	0.10	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1126.73	0.23	236.33	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0200	17.98	0.00	0.00	0.00	0.00	0.00	17.98	1131.36	0.24	254.08	0.11	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0200	17.98	0.00	0.00	0.00	0.00	0.00	17.98	1136.57	0.24	271.83	0.12	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1141.77	0.24	291.57	0.13	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1147.57	0.24	311.31	0.14	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1153.36	0.24	331.05	0.15	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0244	21.98	0.00	0.00	0.00	0.00	0.00	21.98	1159.15	0.24	352.79	0.16	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0266	23.98	0.00	0.00	0.00	0.00	0.00	23.98	1165.53	0.24	376.53	0.17	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0289	25.98	0.00	0.00	0.00	0.00	0.00	25.98	1172.50	0.24	402.26	0.18	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1180.05	0.25	431.98	0.19	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1188.78	0.25	461.71	0.21	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0355	31.97	0.00	0.00	0.00	0.00	0.00	31.97	1197.50	0.25	493.43	0.22	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0377	33.97	0.00	0.00	0.00	0.00	0.00	33.97	1206.81	0.25	527.15	0.23	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1216.70	0.25	564.86	0.25	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1227.77	0.26	604.56	0.27	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0466	41.96	0.00	0.00	0.00	0.00	0.00	41.96	1239.42	0.26	646.27	0.29	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0488	43.96	0.00	0.00	0.00	0.00	0.00	43.96	1251.66	0.26	689.96	0.31	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1264.49	0.26	719.67	0.32	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1273.20	0.27	749.38	0.33	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1281.92	0.27	789.07	0.35	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1293.57	0.27	828.77	0.37	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1305.22	0.27	866.46	0.39	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1316.28	0.27	904.15	0.40	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0377	33.97	0.00	0.00	0.00	0.00	0.00	33.97	1327.34	0.28	937.84	0.42	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0400	35.97	0.00	0.00	0.00	0.00	0.00	35.97	1337.23	0.28	973.53	0.43	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0555	49.95	0.00	0.00	0.00	0.00	0.00	49.95	1347.70	0.28	1023.20	0.45	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0577	51.95	0.00	0.00	0.00	0.00	0.00	51.95	1362.28	0.28	1074.87	0.48	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0684	61.56	0.00	0.00	0.00	0.00	0.00	61.56	1377.44	0.29	1136.14	0.51	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.0989	89.05	0.00	0.00	0.00	0.00	0.00	89.05	1395.43	0.29	1224.90	0.54	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2182	196.38	0.00	0.00	0.00	0.00	0.00	196.38	1421.48	0.30	1420.99	0.63	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2263	203.71	0.00	0.00	0.00	0.00	0.00	203.71	1479.02	0.31	1624.39	0.72	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1538.71	0.32	1670.03	0.74	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1552.11	0.32	1715.66	0.76	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0947	85.25	0.00	0.00	0.00	0.00	0.00	85.25	1565.50	0.33	1800.59	0.80	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0802	72.21	0.00	0.00	0.00	0.00	0.00	72.21	1590.42	0.33	1872.46	0.83	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0878	79.05	0.00	0.00	0.00	0.00	0.00	79.05	1611.52	0.34	1951.18	0.87	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0731	65.81	0.00	0.00	0.00	0.00	0.00	65.81	1634.62	0.34	2016.64	0.90	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0583	52.46	0.00	0.00	0.00	0.00	0.00	52.46	1653.83	0.34	2068.76	0.92	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1669.12	0.35	2114.37	0.94	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1682.51	0.35	2151.98	0.96	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1693.55	0.35	2189.60	0.97	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1704.59	0.36	2197.23	0.98	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1706.83	0.36	2204.87	0.98	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1709.07	0.36	2210.51	0.98	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1710.72	0.36	2216.15	0.99	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1712.38	0.36	2225.78	0.99	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1715.20	0.36	2235.41	0.99	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1718.03	0.36	2245.05	1.00	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1720.86	0.36	2252.68	1.00	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1723.10	0.36	2260.31	1.01	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1725.34	0.36	2267.95	1.01	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1727.58	0.36	2273.58	1.01	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1729.23	0.36	2277.22	1.01	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1730.30	0.36	2282.85	1.02	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1731.95	0.36	2290.48	1.02	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1734.19	0.36	2296.12	1.02	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1735.85	0.36	2299.75	1.02	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1736.91	0.36	2305.38	1.03	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1738.57	0.36	2311.02	1.03	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1740.22	0.36	2316.65	1.03	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1741.87	0.36	2320.28	1.03	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1742.94	0.36	2325.91	1.03	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1744.59	0.36	2329.55	1.04	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1745.66	0.36	2335.18	1.04	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1747.31	0.36	2338.81	1.04	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1748.38	0.36	2344.44	1.04	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1750.03	0.36	2348.07	1.04	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1751.09	0.36	2351.70	1.05	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1752.16	0.37	2355.33	1.05	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1753.22	0.37	2358.96	1.05	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1754.29	0.37	2362.59	1.05	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1755.36	0.37	2366.23	1.05	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1756.42	0.37	2369.86	1.05	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1757.49	0.37	2369.49	1.05	0.00	0.00
					Total volume (cf)		2398.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.07ac+0.09ac typ street frontage=1.16ac

5/7/2024 LOT 2

Drainage Area (ac.)	1.1600	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5933	177.98	0.00	0.00	0.00	0.00	0.00	177.98	1078.00	0.07	177.90	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9653	289.60	0.00	0.00	0.00	0.00	0.00	289.60	1124.55	0.08	467.43	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0668	320.05	0.00	0.00	0.00	0.00	0.00	320.05	1200.32	0.08	787.39	0.38	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9992	299.75	0.00	0.00	0.00	0.00	0.00	299.75	1284.05	0.09	1087.05	0.53	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5742	472.27	0.00	0.00	0.00	0.00	0.00	472.27	1362.47	0.09	1559.23	0.76	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8110	543.30	0.00	0.00	0.00	0.00	0.00	543.30	1486.03	0.10	2102.43	1.02	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1831	654.93	0.00	0.00	0.00	0.00	0.00	654.93	1628.18	0.11	2757.25	1.34	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3861	715.82	0.00	0.00	0.00	0.00	0.00	715.82	1799.53	0.12	3472.94	1.69	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5024	1050.71	0.00	0.00	0.00	0.00	0.00	1050.71	1986.82	0.14	4523.51	2.20	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.2952	1588.55	0.00	0.00	0.00	0.00	0.00	1588.55	2261.74	0.16	6111.90	2.97	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.7878	1436.33	0.00	0.00	0.00	0.00	0.00	1436.33	2677.40	0.19	7548.05	3.66	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7624	228.72	0.00	0.00	0.00	0.00	0.00	228.72	3053.22	0.21	7776.55	3.78	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3113.02	0.22	7776.33	3.78	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3112.96	0.22	7776.12	3.78	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3112.90	0.22	7775.90	3.78	0.00	0.00	
					Total volume (cf)			7778.00								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0566	16.97	0.00	0.00	0.00	0.00	0.00	16.97	1078.00	0.07	16.89	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0566	16.97	0.00	0.00	0.00	0.00	0.00	16.97	1082.42	0.08	33.79	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1086.84	0.08	48.07	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1090.58	0.08	67.58	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1095.68	0.08	87.08	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1100.79	0.08	124.47	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1110.57	0.08	143.97	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1115.67	0.08	181.35	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1125.46	0.08	218.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1135.24	0.08	238.24	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0696	20.89	0.00	0.00	0.00	0.00	0.00	20.89	1140.34	0.08	259.04	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1145.79	0.08	296.42	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1155.57	0.08	386.02	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1179.02	0.08	475.61	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1202.46	0.08	565.20	0.27	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2119	63.57	0.00	0.00	0.00	0.00	0.00	63.57	1225.91	0.09	628.68	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4730	141.89	0.00	0.00	0.00	0.00	0.00	141.89	1242.52	0.09	770.49	0.37	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5165	154.94	0.00	0.00	0.00	0.00	0.00	154.94	1279.63	0.09	925.34	0.45	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3859	115.78	0.00	0.00	0.00	0.00	0.00	115.78	1320.15	0.09	1041.03	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5165	154.94	0.00	0.00	0.00	0.00	0.00	154.94	1350.42	0.09	1195.88	0.58	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7775	233.26	0.00	0.00	0.00	0.00	0.00	233.26	1390.94	0.10	1429.04	0.69	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6905	207.16	0.00	0.00	0.00	0.00	0.00	207.16	1451.96	0.10	1636.10	0.79	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6035	181.05	0.00	0.00	0.00	0.00	0.00	181.05	1506.14	0.10	1817.04	0.88	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6470	194.10	0.00	0.00	0.00	0.00	0.00	194.10	1553.50	0.11	2011.04	0.98	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6905	207.16	0.00	0.00	0.00	0.00	0.00	207.16	1604.26	0.11	2218.08	1.08	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1691	350.74	0.00	0.00	0.00	0.00	0.00	350.74	1658.44	0.12	2568.71	1.25	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5172	455.17	0.00	0.00	0.00	0.00	0.00	455.17	1750.20	0.12	3023.76	1.47	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8646	259.37	0.00	0.00	0.00	0.00	0.00	259.37	1869.28	0.13	3283.00	1.59	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3004	690.13	0.00	0.00	0.00	0.00	0.00	690.13	1937.12	0.13	3973.00	1.93	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5180	755.40	0.00	0.00	0.00	0.00	0.00	755.40	2117.68	0.15	4728.26	2.30	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9096	872.88	0.00	0.00	0.00	0.00	0.00	872.88	2315.32	0.16	5600.98	2.72	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9088	572.65	0.00	0.00	0.00	0.00	0.00	572.65	2543.70	0.18	6173.46	3.00	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2119	63.57	0.00	0.00	0.00	0.00	0.00	63.57	2693.51	0.19	6236.84	3.03	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	2710.10	0.19	6274.11	3.05	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	2719.85	0.19	6311.38	3.06	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0261	7.83	0.00	0.00	0.00	0.00	0.00	7.83	2729.60	0.19	6319.02	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.60	0.19	6318.83	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.55	0.19	6318.64	3.07	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.50	0.19	6318.45	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.45	0.19	6318.26	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.40	0.19	6318.07	3.07	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.35	0.19	6317.89	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.30	0.19	6317.70	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.26	0.19	6317.51	3.07	0.00	0.00
					Total volume (cf)		6322.90								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0266	7.98	0.00	0.00	0.00	0.00	0.00	7.98	1078.00	0.07	7.90	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1080.07	0.08	17.40	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1082.55	0.08	26.91	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1085.04	0.08	36.41	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1087.53	0.08	45.90	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1090.01	0.08	57.00	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1092.92	0.08	68.10	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1095.82	0.08	79.19	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1098.72	0.08	90.29	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1101.63	0.08	101.38	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1104.53	0.08	112.48	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1107.43	0.08	125.17	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1110.75	0.08	137.86	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1114.07	0.08	150.55	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1117.40	0.08	163.23	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1120.72	0.08	175.92	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1124.04	0.08	188.61	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1127.36	0.08	201.30	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1130.68	0.08	213.99	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1134.00	0.08	226.68	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1137.32	0.08	239.37	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1140.64	0.08	252.06	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1143.96	0.08	264.74	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1147.28	0.08	279.03	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1151.02	0.08	291.71	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1154.34	0.08	306.00	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1158.08	0.08	320.28	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1161.81	0.08	334.56	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1165.55	0.08	348.84	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1169.29	0.08	363.13	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1173.02	0.08	377.41	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1176.76	0.08	391.69	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1180.50	0.08	407.57	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1184.65	0.08	423.44	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1188.81	0.08	439.32	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1192.96	0.08	455.19	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1197.12	0.08	471.07	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1201.27	0.08	488.54	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1205.84	0.08	506.01	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1210.42	0.08	523.48	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0638	19.15	0.00	0.00	0.00	0.00	0.00	19.15	1214.99	0.08	542.55	0.26	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0692	20.75	0.00	0.00	0.00	0.00	0.00	20.75	1219.98	0.08	563.21	0.27	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0864	25.92	0.00	0.00	0.00	0.00	0.00	25.92	1225.38	0.09	589.05	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0864	25.92	0.00	0.00	0.00	0.00	0.00	25.92	1232.15	0.09	614.89	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1396	41.88	0.00	0.00	0.00	0.00	0.00	41.88	1238.91	0.09	656.68	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1396	41.88	0.00	0.00	0.00	0.00	0.00	41.88	1249.85	0.09	698.48	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1928	57.84	0.00	0.00	0.00	0.00	0.00	57.84	1260.78	0.09	756.23	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1928	57.84	0.00	0.00	0.00	0.00	0.00	57.84	1275.90	0.09	813.98	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2460	73.80	0.00	0.00	0.00	0.00	0.00	73.80	1291.01	0.09	887.69	0.43	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2992	89.76	0.00	0.00	0.00	0.00	0.00	89.76	1310.30	0.09	977.36	0.47	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3524	105.72	0.00	0.00	0.00	0.00	0.00	105.72	1333.76	0.09	1082.99	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4056	121.68	0.00	0.00	0.00	0.00	0.00	121.68	1361.40	0.09	1204.57	0.58	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4588	137.64	0.00	0.00	0.00	0.00	0.00	137.64	1393.22	0.10	1342.11	0.65	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4588	137.64	0.00	0.00	0.00	0.00	0.00	137.64	1429.21	0.10	1479.64	0.72	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5120	153.59	0.00	0.00	0.00	0.00	0.00	153.59	1465.20	0.10	1633.14	0.79	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5652	169.55	0.00	0.00	0.00	0.00	0.00	169.55	1505.37	0.10	1802.59	0.88	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6184	185.51	0.00	0.00	0.00	0.00	0.00	185.51	1549.71	0.11	1987.99	0.97	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6184	185.51	0.00	0.00	0.00	0.00	0.00	185.51	1598.23	0.11	2173.39	1.06	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6716	201.47	0.00	0.00	0.00	0.00	0.00	201.47	1646.75	0.11	2374.75	1.15	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7248	217.43	0.00	0.00	0.00	0.00	0.00	217.43	1699.44	0.12	2592.06	1.26	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9907	297.22	0.00	0.00	0.00	0.00	0.00	297.22	1756.31	0.12	2889.16	1.40	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2567	377.02	0.00	0.00	0.00	0.00	0.00	377.02	1834.06	0.13	3266.06	1.59	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4163	424.90	0.00	0.00	0.00	0.00	0.00	424.90	1932.68	0.13	3690.82	1.79	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5759	472.77	0.00	0.00	0.00	0.00	0.00	472.77	2043.84	0.14	4163.45	2.02	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8419	552.57	0.00	0.00	0.00	0.00	0.00	552.57	2167.52	0.15	4715.87	2.29	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3207	696.20	0.00	0.00	0.00	0.00	0.00	696.20	2312.08	0.16	5411.91	2.63	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3524	105.72	0.00	0.00	0.00	0.00	0.00	105.72	2494.22	0.17	5517.45	2.68	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	2521.84	0.18	5531.64	2.69	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	2525.55	0.18	5541.04	2.69	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0266	7.98	0.00	0.00	0.00	0.00	0.00	7.98	2528.01	0.18	5548.84	2.69	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0160	4.79	0.00	0.00	0.00	0.00	0.00	4.79	2530.06	0.18	5553.45	2.70	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0106	3.19	0.00	0.00	0.00	0.00	0.00	3.19	2531.26	0.18	5556.47	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2532.05	0.18	5556.29	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2532.01	0.18	5556.12	2.70	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.96	0.18	5555.94	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.91	0.18	5555.77	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.87	0.18	5555.59	2.70	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.82	0.18	5555.41	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.78	0.18	5555.24	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.73	0.18	5555.06	2.70	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.68	0.18	5554.89	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.64	0.18	5554.71	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.59	0.18	5554.54	2.70	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.55	0.18	5554.36	2.70	0.00	0.00
					Total volume (cf)			5563.43								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1078.00	0.22	4.03	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1079.05	0.22	10.18	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1080.66	0.23	16.34	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1082.28	0.23	24.62	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1084.44	0.23	30.77	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1086.05	0.23	36.92	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1087.66	0.23	43.08	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1089.27	0.23	51.36	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1091.44	0.23	59.63	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1093.61	0.23	67.91	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1095.77	0.23	78.32	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1098.49	0.23	88.72	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1101.22	0.23	99.12	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1103.94	0.23	109.52	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1106.66	0.23	119.93	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1109.38	0.23	132.45	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1112.66	0.23	144.98	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1115.94	0.23	159.63	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1119.77	0.23	174.29	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1123.61	0.23	191.06	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1128.00	0.23	203.59	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1131.28	0.24	218.24	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1135.11	0.24	235.01	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1139.50	0.24	251.79	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0213	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1143.89	0.24	270.69	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0213	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1148.83	0.24	289.58	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1153.78	0.24	310.61	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1159.28	0.24	331.63	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1164.78	0.24	352.65	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0260	23.39	0.00	0.00	0.00	0.00	0.00	23.39	1170.28	0.24	375.80	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0284	25.52	0.00	0.00	0.00	0.00	0.00	25.52	1176.34	0.25	401.07	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0307	27.64	0.00	0.00	0.00	0.00	0.00	27.64	1182.96	0.25	428.47	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1190.12	0.25	460.12	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1198.41	0.25	491.77	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0378	34.02	0.00	0.00	0.00	0.00	0.00	34.02	1206.69	0.25	525.54	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0402	36.15	0.00	0.00	0.00	0.00	0.00	36.15	1215.53	0.25	561.43	0.27	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1224.92	0.26	601.58	0.29	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1235.43	0.26	643.85	0.31	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0496	44.66	0.00	0.00	0.00	0.00	0.00	44.66	1246.49	0.26	688.25	0.33	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0520	46.78	0.00	0.00	0.00	0.00	0.00	46.78	1258.11	0.26	734.77	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1270.28	0.26	766.40	0.37	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1278.56	0.27	798.03	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1286.83	0.27	840.29	0.41	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1297.89	0.27	882.55	0.43	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1308.95	0.27	922.68	0.45	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1319.45	0.27	962.81	0.47	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0402	36.15	0.00	0.00	0.00	0.00	0.00	36.15	1329.95	0.28	998.68	0.48	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0425	38.28	0.00	0.00	0.00	0.00	0.00	38.28	1339.34	0.28	1036.68	0.50	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0591	53.16	0.00	0.00	0.00	0.00	0.00	53.16	1349.28	0.28	1089.56	0.53	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0614	55.29	0.00	0.00	0.00	0.00	0.00	55.29	1363.12	0.28	1144.56	0.56	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0728	65.51	0.00	0.00	0.00	0.00	0.00	65.51	1377.52	0.29	1209.79	0.59	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.1053	94.77	0.00	0.00	0.00	0.00	0.00	94.77	1394.58	0.29	1304.27	0.63	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2322	208.99	0.00	0.00	0.00	0.00	0.00	208.99	1419.31	0.30	1512.97	0.73	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2409	216.79	0.00	0.00	0.00	0.00	0.00	216.79	1473.92	0.31	1729.45	0.84	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1530.57	0.32	1778.04	0.86	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1543.29	0.32	1826.63	0.89	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.1008	90.72	0.00	0.00	0.00	0.00	0.00	90.72	1556.00	0.32	1917.03	0.93	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0854	76.85	0.00	0.00	0.00	0.00	0.00	76.85	1579.66	0.33	1993.55	0.97	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0935	84.13	0.00	0.00	0.00	0.00	0.00	84.13	1599.68	0.33	2077.34	1.01	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0778	70.03	0.00	0.00	0.00	0.00	0.00	70.03	1621.61	0.34	2147.03	1.04	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0620	55.83	0.00	0.00	0.00	0.00	0.00	55.83	1639.85	0.34	2202.52	1.07	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1654.37	0.34	2251.09	1.09	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1667.08	0.35	2291.14	1.11	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1677.56	0.35	2331.20	1.13	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1688.04	0.35	2339.35	1.14	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1690.18	0.35	2347.50	1.14	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1692.31	0.35	2353.53	1.14	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1693.89	0.35	2359.56	1.15	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1695.46	0.35	2369.84	1.15	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1698.15	0.35	2380.11	1.16	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1700.84	0.35	2390.39	1.16	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1703.53	0.35	2398.54	1.16	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1705.67	0.36	2406.69	1.17	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1707.80	0.36	2414.84	1.17	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1709.93	0.36	2420.87	1.18	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1711.51	0.36	2424.76	1.18	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1712.53	0.36	2430.79	1.18	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1714.10	0.36	2438.93	1.18	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1716.24	0.36	2444.96	1.19	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1717.81	0.36	2448.85	1.19	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1718.83	0.36	2454.87	1.19	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1720.41	0.36	2460.89	1.19	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1721.98	0.36	2466.91	1.20	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1723.56	0.36	2470.81	1.20	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1724.58	0.36	2476.83	1.20	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1726.15	0.36	2480.72	1.20	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1727.17	0.36	2486.74	1.21	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1728.75	0.36	2490.63	1.21	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1729.77	0.36	2496.65	1.21	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1731.34	0.36	2500.55	1.21	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1732.36	0.36	2504.44	1.22	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1733.38	0.36	2508.33	1.22	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1734.40	0.36	2512.22	1.22	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1735.41	0.36	2516.11	1.22	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1736.43	0.36	2520.00	1.22	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1737.45	0.36	2523.89	1.23	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1738.47	0.36	2523.53	1.23	0.00	0.00
						Total volume (cf)		2552.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 3

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 4

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 5

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.16ac+0.09ac typ street frontage=1.25ac

			5/7/2024	LOT 6	
Drainage Area (ac.)	1.2500		JOB NUMBER 22106		
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3304 s.f. Bot. = 1123 s.f. Max. Depth (d)= 4 Max. storage= 8470.98 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6393	191.78	0.00	0.00	0.00	0.00	0.00	191.78	1123.00	0.08	191.71	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	1.0402	312.07	0.00	0.00	0.00	0.00	0.00	312.07	1172.36	0.08	503.70	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.1496	344.88	0.00	0.00	0.00	0.00	0.00	344.88	1252.69	0.09	848.49	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0767	323.01	0.00	0.00	0.00	0.00	0.00	323.01	1341.46	0.09	1171.40	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6964	508.91	0.00	0.00	0.00	0.00	0.00	508.91	1424.60	0.10	1680.21	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.9515	585.46	0.00	0.00	0.00	0.00	0.00	585.46	1555.60	0.11	2265.56	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.3525	705.75	0.00	0.00	0.00	0.00	0.00	705.75	1706.31	0.12	2971.19	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.5712	771.36	0.00	0.00	0.00	0.00	0.00	771.36	1887.98	0.13	3742.42	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.7741	1132.23	0.00	0.00	0.00	0.00	0.00	1132.23	2086.55	0.14	4874.50	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.7060	1711.80	0.00	0.00	0.00	0.00	0.00	1711.80	2378.02	0.17	6586.13	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	5.1592	1547.77	0.00	0.00	0.00	0.00	0.00	1547.77	2818.71	0.20	8133.71	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.8215	246.46	0.00	0.00	0.00	0.00	0.00	246.46	3217.16	0.22	8379.95	3.96	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.56	0.23	8379.72	3.96	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.50	0.23	8379.49	3.96	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.44	0.23	8379.26	3.96	0.00	0.00	
					Total volume (cf)			8381.47											Total Overflow (cf)		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1123.00	0.08	18.21	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1127.69	0.08	36.42	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0516	15.47	0.00	0.00	0.00	0.00	0.00	15.47	1132.38	0.08	51.81	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1136.34	0.08	72.83	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1141.75	0.08	93.85	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1147.16	0.08	134.14	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1157.54	0.08	155.16	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1162.95	0.08	195.44	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1173.32	0.08	235.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1183.69	0.08	256.75	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0750	22.51	0.00	0.00	0.00	0.00	0.00	22.51	1189.10	0.08	279.17	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1194.88	0.08	319.45	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1205.25	0.08	416.00	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1230.11	0.09	512.55	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1254.96	0.09	609.09	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	1279.82	0.09	677.50	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.5097	152.90	0.00	0.00	0.00	0.00	0.00	152.90	1297.44	0.09	830.31	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1336.78	0.09	997.18	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.4159	124.76	0.00	0.00	0.00	0.00	0.00	124.76	1379.74	0.10	1121.85	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1411.84	0.10	1288.72	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.8379	251.36	0.00	0.00	0.00	0.00	0.00	251.36	1454.80	0.10	1539.98	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1519.49	0.11	1763.10	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6503	195.10	0.00	0.00	0.00	0.00	0.00	195.10	1576.94	0.11	1958.09	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6972	209.16	0.00	0.00	0.00	0.00	0.00	209.16	1627.14	0.11	2167.13	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1680.97	0.12	2390.25	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.2599	377.96	0.00	0.00	0.00	0.00	0.00	377.96	1738.41	0.12	2768.08	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.6350	490.49	0.00	0.00	0.00	0.00	0.00	490.49	1835.69	0.13	3258.44	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.9316	279.49	0.00	0.00	0.00	0.00	0.00	279.49	1961.94	0.14	3537.80	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.4789	743.68	0.00	0.00	0.00	0.00	0.00	743.68	2033.87	0.14	4281.34	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.7134	814.01	0.00	0.00	0.00	0.00	0.00	814.01	2225.30	0.15	5095.19	2.41	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	3.1354	940.61	0.00	0.00	0.00	0.00	0.00	940.61	2434.85	0.17	6035.63	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	2.0569	617.08	0.00	0.00	0.00	0.00	0.00	617.08	2676.98	0.19	6652.53	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	2835.81	0.20	6720.83	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2853.39	0.20	6761.00	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2863.74	0.20	6801.17	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	2874.08	0.20	6809.41	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.20	0.20	6809.21	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.15	0.20	6809.01	3.22	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.10	0.20	6808.81	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.04	0.20	6808.61	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.99	0.20	6808.41	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.94	0.20	6808.21	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.89	0.20	6808.01	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.84	0.20	6807.81	3.21	0.00	0.00
					Total volume (cf)		6813.47								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	1123.00	0.08	8.52	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1125.19	0.08	18.76	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1127.83	0.08	29.00	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1130.47	0.08	39.24	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1133.10	0.08	49.48	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1135.74	0.08	61.44	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1138.82	0.08	73.40	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1141.90	0.08	85.36	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1144.98	0.08	97.32	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1148.06	0.08	109.27	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1151.13	0.08	121.23	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1154.21	0.08	134.91	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1157.73	0.08	148.59	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1161.26	0.08	162.26	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1164.78	0.08	175.94	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1168.30	0.08	189.62	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1171.82	0.08	203.29	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1175.34	0.08	216.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1178.86	0.08	230.65	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1182.38	0.08	244.32	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1185.90	0.08	258.00	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1189.43	0.08	271.67	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1192.95	0.08	285.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1196.47	0.08	300.74	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1200.43	0.08	314.41	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1203.95	0.08	329.81	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1207.91	0.08	345.20	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1211.88	0.08	360.60	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1215.84	0.08	375.99	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1219.80	0.08	391.38	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1223.77	0.08	406.77	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1227.73	0.09	422.17	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1231.69	0.09	439.28	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1236.10	0.09	456.39	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1240.50	0.09	473.50	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1244.91	0.09	490.61	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1249.32	0.09	507.72	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1253.72	0.09	526.55	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1258.57	0.09	545.38	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1263.42	0.09	564.21	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0688	20.64	0.00	0.00	0.00	0.00	0.00	20.64	1268.27	0.09	584.76	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0745	22.36	0.00	0.00	0.00	0.00	0.00	22.36	1273.56	0.09	607.02	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1279.29	0.09	634.87	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1286.46	0.09	662.72	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1293.63	0.09	707.76	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1305.22	0.09	752.80	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1316.82	0.09	815.04	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1332.84	0.09	877.27	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2651	79.53	0.00	0.00	0.00	0.00	0.00	79.53	1348.87	0.09	956.70	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3224	96.72	0.00	0.00	0.00	0.00	0.00	96.72	1369.32	0.10	1053.33	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	1394.20	0.10	1167.15	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.4371	131.12	0.00	0.00	0.00	0.00	0.00	131.12	1423.50	0.10	1298.17	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1457.24	0.10	1446.39	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1495.40	0.10	1594.60	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.5517	165.51	0.00	0.00	0.00	0.00	0.00	165.51	1533.56	0.11	1760.00	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.6090	182.71	0.00	0.00	0.00	0.00	0.00	182.71	1576.14	0.11	1942.60	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1623.16	0.11	2142.39	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1674.60	0.12	2342.18	1.11	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.7237	217.10	0.00	0.00	0.00	0.00	0.00	217.10	1726.03	0.12	2559.16	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.7810	234.30	0.00	0.00	0.00	0.00	0.00	234.30	1781.90	0.12	2793.34	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	1.0676	320.29	0.00	0.00	0.00	0.00	0.00	320.29	1842.19	0.13	3113.50	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.3542	406.27	0.00	0.00	0.00	0.00	0.00	406.27	1924.62	0.13	3519.64	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.5262	457.86	0.00	0.00	0.00	0.00	0.00	457.86	2029.19	0.14	3977.36	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.6982	509.45	0.00	0.00	0.00	0.00	0.00	509.45	2147.04	0.15	4486.66	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.9848	595.44	0.00	0.00	0.00	0.00	0.00	595.44	2278.17	0.16	5081.94	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	2.5007	750.21	0.00	0.00	0.00	0.00	0.00	750.21	2431.43	0.17	5831.99	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	2624.55	0.18	5945.73	2.81	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	2653.83	0.18	5961.02	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	2657.77	0.18	5971.15	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	2660.38	0.18	5979.57	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0172	5.16	0.00	0.00	0.00	0.00	0.00	5.16	2662.54	0.18	5984.54	2.83	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	2663.82	0.18	5987.80	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.66	0.19	5987.61	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.61	0.19	5987.43	2.83	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.57	0.19	5987.24	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.52	0.19	5987.06	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.47	0.19	5986.87	2.83	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.42	0.19	5986.69	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.37	0.19	5986.50	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.33	0.19	5986.32	2.83	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.28	0.19	5986.13	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.23	0.19	5985.95	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.18	0.19	5985.76	2.83	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.14	0.19	5985.58	2.83	0.00	0.00
					Total volume (cf)		5995.07									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1123.00	0.23	4.35	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1124.12	0.23	10.99	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1125.83	0.23	17.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1127.54	0.23	26.56	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1129.84	0.24	33.20	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1131.55	0.24	39.84	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1133.26	0.24	46.48	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1134.97	0.24	55.40	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1137.26	0.24	64.33	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1139.56	0.24	73.26	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1141.86	0.24	84.48	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1144.75	0.24	95.70	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1147.64	0.24	106.92	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1150.53	0.24	118.14	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1153.42	0.24	129.35	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1156.30	0.24	142.86	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1159.78	0.24	156.37	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1163.26	0.24	172.16	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1167.33	0.24	187.96	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1171.39	0.24	206.05	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1176.05	0.25	219.55	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1179.53	0.25	235.35	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1183.59	0.25	253.43	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1188.25	0.25	271.52	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1192.91	0.25	291.89	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1198.15	0.25	312.26	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1203.40	0.25	334.93	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1209.23	0.25	357.59	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1215.07	0.25	380.25	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0280	25.21	0.00	0.00	0.00	0.00	0.00	25.21	1220.90	0.25	405.20	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0306	27.50	0.00	0.00	0.00	0.00	0.00	27.50	1227.33	0.26	432.44	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0331	29.79	0.00	0.00	0.00	0.00	0.00	29.79	1234.34	0.26	461.98	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1241.94	0.26	496.09	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1250.73	0.26	530.20	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0407	36.66	0.00	0.00	0.00	0.00	0.00	36.66	1259.51	0.26	566.60	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1268.88	0.26	605.29	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1278.84	0.27	648.56	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1289.98	0.27	694.12	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0535	48.12	0.00	0.00	0.00	0.00	0.00	48.12	1301.71	0.27	741.97	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0560	50.41	0.00	0.00	0.00	0.00	0.00	50.41	1314.03	0.27	792.11	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1326.94	0.28	826.20	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1335.72	0.28	860.30	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1344.50	0.28	905.84	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1356.23	0.28	951.39	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1367.95	0.28	994.64	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1379.09	0.29	1037.89	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1390.22	0.29	1076.56	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0458	41.25	0.00	0.00	0.00	0.00	0.00	41.25	1400.18	0.29	1117.51	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0637	57.29	0.00	0.00	0.00	0.00	0.00	57.29	1410.72	0.29	1174.50	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0662	59.58	0.00	0.00	0.00	0.00	0.00	59.58	1425.40	0.30	1233.78	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0784	70.59	0.00	0.00	0.00	0.00	0.00	70.59	1440.66	0.30	1304.08	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1135	102.13	0.00	0.00	0.00	0.00	0.00	102.13	1458.76	0.30	1405.90	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2502	225.21	0.00	0.00	0.00	0.00	0.00	225.21	1484.97	0.31	1630.80	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2596	233.61	0.00	0.00	0.00	0.00	0.00	233.61	1542.88	0.32	1864.09	0.88	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1602.94	0.33	1916.46	0.90	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1616.43	0.34	1968.83	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1086	97.76	0.00	0.00	0.00	0.00	0.00	97.76	1629.91	0.34	2066.25	0.98	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0920	82.81	0.00	0.00	0.00	0.00	0.00	82.81	1654.99	0.34	2148.71	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.1007	90.65	0.00	0.00	0.00	0.00	0.00	90.65	1676.22	0.35	2239.02	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0839	75.47	0.00	0.00	0.00	0.00	0.00	75.47	1699.47	0.35	2314.13	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0668	60.16	0.00	0.00	0.00	0.00	0.00	60.16	1718.81	0.36	2373.93	1.12	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1734.21	0.36	2426.28	1.15	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1747.69	0.36	2469.45	1.17	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1758.80	0.37	2512.62	1.19	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1769.92	0.37	2521.42	1.19	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1772.18	0.37	2530.21	1.19	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1774.45	0.37	2536.72	1.20	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1776.12	0.37	2543.22	1.20	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1777.80	0.37	2554.31	1.21	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1780.65	0.37	2565.40	1.21	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1783.51	0.37	2576.48	1.22	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1786.36	0.37	2585.28	1.22	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1788.62	0.37	2594.07	1.22	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1790.89	0.37	2602.86	1.23	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1793.15	0.37	2609.36	1.23	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1794.82	0.37	2613.57	1.23	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1795.91	0.37	2620.07	1.24	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1797.58	0.37	2628.86	1.24	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1799.85	0.37	2635.36	1.24	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1801.52	0.38	2639.57	1.25	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1802.60	0.38	2646.07	1.25	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1804.28	0.38	2652.57	1.25	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1805.95	0.38	2659.06	1.26	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1807.62	0.38	2663.27	1.26	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1808.70	0.38	2669.77	1.26	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1810.38	0.38	2673.97	1.26	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1811.46	0.38	2680.47	1.27	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1813.13	0.38	2684.68	1.27	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1814.22	0.38	2691.17	1.27	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1815.89	0.38	2695.38	1.27	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1816.97	0.38	2699.58	1.27	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1818.05	0.38	2703.79	1.28	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1819.14	0.38	2707.99	1.28	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1820.22	0.38	2712.19	1.28	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1821.30	0.38	2716.40	1.28	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1822.38	0.38	2720.60	1.28	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1823.46	0.38	2720.22	1.28	0.00	0.00
					Total volume (cf)		2750.10									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.16ac+0.09ac typ street frontage=1.25ac

			5/7/2024	LOT 7	
Drainage Area (ac.)	1.2500		JOB NUMBER 22106		
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3304 s.f. Bot. = 1123 s.f. Max. Depth (d)= 4 Max. storage= 8470.98 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6393	191.78	0.00	0.00	0.00	0.00	0.00	191.78	1123.00	0.08	191.71	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	1.0402	312.07	0.00	0.00	0.00	0.00	0.00	312.07	1172.36	0.08	503.70	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.1496	344.88	0.00	0.00	0.00	0.00	0.00	344.88	1252.69	0.09	848.49	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0767	323.01	0.00	0.00	0.00	0.00	0.00	323.01	1341.46	0.09	1171.40	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6964	508.91	0.00	0.00	0.00	0.00	0.00	508.91	1424.60	0.10	1680.21	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.9515	585.46	0.00	0.00	0.00	0.00	0.00	585.46	1555.60	0.11	2265.56	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.3525	705.75	0.00	0.00	0.00	0.00	0.00	705.75	1706.31	0.12	2971.19	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.5712	771.36	0.00	0.00	0.00	0.00	0.00	771.36	1887.98	0.13	3742.42	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.7741	1132.23	0.00	0.00	0.00	0.00	0.00	1132.23	2086.55	0.14	4874.50	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.7060	1711.80	0.00	0.00	0.00	0.00	0.00	1711.80	2378.02	0.17	6586.13	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	5.1592	1547.77	0.00	0.00	0.00	0.00	0.00	1547.77	2818.71	0.20	8133.71	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.8215	246.46	0.00	0.00	0.00	0.00	0.00	246.46	3217.16	0.22	8379.95	3.96	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.56	0.23	8379.72	3.96	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.50	0.23	8379.49	3.96	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.44	0.23	8379.26	3.96	0.00	0.00	
					Total volume (cf)			8381.47											Total Overflow (cf)		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1123.00	0.08	18.21	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1127.69	0.08	36.42	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0516	15.47	0.00	0.00	0.00	0.00	0.00	15.47	1132.38	0.08	51.81	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1136.34	0.08	72.83	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1141.75	0.08	93.85	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1147.16	0.08	134.14	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1157.54	0.08	155.16	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1162.95	0.08	195.44	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1173.32	0.08	235.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1183.69	0.08	256.75	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0750	22.51	0.00	0.00	0.00	0.00	0.00	22.51	1189.10	0.08	279.17	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1194.88	0.08	319.45	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1205.25	0.08	416.00	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1230.11	0.09	512.55	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1254.96	0.09	609.09	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	1279.82	0.09	677.50	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.5097	152.90	0.00	0.00	0.00	0.00	0.00	152.90	1297.44	0.09	830.31	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1336.78	0.09	997.18	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.4159	124.76	0.00	0.00	0.00	0.00	0.00	124.76	1379.74	0.10	1121.85	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1411.84	0.10	1288.72	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.8379	251.36	0.00	0.00	0.00	0.00	0.00	251.36	1454.80	0.10	1539.98	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1519.49	0.11	1763.10	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6503	195.10	0.00	0.00	0.00	0.00	0.00	195.10	1576.94	0.11	1958.09	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6972	209.16	0.00	0.00	0.00	0.00	0.00	209.16	1627.14	0.11	2167.13	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1680.97	0.12	2390.25	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.2599	377.96	0.00	0.00	0.00	0.00	0.00	377.96	1738.41	0.12	2768.08	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.6350	490.49	0.00	0.00	0.00	0.00	0.00	490.49	1835.69	0.13	3258.44	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.9316	279.49	0.00	0.00	0.00	0.00	0.00	279.49	1961.94	0.14	3537.80	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.4789	743.68	0.00	0.00	0.00	0.00	0.00	743.68	2033.87	0.14	4281.34	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.7134	814.01	0.00	0.00	0.00	0.00	0.00	814.01	2225.30	0.15	5095.19	2.41	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	3.1354	940.61	0.00	0.00	0.00	0.00	0.00	940.61	2434.85	0.17	6035.63	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	2.0569	617.08	0.00	0.00	0.00	0.00	0.00	617.08	2676.98	0.19	6652.53	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	2835.81	0.20	6720.83	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2853.39	0.20	6761.00	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2863.74	0.20	6801.17	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	2874.08	0.20	6809.41	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.20	0.20	6809.21	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.15	0.20	6809.01	3.22	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.10	0.20	6808.81	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.04	0.20	6808.61	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.99	0.20	6808.41	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.94	0.20	6808.21	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.89	0.20	6808.01	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.84	0.20	6807.81	3.21	0.00	0.00
					Total volume (cf)		6813.47								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	1123.00	0.08	8.52	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1125.19	0.08	18.76	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1127.83	0.08	29.00	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1130.47	0.08	39.24	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1133.10	0.08	49.48	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1135.74	0.08	61.44	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1138.82	0.08	73.40	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1141.90	0.08	85.36	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1144.98	0.08	97.32	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1148.06	0.08	109.27	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1151.13	0.08	121.23	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1154.21	0.08	134.91	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1157.73	0.08	148.59	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1161.26	0.08	162.26	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1164.78	0.08	175.94	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1168.30	0.08	189.62	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1171.82	0.08	203.29	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1175.34	0.08	216.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1178.86	0.08	230.65	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1182.38	0.08	244.32	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1185.90	0.08	258.00	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1189.43	0.08	271.67	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1192.95	0.08	285.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1196.47	0.08	300.74	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1200.43	0.08	314.41	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1203.95	0.08	329.81	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1207.91	0.08	345.20	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1211.88	0.08	360.60	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1215.84	0.08	375.99	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1219.80	0.08	391.38	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1223.77	0.08	406.77	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1227.73	0.09	422.17	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1231.69	0.09	439.28	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1236.10	0.09	456.39	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1240.50	0.09	473.50	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1244.91	0.09	490.61	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1249.32	0.09	507.72	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1253.72	0.09	526.55	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1258.57	0.09	545.38	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1263.42	0.09	564.21	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0688	20.64	0.00	0.00	0.00	0.00	0.00	20.64	1268.27	0.09	584.76	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0745	22.36	0.00	0.00	0.00	0.00	0.00	22.36	1273.56	0.09	607.02	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1279.29	0.09	634.87	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1286.46	0.09	662.72	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1293.63	0.09	707.76	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1305.22	0.09	752.80	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1316.82	0.09	815.04	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1332.84	0.09	877.27	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2651	79.53	0.00	0.00	0.00	0.00	0.00	79.53	1348.87	0.09	956.70	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3224	96.72	0.00	0.00	0.00	0.00	0.00	96.72	1369.32	0.10	1053.33	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	1394.20	0.10	1167.15	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.4371	131.12	0.00	0.00	0.00	0.00	0.00	131.12	1423.50	0.10	1298.17	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1457.24	0.10	1446.39	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1495.40	0.10	1594.60	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.5517	165.51	0.00	0.00	0.00	0.00	0.00	165.51	1533.56	0.11	1760.00	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.6090	182.71	0.00	0.00	0.00	0.00	0.00	182.71	1576.14	0.11	1942.60	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1623.16	0.11	2142.39	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1674.60	0.12	2342.18	1.11	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.7237	217.10	0.00	0.00	0.00	0.00	0.00	217.10	1726.03	0.12	2559.16	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.7810	234.30	0.00	0.00	0.00	0.00	0.00	234.30	1781.90	0.12	2793.34	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	1.0676	320.29	0.00	0.00	0.00	0.00	0.00	320.29	1842.19	0.13	3113.50	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.3542	406.27	0.00	0.00	0.00	0.00	0.00	406.27	1924.62	0.13	3519.64	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.5262	457.86	0.00	0.00	0.00	0.00	0.00	457.86	2029.19	0.14	3977.36	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.6982	509.45	0.00	0.00	0.00	0.00	0.00	509.45	2147.04	0.15	4486.66	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.9848	595.44	0.00	0.00	0.00	0.00	0.00	595.44	2278.17	0.16	5081.94	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	2.5007	750.21	0.00	0.00	0.00	0.00	0.00	750.21	2431.43	0.17	5831.99	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	2624.55	0.18	5945.73	2.81	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	2653.83	0.18	5961.02	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	2657.77	0.18	5971.15	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	2660.38	0.18	5979.57	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0172	5.16	0.00	0.00	0.00	0.00	0.00	5.16	2662.54	0.18	5984.54	2.83	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	2663.82	0.18	5987.80	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.66	0.19	5987.61	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.61	0.19	5987.43	2.83	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.57	0.19	5987.24	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.52	0.19	5987.06	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.47	0.19	5986.87	2.83	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.42	0.19	5986.69	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.37	0.19	5986.50	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.33	0.19	5986.32	2.83	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.28	0.19	5986.13	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.23	0.19	5985.95	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.18	0.19	5985.76	2.83	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.14	0.19	5985.58	2.83	0.00	0.00
					Total volume (cf)		5995.07									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1123.00	0.23	4.35	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1124.12	0.23	10.99	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1125.83	0.23	17.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1127.54	0.23	26.56	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1129.84	0.24	33.20	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1131.55	0.24	39.84	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1133.26	0.24	46.48	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1134.97	0.24	55.40	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1137.26	0.24	64.33	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1139.56	0.24	73.26	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1141.86	0.24	84.48	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1144.75	0.24	95.70	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1147.64	0.24	106.92	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1150.53	0.24	118.14	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1153.42	0.24	129.35	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1156.30	0.24	142.86	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1159.78	0.24	156.37	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1163.26	0.24	172.16	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1167.33	0.24	187.96	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1171.39	0.24	206.05	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1176.05	0.25	219.55	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1179.53	0.25	235.35	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1183.59	0.25	253.43	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1188.25	0.25	271.52	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1192.91	0.25	291.89	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1198.15	0.25	312.26	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1203.40	0.25	334.93	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1209.23	0.25	357.59	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1215.07	0.25	380.25	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0280	25.21	0.00	0.00	0.00	0.00	0.00	25.21	1220.90	0.25	405.20	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0306	27.50	0.00	0.00	0.00	0.00	0.00	27.50	1227.33	0.26	432.44	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0331	29.79	0.00	0.00	0.00	0.00	0.00	29.79	1234.34	0.26	461.98	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1241.94	0.26	496.09	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1250.73	0.26	530.20	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0407	36.66	0.00	0.00	0.00	0.00	0.00	36.66	1259.51	0.26	566.60	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1268.88	0.26	605.29	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1278.84	0.27	648.56	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1289.98	0.27	694.12	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0535	48.12	0.00	0.00	0.00	0.00	0.00	48.12	1301.71	0.27	741.97	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0560	50.41	0.00	0.00	0.00	0.00	0.00	50.41	1314.03	0.27	792.11	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1326.94	0.28	826.20	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1335.72	0.28	860.30	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1344.50	0.28	905.84	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1356.23	0.28	951.39	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1367.95	0.28	994.64	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1379.09	0.29	1037.89	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1390.22	0.29	1076.56	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0458	41.25	0.00	0.00	0.00	0.00	0.00	41.25	1400.18	0.29	1117.51	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0637	57.29	0.00	0.00	0.00	0.00	0.00	57.29	1410.72	0.29	1174.50	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0662	59.58	0.00	0.00	0.00	0.00	0.00	59.58	1425.40	0.30	1233.78	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0784	70.59	0.00	0.00	0.00	0.00	0.00	70.59	1440.66	0.30	1304.08	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1135	102.13	0.00	0.00	0.00	0.00	0.00	102.13	1458.76	0.30	1405.90	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2502	225.21	0.00	0.00	0.00	0.00	0.00	225.21	1484.97	0.31	1630.80	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2596	233.61	0.00	0.00	0.00	0.00	0.00	233.61	1542.88	0.32	1864.09	0.88	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1602.94	0.33	1916.46	0.90	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1616.43	0.34	1968.83	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1086	97.76	0.00	0.00	0.00	0.00	0.00	97.76	1629.91	0.34	2066.25	0.98	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0920	82.81	0.00	0.00	0.00	0.00	0.00	82.81	1654.99	0.34	2148.71	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.1007	90.65	0.00	0.00	0.00	0.00	0.00	90.65	1676.22	0.35	2239.02	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0839	75.47	0.00	0.00	0.00	0.00	0.00	75.47	1699.47	0.35	2314.13	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0668	60.16	0.00	0.00	0.00	0.00	0.00	60.16	1718.81	0.36	2373.93	1.12	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1734.21	0.36	2426.28	1.15	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1747.69	0.36	2469.45	1.17	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1758.80	0.37	2512.62	1.19	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1769.92	0.37	2521.42	1.19	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1772.18	0.37	2530.21	1.19	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1774.45	0.37	2536.72	1.20	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1776.12	0.37	2543.22	1.20	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1777.80	0.37	2554.31	1.21	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1780.65	0.37	2565.40	1.21	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1783.51	0.37	2576.48	1.22	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1786.36	0.37	2585.28	1.22	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1788.62	0.37	2594.07	1.22	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1790.89	0.37	2602.86	1.23	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1793.15	0.37	2609.36	1.23	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1794.82	0.37	2613.57	1.23	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1795.91	0.37	2620.07	1.24	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1797.58	0.37	2628.86	1.24	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1799.85	0.37	2635.36	1.24	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1801.52	0.38	2639.57	1.25	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1802.60	0.38	2646.07	1.25	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1804.28	0.38	2652.57	1.25	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1805.95	0.38	2659.06	1.26	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1807.62	0.38	2663.27	1.26	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1808.70	0.38	2669.77	1.26	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1810.38	0.38	2673.97	1.26	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1811.46	0.38	2680.47	1.27	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1813.13	0.38	2684.68	1.27	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1814.22	0.38	2691.17	1.27	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1815.89	0.38	2695.38	1.27	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1816.97	0.38	2699.58	1.27	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1818.05	0.38	2703.79	1.28	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1819.14	0.38	2707.99	1.28	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1820.22	0.38	2712.19	1.28	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1821.30	0.38	2716.40	1.28	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1822.38	0.38	2720.60	1.28	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1823.46	0.38	2720.22	1.28	0.00	0.00
					Total volume (cf)		2750.10									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.98ac+0.09ac typ street frontage=1.07ac

5/7/2024 LOT 8

Drainage Area (ac.)	1.0700	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5472	164.17	0.00	0.00	0.00	0.00	0.00	164.17	1078.00	0.07	164.09	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.8904	267.13	0.00	0.00	0.00	0.00	0.00	267.13	1120.94	0.08	431.15	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.9841	295.22	0.00	0.00	0.00	0.00	0.00	295.22	1190.83	0.08	726.28	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9216	276.49	0.00	0.00	0.00	0.00	0.00	276.49	1268.06	0.09	1002.69	0.49	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4521	435.63	0.00	0.00	0.00	0.00	0.00	435.63	1340.39	0.09	1438.22	0.70	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.6705	501.15	0.00	0.00	0.00	0.00	0.00	501.15	1454.36	0.10	1939.27	0.94	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0137	604.12	0.00	0.00	0.00	0.00	0.00	604.12	1585.48	0.11	2543.28	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2009	660.28	0.00	0.00	0.00	0.00	0.00	660.28	1743.54	0.12	3203.44	1.56	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2306	969.19	0.00	0.00	0.00	0.00	0.00	969.19	1916.30	0.13	4172.49	2.03	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.8843	1465.30	0.00	0.00	0.00	0.00	0.00	1465.30	2169.89	0.15	5637.64	2.74	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4163	1324.89	0.00	0.00	0.00	0.00	0.00	1324.89	2553.30	0.18	6962.36	3.38	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7032	210.97	0.00	0.00	0.00	0.00	0.00	210.97	2899.95	0.20	7173.13	3.48	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.11	0.21	7172.92	3.48	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.06	0.21	7172.72	3.48	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.00	0.21	7172.51	3.48	0.00	0.00	
					Total volume (cf)			7174.54								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1078.00	0.07	15.58	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1082.08	0.08	31.16	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0441	13.24	0.00	0.00	0.00	0.00	0.00	13.24	1086.15	0.08	44.33	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1089.60	0.08	62.31	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1094.31	0.08	80.30	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1099.01	0.08	114.77	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1108.03	0.08	132.76	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1112.74	0.08	167.23	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1121.76	0.08	201.71	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1130.79	0.08	219.69	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0642	19.27	0.00	0.00	0.00	0.00	0.00	19.27	1135.49	0.08	238.88	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1140.51	0.08	273.35	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1149.53	0.08	355.99	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1171.16	0.08	438.63	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1192.78	0.08	521.26	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	1214.41	0.08	579.81	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4363	130.88	0.00	0.00	0.00	0.00	0.00	130.88	1229.73	0.09	710.61	0.35	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1263.96	0.09	853.44	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3560	106.80	0.00	0.00	0.00	0.00	0.00	106.80	1301.33	0.09	960.15	0.47	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1329.26	0.09	1102.98	0.54	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7172	215.16	0.00	0.00	0.00	0.00	0.00	215.16	1366.63	0.09	1318.05	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1422.92	0.10	1509.03	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5567	167.00	0.00	0.00	0.00	0.00	0.00	167.00	1472.89	0.10	1675.93	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5968	179.04	0.00	0.00	0.00	0.00	0.00	179.04	1516.57	0.11	1854.87	0.90	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1563.39	0.11	2045.84	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0784	323.53	0.00	0.00	0.00	0.00	0.00	323.53	1613.37	0.11	2369.26	1.15	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.3995	419.86	0.00	0.00	0.00	0.00	0.00	419.86	1698.00	0.12	2789.00	1.35	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7975	239.25	0.00	0.00	0.00	0.00	0.00	239.25	1807.84	0.13	3028.12	1.47	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1220	636.59	0.00	0.00	0.00	0.00	0.00	636.59	1870.42	0.13	3664.58	1.78	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3226	696.79	0.00	0.00	0.00	0.00	0.00	696.79	2036.97	0.14	4361.23	2.12	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.6839	805.16	0.00	0.00	0.00	0.00	0.00	805.16	2219.28	0.15	5166.24	2.51	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7607	528.22	0.00	0.00	0.00	0.00	0.00	528.22	2429.94	0.17	5694.30	2.76	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	2568.12	0.18	5752.75	2.79	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2583.42	0.18	5787.13	2.81	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2592.41	0.18	5821.50	2.83	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0241	7.22	0.00	0.00	0.00	0.00	0.00	7.22	2601.41	0.18	5828.55	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.25	0.18	5828.36	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.20	0.18	5828.18	2.83	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.16	0.18	5828.00	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.11	0.18	5827.82	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.06	0.18	5827.64	2.83	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.01	0.18	5827.46	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.97	0.18	5827.28	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.92	0.18	5827.10	2.83	0.00	0.00
					Total volume (cf)		5832.33								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	1078.00	0.07	7.29	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1079.91	0.07	16.04	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1082.20	0.08	24.80	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1084.49	0.08	33.56	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1086.78	0.08	42.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1089.07	0.08	52.54	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1091.75	0.08	62.77	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1094.43	0.08	73.00	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1097.10	0.08	83.23	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1099.78	0.08	93.46	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1102.46	0.08	103.68	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1105.13	0.08	115.38	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1108.19	0.08	127.08	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1111.26	0.08	138.78	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1114.32	0.08	150.48	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1117.38	0.08	162.18	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1120.44	0.08	173.88	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1123.50	0.08	185.58	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1126.56	0.08	197.28	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1129.62	0.08	208.98	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1132.69	0.08	220.67	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1135.75	0.08	232.37	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1138.81	0.08	244.07	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1141.87	0.08	257.24	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1145.32	0.08	268.94	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1148.38	0.08	282.10	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1151.82	0.08	295.27	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1155.27	0.08	308.44	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1158.71	0.08	321.61	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1162.16	0.08	334.78	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1165.61	0.08	347.95	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1169.05	0.08	361.11	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1172.50	0.08	375.75	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1176.33	0.08	390.39	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1180.16	0.08	405.03	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1183.99	0.08	419.67	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1187.82	0.08	434.31	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1191.65	0.08	450.42	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1195.87	0.08	466.53	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1200.08	0.08	482.64	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0589	17.66	0.00	0.00	0.00	0.00	0.00	17.66	1204.30	0.08	500.22	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0638	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1208.90	0.08	519.27	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1213.89	0.08	543.10	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1220.12	0.08	566.92	0.28	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1226.36	0.09	605.47	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1236.44	0.09	644.02	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1246.53	0.09	697.29	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1260.47	0.09	750.55	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2269	68.07	0.00	0.00	0.00	0.00	0.00	68.07	1274.41	0.09	818.54	0.40	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2760	82.79	0.00	0.00	0.00	0.00	0.00	82.79	1292.20	0.09	901.24	0.44	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	1313.84	0.09	998.67	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3741	112.24	0.00	0.00	0.00	0.00	0.00	112.24	1339.34	0.09	1110.81	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1368.68	0.10	1237.67	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1401.88	0.10	1364.53	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4723	141.68	0.00	0.00	0.00	0.00	0.00	141.68	1435.08	0.10	1506.11	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5213	156.40	0.00	0.00	0.00	0.00	0.00	156.40	1472.13	0.10	1662.41	0.81	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1513.03	0.11	1833.42	0.89	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1557.78	0.11	2004.43	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6195	185.84	0.00	0.00	0.00	0.00	0.00	185.84	1602.53	0.11	2190.16	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6685	200.56	0.00	0.00	0.00	0.00	0.00	200.56	1651.13	0.11	2390.61	1.16	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9139	274.16	0.00	0.00	0.00	0.00	0.00	274.16	1703.59	0.12	2664.65	1.29	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1592	347.77	0.00	0.00	0.00	0.00	0.00	347.77	1775.30	0.12	3012.30	1.46	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3064	391.93	0.00	0.00	0.00	0.00	0.00	391.93	1866.28	0.13	3404.10	1.65	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4536	436.09	0.00	0.00	0.00	0.00	0.00	436.09	1968.81	0.14	3840.05	1.86	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.6990	509.70	0.00	0.00	0.00	0.00	0.00	509.70	2082.89	0.14	4349.60	2.11	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1406	642.18	0.00	0.00	0.00	0.00	0.00	642.18	2216.23	0.15	4991.63	2.42	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	2384.24	0.17	5088.98	2.47	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	2409.72	0.17	5102.06	2.48	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	2413.14	0.17	5110.73	2.48	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2415.41	0.17	5117.92	2.48	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0147	4.42	0.00	0.00	0.00	0.00	0.00	4.42	2417.29	0.17	5122.17	2.49	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0098	2.94	0.00	0.00	0.00	0.00	0.00	2.94	2418.40	0.17	5124.95	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.13	0.17	5124.78	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.09	0.17	5124.61	2.49	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.04	0.17	5124.44	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.00	0.17	5124.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.95	0.17	5124.11	2.49	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.91	0.17	5123.94	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.87	0.17	5123.77	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.82	0.17	5123.60	2.49	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.78	0.17	5123.43	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.73	0.17	5123.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.69	0.17	5123.10	2.49	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.65	0.17	5122.93	2.49	0.00	0.00
					Total volume (cf)			5131.78									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1078.00	0.22	3.70	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1078.97	0.22	9.36	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1080.45	0.23	15.02	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1081.93	0.23	22.64	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1083.92	0.23	28.30	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1085.40	0.23	33.95	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1086.89	0.23	39.61	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1088.37	0.23	47.23	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1090.36	0.23	54.85	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1092.35	0.23	62.47	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1094.35	0.23	72.05	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1096.85	0.23	81.63	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1099.36	0.23	91.21	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1101.87	0.23	100.78	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1104.37	0.23	110.36	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1106.88	0.23	121.90	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1109.90	0.23	133.44	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1112.92	0.23	146.93	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1116.45	0.23	160.43	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1119.98	0.23	175.89	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1124.03	0.23	187.43	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1127.05	0.23	200.92	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1130.58	0.24	216.38	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1134.62	0.24	231.83	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1138.67	0.24	249.25	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1143.22	0.24	266.66	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1147.78	0.24	286.04	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1152.85	0.24	305.41	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1157.92	0.24	324.79	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0240	21.58	0.00	0.00	0.00	0.00	0.00	21.58	1162.99	0.24	346.12	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0262	23.54	0.00	0.00	0.00	0.00	0.00	23.54	1168.58	0.24	369.42	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0283	25.50	0.00	0.00	0.00	0.00	0.00	25.50	1174.67	0.24	394.67	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1181.28	0.25	423.85	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1188.91	0.25	453.02	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0349	31.38	0.00	0.00	0.00	0.00	0.00	31.38	1196.55	0.25	484.15	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1204.70	0.25	517.25	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1213.36	0.25	554.26	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1223.04	0.25	593.24	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0458	41.19	0.00	0.00	0.00	0.00	0.00	41.19	1233.24	0.26	634.17	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0479	43.15	0.00	0.00	0.00	0.00	0.00	43.15	1243.95	0.26	677.07	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1255.18	0.26	706.23	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1262.81	0.26	735.38	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1270.44	0.26	774.35	0.38	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1280.64	0.27	813.31	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1290.83	0.27	850.31	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1300.51	0.27	887.31	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1310.20	0.27	920.38	0.45	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0392	35.31	0.00	0.00	0.00	0.00	0.00	35.31	1318.85	0.27	955.41	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0545	49.04	0.00	0.00	0.00	0.00	0.00	49.04	1328.02	0.28	1004.17	0.49	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0567	51.00	0.00	0.00	0.00	0.00	0.00	51.00	1340.78	0.28	1054.89	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0671	60.43	0.00	0.00	0.00	0.00	0.00	60.43	1354.05	0.28	1115.04	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0971	87.42	0.00	0.00	0.00	0.00	0.00	87.42	1369.79	0.29	1202.17	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2142	192.78	0.00	0.00	0.00	0.00	0.00	192.78	1392.59	0.29	1394.66	0.68	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2222	199.97	0.00	0.00	0.00	0.00	0.00	199.97	1442.96	0.30	1594.33	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1495.22	0.31	1639.13	0.80	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1506.94	0.31	1683.93	0.82	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0930	83.69	0.00	0.00	0.00	0.00	0.00	83.69	1518.66	0.32	1767.30	0.86	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0788	70.88	0.00	0.00	0.00	0.00	0.00	70.88	1540.48	0.32	1837.87	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0862	77.60	0.00	0.00	0.00	0.00	0.00	77.60	1558.94	0.32	1915.14	0.93	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0718	64.60	0.00	0.00	0.00	0.00	0.00	64.60	1579.17	0.33	1979.41	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0572	51.50	0.00	0.00	0.00	0.00	0.00	51.50	1595.98	0.33	2030.58	0.99	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1609.37	0.34	2075.36	1.01	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1621.09	0.34	2112.29	1.03	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1630.76	0.34	2149.21	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1640.42	0.34	2156.72	1.05	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1642.38	0.34	2164.22	1.05	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1644.35	0.34	2169.76	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1645.80	0.34	2175.31	1.06	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1647.25	0.34	2184.77	1.06	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1649.72	0.34	2194.23	1.07	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1652.20	0.34	2203.70	1.07	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1654.68	0.34	2211.20	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1656.64	0.35	2218.70	1.08	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1658.60	0.35	2226.20	1.08	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1660.57	0.35	2231.74	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1662.02	0.35	2235.31	1.09	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1662.95	0.35	2240.85	1.09	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1664.40	0.35	2248.35	1.09	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1666.36	0.35	2253.89	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1667.81	0.35	2257.46	1.10	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1668.75	0.35	2263.00	1.10	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1670.20	0.35	2268.54	1.10	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1671.65	0.35	2274.07	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1673.09	0.35	2277.65	1.11	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1674.03	0.35	2283.18	1.11	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1675.48	0.35	2286.76	1.11	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1676.41	0.35	2292.29	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1677.86	0.35	2295.87	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1678.80	0.35	2301.40	1.12	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1680.25	0.35	2304.97	1.12	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1681.18	0.35	2308.55	1.12	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1682.12	0.35	2312.12	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.05	0.35	2315.69	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.98	0.35	2319.26	1.13	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1684.92	0.35	2322.83	1.13	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1685.85	0.35	2326.41	1.13	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1686.79	0.35	2326.05	1.13	0.00	0.00
						Total volume (cf)		2354.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.98ac+0.09ac typ street frontage=1.07ac

5/7/2024 LOT 9

Drainage Area (ac.)	1.0700	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5472	164.17	0.00	0.00	0.00	0.00	0.00	164.17	1078.00	0.07	164.09	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.8904	267.13	0.00	0.00	0.00	0.00	0.00	267.13	1120.94	0.08	431.15	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.9841	295.22	0.00	0.00	0.00	0.00	0.00	295.22	1190.83	0.08	726.28	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9216	276.49	0.00	0.00	0.00	0.00	0.00	276.49	1268.06	0.09	1002.69	0.49	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4521	435.63	0.00	0.00	0.00	0.00	0.00	435.63	1340.39	0.09	1438.22	0.70	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.6705	501.15	0.00	0.00	0.00	0.00	0.00	501.15	1454.36	0.10	1939.27	0.94	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0137	604.12	0.00	0.00	0.00	0.00	0.00	604.12	1585.48	0.11	2543.28	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2009	660.28	0.00	0.00	0.00	0.00	0.00	660.28	1743.54	0.12	3203.44	1.56	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2306	969.19	0.00	0.00	0.00	0.00	0.00	969.19	1916.30	0.13	4172.49	2.03	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.8843	1465.30	0.00	0.00	0.00	0.00	0.00	1465.30	2169.89	0.15	5637.64	2.74	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4163	1324.89	0.00	0.00	0.00	0.00	0.00	1324.89	2553.30	0.18	6962.36	3.38	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7032	210.97	0.00	0.00	0.00	0.00	0.00	210.97	2899.95	0.20	7173.13	3.48	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.11	0.21	7172.92	3.48	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.06	0.21	7172.72	3.48	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.00	0.21	7172.51	3.48	0.00	0.00	
					Total volume (cf)			7174.54								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1078.00	0.07	15.58	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1082.08	0.08	31.16	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0441	13.24	0.00	0.00	0.00	0.00	0.00	13.24	1086.15	0.08	44.33	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1089.60	0.08	62.31	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1094.31	0.08	80.30	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1099.01	0.08	114.77	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1108.03	0.08	132.76	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1112.74	0.08	167.23	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1121.76	0.08	201.71	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1130.79	0.08	219.69	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0642	19.27	0.00	0.00	0.00	0.00	0.00	19.27	1135.49	0.08	238.88	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1140.51	0.08	273.35	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1149.53	0.08	355.99	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1171.16	0.08	438.63	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1192.78	0.08	521.26	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	1214.41	0.08	579.81	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4363	130.88	0.00	0.00	0.00	0.00	0.00	130.88	1229.73	0.09	710.61	0.35	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1263.96	0.09	853.44	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3560	106.80	0.00	0.00	0.00	0.00	0.00	106.80	1301.33	0.09	960.15	0.47	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1329.26	0.09	1102.98	0.54	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7172	215.16	0.00	0.00	0.00	0.00	0.00	215.16	1366.63	0.09	1318.05	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1422.92	0.10	1509.03	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5567	167.00	0.00	0.00	0.00	0.00	0.00	167.00	1472.89	0.10	1675.93	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5968	179.04	0.00	0.00	0.00	0.00	0.00	179.04	1516.57	0.11	1854.87	0.90	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1563.39	0.11	2045.84	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0784	323.53	0.00	0.00	0.00	0.00	0.00	323.53	1613.37	0.11	2369.26	1.15	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.3995	419.86	0.00	0.00	0.00	0.00	0.00	419.86	1698.00	0.12	2789.00	1.35	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7975	239.25	0.00	0.00	0.00	0.00	0.00	239.25	1807.84	0.13	3028.12	1.47	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1220	636.59	0.00	0.00	0.00	0.00	0.00	636.59	1870.42	0.13	3664.58	1.78	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3226	696.79	0.00	0.00	0.00	0.00	0.00	696.79	2036.97	0.14	4361.23	2.12	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.6839	805.16	0.00	0.00	0.00	0.00	0.00	805.16	2219.28	0.15	5166.24	2.51	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7607	528.22	0.00	0.00	0.00	0.00	0.00	528.22	2429.94	0.17	5694.30	2.76	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	2568.12	0.18	5752.75	2.79	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2583.42	0.18	5787.13	2.81	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2592.41	0.18	5821.50	2.83	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0241	7.22	0.00	0.00	0.00	0.00	0.00	7.22	2601.41	0.18	5828.55	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.25	0.18	5828.36	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.20	0.18	5828.18	2.83	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.16	0.18	5828.00	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.11	0.18	5827.82	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.06	0.18	5827.64	2.83	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.01	0.18	5827.46	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.97	0.18	5827.28	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.92	0.18	5827.10	2.83	0.00	0.00
					Total volume (cf)		5832.33								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	1078.00	0.07	7.29	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1079.91	0.07	16.04	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1082.20	0.08	24.80	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1084.49	0.08	33.56	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1086.78	0.08	42.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1089.07	0.08	52.54	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1091.75	0.08	62.77	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1094.43	0.08	73.00	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1097.10	0.08	83.23	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1099.78	0.08	93.46	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1102.46	0.08	103.68	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1105.13	0.08	115.38	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1108.19	0.08	127.08	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1111.26	0.08	138.78	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1114.32	0.08	150.48	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1117.38	0.08	162.18	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1120.44	0.08	173.88	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1123.50	0.08	185.58	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1126.56	0.08	197.28	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1129.62	0.08	208.98	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1132.69	0.08	220.67	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1135.75	0.08	232.37	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1138.81	0.08	244.07	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1141.87	0.08	257.24	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1145.32	0.08	268.94	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1148.38	0.08	282.10	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1151.82	0.08	295.27	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1155.27	0.08	308.44	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1158.71	0.08	321.61	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1162.16	0.08	334.78	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1165.61	0.08	347.95	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1169.05	0.08	361.11	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1172.50	0.08	375.75	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1176.33	0.08	390.39	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1180.16	0.08	405.03	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1183.99	0.08	419.67	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1187.82	0.08	434.31	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1191.65	0.08	450.42	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1195.87	0.08	466.53	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1200.08	0.08	482.64	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0589	17.66	0.00	0.00	0.00	0.00	0.00	17.66	1204.30	0.08	500.22	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0638	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1208.90	0.08	519.27	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1213.89	0.08	543.10	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1220.12	0.08	566.92	0.28	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1226.36	0.09	605.47	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1236.44	0.09	644.02	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1246.53	0.09	697.29	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1260.47	0.09	750.55	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2269	68.07	0.00	0.00	0.00	0.00	0.00	68.07	1274.41	0.09	818.54	0.40	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2760	82.79	0.00	0.00	0.00	0.00	0.00	82.79	1292.20	0.09	901.24	0.44	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	1313.84	0.09	998.67	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3741	112.24	0.00	0.00	0.00	0.00	0.00	112.24	1339.34	0.09	1110.81	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1368.68	0.10	1237.67	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1401.88	0.10	1364.53	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4723	141.68	0.00	0.00	0.00	0.00	0.00	141.68	1435.08	0.10	1506.11	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5213	156.40	0.00	0.00	0.00	0.00	0.00	156.40	1472.13	0.10	1662.41	0.81	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1513.03	0.11	1833.42	0.89	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1557.78	0.11	2004.43	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6195	185.84	0.00	0.00	0.00	0.00	0.00	185.84	1602.53	0.11	2190.16	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6685	200.56	0.00	0.00	0.00	0.00	0.00	200.56	1651.13	0.11	2390.61	1.16	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9139	274.16	0.00	0.00	0.00	0.00	0.00	274.16	1703.59	0.12	2664.65	1.29	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1592	347.77	0.00	0.00	0.00	0.00	0.00	347.77	1775.30	0.12	3012.30	1.46	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3064	391.93	0.00	0.00	0.00	0.00	0.00	391.93	1866.28	0.13	3404.10	1.65	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4536	436.09	0.00	0.00	0.00	0.00	0.00	436.09	1968.81	0.14	3840.05	1.86	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.6990	509.70	0.00	0.00	0.00	0.00	0.00	509.70	2082.89	0.14	4349.60	2.11	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1406	642.18	0.00	0.00	0.00	0.00	0.00	642.18	2216.23	0.15	4991.63	2.42	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	2384.24	0.17	5088.98	2.47	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	2409.72	0.17	5102.06	2.48	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	2413.14	0.17	5110.73	2.48	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2415.41	0.17	5117.92	2.48	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0147	4.42	0.00	0.00	0.00	0.00	0.00	4.42	2417.29	0.17	5122.17	2.49	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0098	2.94	0.00	0.00	0.00	0.00	0.00	2.94	2418.40	0.17	5124.95	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.13	0.17	5124.78	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.09	0.17	5124.61	2.49	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.04	0.17	5124.44	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.00	0.17	5124.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.95	0.17	5124.11	2.49	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.91	0.17	5123.94	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.87	0.17	5123.77	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.82	0.17	5123.60	2.49	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.78	0.17	5123.43	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.73	0.17	5123.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.69	0.17	5123.10	2.49	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.65	0.17	5122.93	2.49	0.00	0.00
					Total volume (cf)			5131.78								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1078.00	0.22	3.70	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1078.97	0.22	9.36	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1080.45	0.23	15.02	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1081.93	0.23	22.64	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1083.92	0.23	28.30	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1085.40	0.23	33.95	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1086.89	0.23	39.61	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1088.37	0.23	47.23	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1090.36	0.23	54.85	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1092.35	0.23	62.47	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1094.35	0.23	72.05	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1096.85	0.23	81.63	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1099.36	0.23	91.21	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1101.87	0.23	100.78	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1104.37	0.23	110.36	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1106.88	0.23	121.90	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1109.90	0.23	133.44	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1112.92	0.23	146.93	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1116.45	0.23	160.43	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1119.98	0.23	175.89	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1124.03	0.23	187.43	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1127.05	0.23	200.92	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1130.58	0.24	216.38	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1134.62	0.24	231.83	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1138.67	0.24	249.25	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1143.22	0.24	266.66	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1147.78	0.24	286.04	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1152.85	0.24	305.41	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1157.92	0.24	324.79	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0240	21.58	0.00	0.00	0.00	0.00	0.00	21.58	1162.99	0.24	346.12	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0262	23.54	0.00	0.00	0.00	0.00	0.00	23.54	1168.58	0.24	369.42	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0283	25.50	0.00	0.00	0.00	0.00	0.00	25.50	1174.67	0.24	394.67	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1181.28	0.25	423.85	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1188.91	0.25	453.02	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0349	31.38	0.00	0.00	0.00	0.00	0.00	31.38	1196.55	0.25	484.15	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1204.70	0.25	517.25	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1213.36	0.25	554.26	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1223.04	0.25	593.24	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0458	41.19	0.00	0.00	0.00	0.00	0.00	41.19	1233.24	0.26	634.17	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0479	43.15	0.00	0.00	0.00	0.00	0.00	43.15	1243.95	0.26	677.07	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1255.18	0.26	706.23	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1262.81	0.26	735.38	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1270.44	0.26	774.35	0.38	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1280.64	0.27	813.31	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1290.83	0.27	850.31	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1300.51	0.27	887.31	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1310.20	0.27	920.38	0.45	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0392	35.31	0.00	0.00	0.00	0.00	0.00	35.31	1318.85	0.27	955.41	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0545	49.04	0.00	0.00	0.00	0.00	0.00	49.04	1328.02	0.28	1004.17	0.49	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0567	51.00	0.00	0.00	0.00	0.00	0.00	51.00	1340.78	0.28	1054.89	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0671	60.43	0.00	0.00	0.00	0.00	0.00	60.43	1354.05	0.28	1115.04	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0971	87.42	0.00	0.00	0.00	0.00	0.00	87.42	1369.79	0.29	1202.17	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2142	192.78	0.00	0.00	0.00	0.00	0.00	192.78	1392.59	0.29	1394.66	0.68	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2222	199.97	0.00	0.00	0.00	0.00	0.00	199.97	1442.96	0.30	1594.33	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1495.22	0.31	1639.13	0.80	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1506.94	0.31	1683.93	0.82	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0930	83.69	0.00	0.00	0.00	0.00	0.00	83.69	1518.66	0.32	1767.30	0.86	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0788	70.88	0.00	0.00	0.00	0.00	0.00	70.88	1540.48	0.32	1837.87	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0862	77.60	0.00	0.00	0.00	0.00	0.00	77.60	1558.94	0.32	1915.14	0.93	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0718	64.60	0.00	0.00	0.00	0.00	0.00	64.60	1579.17	0.33	1979.41	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0572	51.50	0.00	0.00	0.00	0.00	0.00	51.50	1595.98	0.33	2030.58	0.99	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1609.37	0.34	2075.36	1.01	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1621.09	0.34	2112.29	1.03	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1630.76	0.34	2149.21	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1640.42	0.34	2156.72	1.05	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1642.38	0.34	2164.22	1.05	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1644.35	0.34	2169.76	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1645.80	0.34	2175.31	1.06	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1647.25	0.34	2184.77	1.06	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1649.72	0.34	2194.23	1.07	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1652.20	0.34	2203.70	1.07	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1654.68	0.34	2211.20	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1656.64	0.35	2218.70	1.08	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1658.60	0.35	2226.20	1.08	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1660.57	0.35	2231.74	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1662.02	0.35	2235.31	1.09	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1662.95	0.35	2240.85	1.09	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1664.40	0.35	2248.35	1.09	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1666.36	0.35	2253.89	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1667.81	0.35	2257.46	1.10	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1668.75	0.35	2263.00	1.10	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1670.20	0.35	2268.54	1.10	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1671.65	0.35	2274.07	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1673.09	0.35	2277.65	1.11	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1674.03	0.35	2283.18	1.11	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1675.48	0.35	2286.76	1.11	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1676.41	0.35	2292.29	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1677.86	0.35	2295.87	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1678.80	0.35	2301.40	1.12	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1680.25	0.35	2304.97	1.12	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1681.18	0.35	2308.55	1.12	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1682.12	0.35	2312.12	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.05	0.35	2315.69	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.98	0.35	2319.26	1.13	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1684.92	0.35	2322.83	1.13	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1685.85	0.35	2326.41	1.13	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1686.79	0.35	2326.05	1.13	0.00	0.00
						Total volume (cf)		2354.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 10-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.73ac

5/7/2024 LOT 10-BACK

Drainage Area (ac.)	0.7300	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2400 s.f. Bot. = 623 s.f. Max. Depth (d)= 4 Max. storage= 5661.04 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.3733	112.00	0.00	0.00	0.00	0.00	0.00	112.00	623.00	0.04	111.96	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.6075	182.25	0.00	0.00	0.00	0.00	0.00	182.25	658.14	0.05	294.16	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.6714	201.41	0.00	0.00	0.00	0.00	0.00	201.41	715.34	0.05	495.52	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.6288	188.64	0.00	0.00	0.00	0.00	0.00	188.64	778.54	0.05	684.11	0.48	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.9907	297.20	0.00	0.00	0.00	0.00	0.00	297.20	837.74	0.06	981.25	0.69	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.1397	341.91	0.00	0.00	0.00	0.00	0.00	341.91	931.01	0.06	1323.09	0.93	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	1.3739	412.16	0.00	0.00	0.00	0.00	0.00	412.16	1038.32	0.07	1735.18	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.5016	450.47	0.00	0.00	0.00	0.00	0.00	450.47	1167.67	0.08	2185.57	1.54	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	2.2041	661.22	0.00	0.00	0.00	0.00	0.00	661.22	1309.05	0.09	2846.70	2.01	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	3.3323	999.69	0.00	0.00	0.00	0.00	0.00	999.69	1516.58	0.11	3846.28	2.72	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	3.0130	903.90	0.00	0.00	0.00	0.00	0.00	903.90	1830.35	0.13	4750.05	3.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.4798	143.93	0.00	0.00	0.00	0.00	0.00	143.93	2114.04	0.15	4893.84	3.46	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.17	0.15	4893.69	3.46	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.13	0.15	4893.54	3.46	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.08	0.15	4893.39	3.46	0.00	0.00	
					Total volume (cf)			4894.78								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0356	10.68	0.00	0.00	0.00	0.00	0.00	10.68	623.00	0.04	10.64	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0356	10.68	0.00	0.00	0.00	0.00	0.00	10.68	626.34	0.04	21.27	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	629.68	0.04	30.26	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	632.50	0.04	42.54	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	636.35	0.04	54.82	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	640.21	0.04	78.35	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	647.59	0.04	90.63	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	651.45	0.05	114.16	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	658.83	0.05	137.68	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	666.22	0.05	149.96	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0438	13.14	0.00	0.00	0.00	0.00	0.00	13.14	670.07	0.05	163.06	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	674.18	0.05	186.58	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	681.57	0.05	242.97	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	699.27	0.05	299.36	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	716.97	0.05	355.74	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1333	40.00	0.00	0.00	0.00	0.00	0.00	40.00	734.67	0.05	395.69	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	747.21	0.05	484.93	0.34	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.3250	97.51	0.00	0.00	0.00	0.00	0.00	97.51	775.22	0.05	582.38	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.2429	72.86	0.00	0.00	0.00	0.00	0.00	72.86	805.81	0.06	655.19	0.46	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.3250	97.51	0.00	0.00	0.00	0.00	0.00	97.51	828.66	0.06	752.64	0.53	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.4893	146.79	0.00	0.00	0.00	0.00	0.00	146.79	859.25	0.06	899.37	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.4346	130.37	0.00	0.00	0.00	0.00	0.00	130.37	905.31	0.06	1029.68	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.3798	113.94	0.00	0.00	0.00	0.00	0.00	113.94	946.22	0.07	1143.55	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.4072	122.15	0.00	0.00	0.00	0.00	0.00	122.15	981.96	0.07	1265.63	0.89	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.4346	130.37	0.00	0.00	0.00	0.00	0.00	130.37	1020.28	0.07	1395.92	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.7358	220.73	0.00	0.00	0.00	0.00	0.00	220.73	1061.18	0.07	1616.58	1.14	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.9548	286.44	0.00	0.00	0.00	0.00	0.00	286.44	1130.44	0.08	1902.94	1.34	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.5441	163.22	0.00	0.00	0.00	0.00	0.00	163.22	1220.33	0.08	2066.08	1.46	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	1.4477	434.31	0.00	0.00	0.00	0.00	0.00	434.31	1271.54	0.09	2500.30	1.77	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.5846	475.38	0.00	0.00	0.00	0.00	0.00	475.38	1407.84	0.10	2975.59	2.10	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.8310	549.31	0.00	0.00	0.00	0.00	0.00	549.31	1557.04	0.11	3524.79	2.49	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.2013	360.38	0.00	0.00	0.00	0.00	0.00	360.38	1729.43	0.12	3885.05	2.75	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1333	40.00	0.00	0.00	0.00	0.00	0.00	40.00	1842.52	0.13	3924.93	2.77	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	1855.03	0.13	3948.37	2.79	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	1862.39	0.13	3971.82	2.81	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0164	4.93	0.00	0.00	0.00	0.00	0.00	4.93	1869.75	0.13	3976.62	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.26	0.13	3976.49	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.22	0.13	3976.36	2.81	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.18	0.13	3976.23	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.14	0.13	3976.10	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.10	0.13	3975.97	2.81	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.05	0.13	3975.84	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.01	0.13	3975.71	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1870.97	0.13	3975.58	2.81	0.00	0.00
					Total volume (cf)		3979.07								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0167	5.02	0.00	0.00	0.00	0.00	0.00	5.02	623.00	0.04	4.98	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	624.56	0.04	10.96	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	626.44	0.04	16.94	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	628.32	0.04	22.93	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	630.20	0.04	28.91	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	632.07	0.04	35.89	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	634.27	0.04	42.88	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	636.46	0.04	49.87	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	638.65	0.04	56.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	640.85	0.04	63.84	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	643.04	0.04	70.82	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	645.23	0.04	78.81	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	647.74	0.04	86.80	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	650.25	0.05	94.79	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	652.76	0.05	102.78	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	655.26	0.05	110.77	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	657.77	0.05	118.76	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	660.28	0.05	126.75	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	662.79	0.05	134.74	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	665.29	0.05	142.72	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	667.80	0.05	150.71	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	670.31	0.05	158.70	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	672.82	0.05	166.69	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	675.32	0.05	175.68	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	678.15	0.05	183.67	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	680.65	0.05	192.66	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	683.48	0.05	201.65	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	686.30	0.05	210.64	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	689.12	0.05	219.63	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	691.94	0.05	228.62	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	694.76	0.05	237.61	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	697.59	0.05	246.60	0.17	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	700.41	0.05	256.60	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	703.55	0.05	266.59	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	706.68	0.05	276.59	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	709.82	0.05	286.58	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	712.96	0.05	296.57	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	716.09	0.05	307.57	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	719.55	0.05	318.57	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	723.00	0.05	329.57	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0402	12.05	0.00	0.00	0.00	0.00	0.00	12.05	726.45	0.05	341.57	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0435	13.06	0.00	0.00	0.00	0.00	0.00	13.06	730.22	0.05	354.57	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0544	16.31	0.00	0.00	0.00	0.00	0.00	16.31	734.30	0.05	370.84	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0544	16.31	0.00	0.00	0.00	0.00	0.00	16.31	739.41	0.05	387.10	0.27	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0879	26.36	0.00	0.00	0.00	0.00	0.00	26.36	744.51	0.05	413.40	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0879	26.36	0.00	0.00	0.00	0.00	0.00	26.36	752.77	0.05	439.71	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1213	36.40	0.00	0.00	0.00	0.00	0.00	36.40	761.02	0.05	476.05	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1213	36.40	0.00	0.00	0.00	0.00	0.00	36.40	772.43	0.05	512.40	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1548	46.44	0.00	0.00	0.00	0.00	0.00	46.44	783.84	0.05	558.79	0.39	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1883	56.49	0.00	0.00	0.00	0.00	0.00	56.49	798.40	0.06	615.22	0.43	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.2218	66.53	0.00	0.00	0.00	0.00	0.00	66.53	816.12	0.06	681.69	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.2552	76.57	0.00	0.00	0.00	0.00	0.00	76.57	836.98	0.06	758.21	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.2887	86.62	0.00	0.00	0.00	0.00	0.00	86.62	861.00	0.06	844.76	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.2887	86.62	0.00	0.00	0.00	0.00	0.00	86.62	888.17	0.06	931.32	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.3222	96.66	0.00	0.00	0.00	0.00	0.00	96.66	915.34	0.06	1027.91	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.3557	106.70	0.00	0.00	0.00	0.00	0.00	106.70	945.66	0.07	1134.55	0.80	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.3891	116.74	0.00	0.00	0.00	0.00	0.00	116.74	979.13	0.07	1251.22	0.88	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.3891	116.74	0.00	0.00	0.00	0.00	0.00	116.74	1015.76	0.07	1367.90	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.4226	126.79	0.00	0.00	0.00	0.00	0.00	126.79	1052.38	0.07	1494.61	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.4561	136.83	0.00	0.00	0.00	0.00	0.00	136.83	1092.16	0.08	1631.37	1.15	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.6235	187.05	0.00	0.00	0.00	0.00	0.00	187.05	1135.09	0.08	1818.34	1.28	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.7909	237.26	0.00	0.00	0.00	0.00	0.00	237.26	1193.78	0.08	2055.52	1.45	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.8913	267.39	0.00	0.00	0.00	0.00	0.00	267.39	1268.23	0.09	2322.82	1.64	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.9917	297.52	0.00	0.00	0.00	0.00	0.00	297.52	1352.13	0.09	2620.25	1.85	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.1591	347.74	0.00	0.00	0.00	0.00	0.00	347.74	1445.49	0.10	2967.88	2.10	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.4604	438.12	0.00	0.00	0.00	0.00	0.00	438.12	1554.62	0.11	3405.90	2.41	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.2218	66.53	0.00	0.00	0.00	0.00	0.00	66.53	1692.11	0.12	3472.31	2.45	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	1712.96	0.12	3481.23	2.46	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	1715.76	0.12	3487.14	2.46	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0167	5.02	0.00	0.00	0.00	0.00	0.00	5.02	1717.61	0.12	3492.04	2.47	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0100	3.01	0.00	0.00	0.00	0.00	0.00	3.01	1719.15	0.12	3494.93	2.47	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0067	2.01	0.00	0.00	0.00	0.00	0.00	2.01	1720.06	0.12	3496.82	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.65	0.12	3496.70	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.61	0.12	3496.58	2.47	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.58	0.12	3496.47	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.54	0.12	3496.35	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.50	0.12	3496.23	2.47	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.46	0.12	3496.11	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.43	0.12	3495.99	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.39	0.12	3495.87	2.47	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.35	0.12	3495.75	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.31	0.12	3495.63	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.28	0.12	3495.51	2.47	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.24	0.12	3495.39	2.47	0.00	0.00
					Total volume (cf)		3501.12								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	623.00	0.13	2.55	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	623.80	0.13	6.43	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	625.02	0.13	10.32	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	626.24	0.13	15.54	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	627.88	0.13	19.42	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	629.10	0.13	23.31	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	630.32	0.13	27.19	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	631.53	0.13	32.41	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	633.17	0.13	37.63	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	634.81	0.13	42.85	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	636.45	0.13	49.41	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	638.51	0.13	55.97	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	640.57	0.13	62.53	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	642.63	0.13	69.08	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	644.68	0.13	75.64	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	646.74	0.13	83.53	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	649.22	0.14	91.43	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	651.70	0.14	100.66	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	654.60	0.14	109.89	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	657.49	0.14	120.46	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	660.81	0.14	128.35	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	663.29	0.14	137.58	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	666.19	0.14	148.15	0.10	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	669.50	0.14	158.71	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0134	12.04	0.00	0.00	0.00	0.00	0.00	12.04	672.82	0.14	170.62	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0134	12.04	0.00	0.00	0.00	0.00	0.00	12.04	676.56	0.14	182.52	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	680.29	0.14	195.76	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	684.45	0.14	209.00	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	688.60	0.14	222.24	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0164	14.72	0.00	0.00	0.00	0.00	0.00	14.72	692.76	0.14	236.81	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0178	16.06	0.00	0.00	0.00	0.00	0.00	16.06	697.34	0.15	252.73	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0193	17.40	0.00	0.00	0.00	0.00	0.00	17.40	702.33	0.15	269.98	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	707.75	0.15	289.90	0.20	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	714.00	0.15	309.83	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0238	21.41	0.00	0.00	0.00	0.00	0.00	21.41	720.25	0.15	331.09	0.23	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0253	22.75	0.00	0.00	0.00	0.00	0.00	22.75	726.93	0.15	353.69	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	734.02	0.15	378.96	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	741.95	0.15	405.57	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0312	28.10	0.00	0.00	0.00	0.00	0.00	28.10	750.31	0.16	433.51	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0327	29.44	0.00	0.00	0.00	0.00	0.00	29.44	759.08	0.16	462.80	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	768.27	0.16	482.71	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	774.52	0.16	502.62	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	780.77	0.16	529.22	0.37	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	789.12	0.16	555.82	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	797.47	0.17	581.08	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	805.40	0.17	606.34	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0253	22.75	0.00	0.00	0.00	0.00	0.00	22.75	813.33	0.17	628.92	0.44	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0268	24.09	0.00	0.00	0.00	0.00	0.00	24.09	820.42	0.17	652.84	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0372	33.45	0.00	0.00	0.00	0.00	0.00	33.45	827.92	0.17	686.12	0.48	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0387	34.79	0.00	0.00	0.00	0.00	0.00	34.79	838.37	0.17	720.74	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0458	41.23	0.00	0.00	0.00	0.00	0.00	41.23	849.24	0.18	761.79	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0663	59.64	0.00	0.00	0.00	0.00	0.00	59.64	862.12	0.18	821.25	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1461	131.52	0.00	0.00	0.00	0.00	0.00	131.52	880.79	0.18	952.59	0.67	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1516	136.43	0.00	0.00	0.00	0.00	0.00	136.43	922.02	0.19	1088.82	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	964.78	0.20	1119.40	0.79	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	974.38	0.20	1149.98	0.81	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0634	57.09	0.00	0.00	0.00	0.00	0.00	57.09	983.98	0.20	1206.87	0.85	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0537	48.36	0.00	0.00	0.00	0.00	0.00	48.36	1001.83	0.21	1255.02	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0588	52.94	0.00	0.00	0.00	0.00	0.00	52.94	1016.95	0.21	1307.75	0.92	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0490	44.07	0.00	0.00	0.00	0.00	0.00	44.07	1033.50	0.22	1351.60	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0390	35.14	0.00	0.00	0.00	0.00	0.00	35.14	1047.27	0.22	1386.52	0.98	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	1058.23	0.22	1417.08	1.00	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	1067.82	0.22	1442.28	1.02	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	1075.73	0.22	1467.48	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1083.64	0.23	1472.61	1.04	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1085.25	0.23	1477.74	1.04	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1086.86	0.23	1481.53	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1088.05	0.23	1485.31	1.05	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1089.24	0.23	1491.78	1.05	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1091.27	0.23	1498.24	1.06	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1093.30	0.23	1504.70	1.06	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1095.33	0.23	1509.83	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1096.93	0.23	1514.95	1.07	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1098.54	0.23	1520.08	1.07	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1100.15	0.23	1523.86	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1101.34	0.23	1526.31	1.08	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1102.11	0.23	1530.09	1.08	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1103.30	0.23	1535.22	1.08	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1104.90	0.23	1539.00	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1106.09	0.23	1541.45	1.09	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1106.86	0.23	1545.23	1.09	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1108.05	0.23	1549.02	1.09	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1109.24	0.23	1552.80	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1110.42	0.23	1555.24	1.10	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1111.19	0.23	1559.03	1.10	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1112.38	0.23	1561.47	1.10	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1113.15	0.23	1565.26	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1114.33	0.23	1567.70	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1115.10	0.23	1571.48	1.11	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1116.29	0.23	1573.93	1.11	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1117.05	0.23	1576.37	1.11	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1117.82	0.23	1578.81	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1118.59	0.23	1581.26	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1119.36	0.23	1583.70	1.12	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1120.12	0.23	1586.14	1.12	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1120.89	0.23	1588.59	1.12	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1121.66	0.23	1588.35	1.12	0.00	0.00
						Total volume (cf)		1606.06									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 11-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.95ac

5/7/2024 LOT 11 BACK

Drainage Area (ac.)	0.9500	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2788 s.f. Bot. = 794 s.f. Max. Depth (d)= 4 Max. storage= 6759.79 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.4859	145.76	0.00	0.00	0.00	0.00	0.00	145.76	794.00	0.06	145.70	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.7906	237.18	0.00	0.00	0.00	0.00	0.00	237.18	836.98	0.06	382.82	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.8737	262.11	0.00	0.00	0.00	0.00	0.00	262.11	906.92	0.06	644.86	0.38	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.8183	245.49	0.00	0.00	0.00	0.00	0.00	245.49	984.22	0.07	890.28	0.53	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.2892	386.77	0.00	0.00	0.00	0.00	0.00	386.77	1056.61	0.07	1276.98	0.76	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.4832	444.95	0.00	0.00	0.00	0.00	0.00	444.95	1170.68	0.08	1721.84	1.02	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	1.7879	536.37	0.00	0.00	0.00	0.00	0.00	536.37	1301.91	0.09	2258.12	1.34	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.9541	586.23	0.00	0.00	0.00	0.00	0.00	586.23	1460.10	0.10	2844.25	1.68	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	2.8683	860.49	0.00	0.00	0.00	0.00	0.00	860.49	1633.00	0.11	3704.63	2.19	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.3366	1300.97	0.00	0.00	0.00	0.00	0.00	1300.97	1886.79	0.13	5005.47	2.96	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	3.9210	1176.31	0.00	0.00	0.00	0.00	0.00	1176.31	2270.51	0.16	6181.61	3.66	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.6244	187.31	0.00	0.00	0.00	0.00	0.00	187.31	2617.45	0.18	6368.74	3.77	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.65	0.19	6368.56	3.77	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.59	0.19	6368.37	3.77	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.54	0.19	6368.19	3.77	0.00	0.00	
					Total volume (cf)			6369.92								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0463	13.90	0.00	0.00	0.00	0.00	0.00	13.90	794.00	0.06	13.84	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0463	13.90	0.00	0.00	0.00	0.00	0.00	13.90	798.08	0.06	27.68	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	802.17	0.06	39.39	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	805.62	0.06	55.37	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	810.33	0.06	71.35	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	815.05	0.06	101.97	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	824.08	0.06	117.95	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	828.79	0.06	148.57	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	837.82	0.06	179.19	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	846.86	0.06	195.17	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0570	17.10	0.00	0.00	0.00	0.00	0.00	17.10	851.57	0.06	212.21	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	856.60	0.06	242.83	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	865.63	0.06	316.21	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	887.28	0.06	389.59	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	908.92	0.06	462.97	0.27	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1735	52.06	0.00	0.00	0.00	0.00	0.00	52.06	930.57	0.06	514.96	0.30	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.3873	116.20	0.00	0.00	0.00	0.00	0.00	116.20	945.90	0.07	631.10	0.37	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4230	126.89	0.00	0.00	0.00	0.00	0.00	126.89	980.16	0.07	757.92	0.45	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3161	94.82	0.00	0.00	0.00	0.00	0.00	94.82	1017.57	0.07	852.67	0.50	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4230	126.89	0.00	0.00	0.00	0.00	0.00	126.89	1045.52	0.07	979.49	0.58	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.6368	191.03	0.00	0.00	0.00	0.00	0.00	191.03	1082.93	0.08	1170.45	0.69	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.5655	169.65	0.00	0.00	0.00	0.00	0.00	169.65	1139.26	0.08	1340.03	0.79	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.4942	148.27	0.00	0.00	0.00	0.00	0.00	148.27	1189.28	0.08	1488.22	0.88	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5299	158.96	0.00	0.00	0.00	0.00	0.00	158.96	1232.99	0.09	1647.09	0.97	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.5655	169.65	0.00	0.00	0.00	0.00	0.00	169.65	1279.86	0.09	1816.66	1.07	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.9575	287.25	0.00	0.00	0.00	0.00	0.00	287.25	1329.88	0.09	2103.81	1.24	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.2426	372.77	0.00	0.00	0.00	0.00	0.00	372.77	1414.58	0.10	2476.49	1.47	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7080	212.41	0.00	0.00	0.00	0.00	0.00	212.41	1524.51	0.11	2688.80	1.59	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	1.8840	565.20	0.00	0.00	0.00	0.00	0.00	565.20	1587.14	0.11	3253.88	1.93	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.0622	618.65	0.00	0.00	0.00	0.00	0.00	618.65	1753.83	0.12	3872.41	2.29	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.3829	714.86	0.00	0.00	0.00	0.00	0.00	714.86	1936.28	0.13	4587.13	2.71	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.5633	468.98	0.00	0.00	0.00	0.00	0.00	468.98	2147.11	0.15	5055.97	2.99	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1735	52.06	0.00	0.00	0.00	0.00	0.00	52.06	2285.41	0.16	5107.87	3.02	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	2300.72	0.16	5138.39	3.04	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	2309.72	0.16	5168.91	3.06	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0214	6.41	0.00	0.00	0.00	0.00	0.00	6.41	2318.72	0.16	5175.16	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.57	0.16	5175.00	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.52	0.16	5174.84	3.06	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.47	0.16	5174.68	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.42	0.16	5174.52	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.38	0.16	5174.36	3.06	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.33	0.16	5174.19	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.28	0.16	5174.03	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.23	0.16	5173.87	3.06	0.00	0.00
					Total volume (cf)		5178.24								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0218	6.53	0.00	0.00	0.00	0.00	0.00	6.53	794.00	0.06	6.48	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	795.91	0.06	14.27	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	798.21	0.06	22.05	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	800.51	0.06	29.84	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	802.80	0.06	37.63	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	805.10	0.06	46.72	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	807.78	0.06	55.81	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	810.46	0.06	64.90	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	813.15	0.06	74.00	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	815.83	0.06	83.09	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	818.51	0.06	92.18	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	821.19	0.06	102.58	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	824.26	0.06	112.98	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	827.33	0.06	123.38	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	830.39	0.06	133.77	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	833.46	0.06	144.17	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	836.53	0.06	154.57	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	839.60	0.06	164.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	842.66	0.06	175.36	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	845.73	0.06	185.76	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	848.80	0.06	196.16	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	851.86	0.06	206.56	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	854.93	0.06	216.95	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	858.00	0.06	228.66	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	861.45	0.06	239.05	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	864.52	0.06	250.75	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	867.97	0.06	262.46	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	871.42	0.06	274.16	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	874.87	0.06	285.86	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	878.32	0.06	297.56	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	881.78	0.06	309.26	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	885.23	0.06	320.97	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	888.68	0.06	333.97	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	892.52	0.06	346.98	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	896.35	0.06	359.99	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	900.19	0.06	373.00	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	904.03	0.06	386.00	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	907.86	0.06	400.32	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	912.09	0.06	414.63	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	916.31	0.06	428.94	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	920.53	0.06	444.56	0.26	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0566	16.99	0.00	0.00	0.00	0.00	0.00	16.99	925.14	0.06	461.49	0.27	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0708	21.23	0.00	0.00	0.00	0.00	0.00	21.23	930.13	0.06	482.66	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0708	21.23	0.00	0.00	0.00	0.00	0.00	21.23	936.37	0.07	503.82	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1143	34.30	0.00	0.00	0.00	0.00	0.00	34.30	942.62	0.07	538.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1143	34.30	0.00	0.00	0.00	0.00	0.00	34.30	952.72	0.07	572.29	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1579	47.37	0.00	0.00	0.00	0.00	0.00	47.37	962.81	0.07	619.59	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1579	47.37	0.00	0.00	0.00	0.00	0.00	47.37	976.77	0.07	666.89	0.39	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2015	60.44	0.00	0.00	0.00	0.00	0.00	60.44	990.72	0.07	727.26	0.43	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2450	73.51	0.00	0.00	0.00	0.00	0.00	73.51	1008.53	0.07	800.70	0.47	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1030.19	0.07	887.21	0.52	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.3322	99.65	0.00	0.00	0.00	0.00	0.00	99.65	1055.71	0.07	986.79	0.58	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.3757	112.72	0.00	0.00	0.00	0.00	0.00	112.72	1085.08	0.08	1099.43	0.65	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.3757	112.72	0.00	0.00	0.00	0.00	0.00	112.72	1118.31	0.08	1212.07	0.72	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.4193	125.79	0.00	0.00	0.00	0.00	0.00	125.79	1151.54	0.08	1337.78	0.79	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.4629	138.86	0.00	0.00	0.00	0.00	0.00	138.86	1188.62	0.08	1476.56	0.87	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.5064	151.93	0.00	0.00	0.00	0.00	0.00	151.93	1229.55	0.09	1628.40	0.96	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.5064	151.93	0.00	0.00	0.00	0.00	0.00	151.93	1274.34	0.09	1780.24	1.05	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.5500	165.00	0.00	0.00	0.00	0.00	0.00	165.00	1319.13	0.09	1945.15	1.15	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.5936	178.07	0.00	0.00	0.00	0.00	0.00	178.07	1367.78	0.09	2123.12	1.26	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.8114	243.42	0.00	0.00	0.00	0.00	0.00	243.42	1420.28	0.10	2366.44	1.40	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.0292	308.77	0.00	0.00	0.00	0.00	0.00	308.77	1492.05	0.10	2675.10	1.58	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.1599	347.98	0.00	0.00	0.00	0.00	0.00	347.98	1583.10	0.11	3022.97	1.79	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.2906	387.18	0.00	0.00	0.00	0.00	0.00	387.18	1685.71	0.12	3410.03	2.02	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.5084	452.53	0.00	0.00	0.00	0.00	0.00	452.53	1799.89	0.12	3862.44	2.29	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.9005	570.16	0.00	0.00	0.00	0.00	0.00	570.16	1933.34	0.13	4432.47	2.62	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	2101.49	0.15	4518.90	2.67	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	2126.98	0.15	4530.52	2.68	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	2130.41	0.15	4538.21	2.69	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0218	6.53	0.00	0.00	0.00	0.00	0.00	6.53	2132.68	0.15	4544.60	2.69	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0131	3.92	0.00	0.00	0.00	0.00	0.00	3.92	2134.56	0.15	4548.37	2.69	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0087	2.61	0.00	0.00	0.00	0.00	0.00	2.61	2135.68	0.15	4550.84	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.40	0.15	4550.69	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.36	0.15	4550.54	2.69	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.32	0.15	4550.39	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.27	0.15	4550.24	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.23	0.15	4550.10	2.69	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.19	0.15	4549.95	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.14	0.15	4549.80	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.10	0.15	4549.65	2.69	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.05	0.15	4549.50	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.01	0.15	4549.35	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2135.97	0.15	4549.21	2.69	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2135.92	0.15	4549.06	2.69	0.00	0.00
					Total volume (cf)		4556.26								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	794.00	0.17	3.32	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	794.98	0.17	8.38	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	796.47	0.17	13.43	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	797.96	0.17	20.23	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	799.97	0.17	25.29	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	801.46	0.17	30.35	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	802.95	0.17	35.41	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	804.44	0.17	42.21	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	806.45	0.17	49.00	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	808.46	0.17	55.80	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	810.46	0.17	64.34	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	812.98	0.17	72.88	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	815.50	0.17	81.42	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	818.02	0.17	89.95	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	820.53	0.17	98.49	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	823.05	0.17	108.77	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	826.08	0.17	119.04	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	829.12	0.17	131.06	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	832.66	0.17	143.08	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	836.21	0.17	156.84	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	840.26	0.18	167.11	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	843.29	0.18	179.12	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	846.84	0.18	192.88	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	850.90	0.18	206.63	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0174	15.67	0.00	0.00	0.00	0.00	0.00	15.67	854.95	0.18	222.13	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0174	15.67	0.00	0.00	0.00	0.00	0.00	15.67	859.52	0.18	237.62	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	864.09	0.18	254.86	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	869.18	0.18	272.09	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	874.26	0.18	289.33	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0213	19.16	0.00	0.00	0.00	0.00	0.00	19.16	879.35	0.18	308.30	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	884.94	0.18	329.01	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0252	22.64	0.00	0.00	0.00	0.00	0.00	22.64	891.05	0.19	351.47	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	897.68	0.19	377.40	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	905.33	0.19	403.34	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0310	27.86	0.00	0.00	0.00	0.00	0.00	27.86	912.98	0.19	431.01	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0329	29.61	0.00	0.00	0.00	0.00	0.00	29.61	921.14	0.19	460.42	0.27	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	929.82	0.19	493.32	0.29	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	939.52	0.20	527.95	0.31	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0406	36.57	0.00	0.00	0.00	0.00	0.00	36.57	949.73	0.20	564.32	0.33	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0426	38.31	0.00	0.00	0.00	0.00	0.00	38.31	960.46	0.20	602.44	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	971.71	0.20	628.36	0.37	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	979.35	0.20	654.28	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	987.00	0.21	688.90	0.41	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	997.21	0.21	723.52	0.43	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1007.42	0.21	756.40	0.45	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1017.12	0.21	789.28	0.47	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0329	29.61	0.00	0.00	0.00	0.00	0.00	29.61	1026.82	0.21	818.67	0.48	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1035.49	0.22	849.80	0.50	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1044.67	0.22	893.12	0.53	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0503	45.28	0.00	0.00	0.00	0.00	0.00	45.28	1057.45	0.22	938.18	0.56	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0596	53.65	0.00	0.00	0.00	0.00	0.00	53.65	1070.74	0.22	991.61	0.59	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.0862	77.62	0.00	0.00	0.00	0.00	0.00	77.62	1086.50	0.23	1068.99	0.63	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.1902	171.16	0.00	0.00	0.00	0.00	0.00	171.16	1109.33	0.23	1239.92	0.73	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.1973	177.55	0.00	0.00	0.00	0.00	0.00	177.55	1159.75	0.24	1417.23	0.84	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1212.05	0.25	1457.03	0.86	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1223.79	0.25	1496.83	0.89	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0826	74.30	0.00	0.00	0.00	0.00	0.00	74.30	1235.53	0.26	1570.87	0.93	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0699	62.93	0.00	0.00	0.00	0.00	0.00	62.93	1257.37	0.26	1633.54	0.97	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0766	68.90	0.00	0.00	0.00	0.00	0.00	68.90	1275.86	0.27	1702.17	1.01	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0637	57.35	0.00	0.00	0.00	0.00	0.00	57.35	1296.11	0.27	1759.26	1.04	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0508	45.72	0.00	0.00	0.00	0.00	0.00	45.72	1312.95	0.27	1804.71	1.07	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1326.35	0.28	1844.49	1.09	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1338.09	0.28	1877.30	1.11	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1347.76	0.28	1910.10	1.13	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1357.44	0.28	1916.79	1.13	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1359.41	0.28	1923.47	1.14	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1361.38	0.28	1928.41	1.14	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1362.84	0.28	1933.35	1.14	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1364.30	0.28	1941.77	1.15	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1366.78	0.28	1950.20	1.15	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1369.27	0.29	1958.62	1.16	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1371.75	0.29	1965.30	1.16	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1373.72	0.29	1971.98	1.17	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1375.69	0.29	1978.66	1.17	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1377.66	0.29	1983.60	1.17	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1379.12	0.29	1986.79	1.18	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1380.06	0.29	1991.73	1.18	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1381.52	0.29	1998.41	1.18	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1383.49	0.29	2003.34	1.19	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1384.95	0.29	2006.54	1.19	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1385.89	0.29	2011.47	1.19	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1387.34	0.29	2016.41	1.19	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1388.80	0.29	2021.34	1.20	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1390.26	0.29	2024.54	1.20	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1391.20	0.29	2029.47	1.20	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1392.65	0.29	2032.66	1.20	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1393.59	0.29	2037.60	1.21	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1395.05	0.29	2040.79	1.21	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1395.99	0.29	2045.72	1.21	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1397.45	0.29	2048.92	1.21	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1398.39	0.29	2052.11	1.21	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1399.33	0.29	2055.30	1.22	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1400.27	0.29	2058.49	1.22	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1401.21	0.29	2061.68	1.22	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1402.15	0.29	2064.87	1.22	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1403.10	0.29	2068.06	1.22	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1404.04	0.29	2067.77	1.22	0.00	0.00
						Total volume (cf)	2090.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 12-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.14ac

5/7/2024 LOT 12-BACK

Drainage Area (ac.)	1.1400	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3132 s.f. Bot. = 947 s.f. Max. Depth (d)= 4 Max. storage= 7734.95 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5830	174.91	0.00	0.00	0.00	0.00	0.00	174.91	947.00	0.07	174.84	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9487	284.61	0.00	0.00	0.00	0.00	0.00	284.61	996.39	0.07	459.38	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0484	314.53	0.00	0.00	0.00	0.00	0.00	314.53	1076.77	0.07	773.84	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9819	294.58	0.00	0.00	0.00	0.00	0.00	294.58	1165.60	0.08	1068.34	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5471	464.13	0.00	0.00	0.00	0.00	0.00	464.13	1248.79	0.09	1532.38	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7798	533.94	0.00	0.00	0.00	0.00	0.00	533.94	1379.87	0.10	2066.22	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1455	643.64	0.00	0.00	0.00	0.00	0.00	643.64	1530.67	0.11	2709.75	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3449	703.48	0.00	0.00	0.00	0.00	0.00	703.48	1712.46	0.12	3413.11	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.4420	1032.59	0.00	0.00	0.00	0.00	0.00	1032.59	1911.15	0.13	4445.57	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.2039	1561.16	0.00	0.00	0.00	0.00	0.00	1561.16	2202.80	0.15	6006.58	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.7052	1411.57	0.00	0.00	0.00	0.00	0.00	1411.57	2643.76	0.18	7417.96	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7492	224.77	0.00	0.00	0.00	0.00	0.00	224.77	3042.46	0.21	7642.52	3.95	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.89	0.22	7642.31	3.95	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.83	0.22	7642.09	3.95	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.77	0.22	7641.87	3.95	0.00	0.00	
					Total volume (cf)			7643.90								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0556	16.68	0.00	0.00	0.00	0.00	0.00	16.68	947.00	0.07	16.61	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0556	16.68	0.00	0.00	0.00	0.00	0.00	16.68	951.69	0.07	33.22	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0470	14.11	0.00	0.00	0.00	0.00	0.00	14.11	956.38	0.07	47.27	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	960.35	0.07	66.44	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	965.77	0.07	85.62	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	971.19	0.07	122.37	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	981.57	0.07	141.54	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	986.98	0.07	178.29	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	997.36	0.07	215.03	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	1007.74	0.07	234.20	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0684	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1013.16	0.07	254.66	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	1018.94	0.07	291.40	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1029.32	0.07	379.46	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1054.19	0.07	467.52	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1079.07	0.07	555.57	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2082	62.47	0.00	0.00	0.00	0.00	0.00	62.47	1103.94	0.08	617.96	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4648	139.44	0.00	0.00	0.00	0.00	0.00	139.44	1121.57	0.08	757.33	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5076	152.27	0.00	0.00	0.00	0.00	0.00	152.27	1160.93	0.08	909.52	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3793	113.79	0.00	0.00	0.00	0.00	0.00	113.79	1203.92	0.08	1023.22	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5076	152.27	0.00	0.00	0.00	0.00	0.00	152.27	1236.04	0.09	1175.41	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7641	229.24	0.00	0.00	0.00	0.00	0.00	229.24	1279.03	0.09	1404.56	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6786	203.58	0.00	0.00	0.00	0.00	0.00	203.58	1343.77	0.09	1608.05	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5931	177.93	0.00	0.00	0.00	0.00	0.00	177.93	1401.25	0.10	1785.88	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6359	190.76	0.00	0.00	0.00	0.00	0.00	190.76	1451.48	0.10	1976.53	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6786	203.58	0.00	0.00	0.00	0.00	0.00	203.58	1505.34	0.10	2180.01	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1490	344.70	0.00	0.00	0.00	0.00	0.00	344.70	1562.82	0.11	2524.60	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4911	447.32	0.00	0.00	0.00	0.00	0.00	447.32	1660.16	0.12	2971.81	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8497	254.90	0.00	0.00	0.00	0.00	0.00	254.90	1786.49	0.12	3226.58	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2608	678.24	0.00	0.00	0.00	0.00	0.00	678.24	1858.46	0.13	3904.69	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4746	742.38	0.00	0.00	0.00	0.00	0.00	742.38	2050.01	0.14	4646.93	2.40	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.8594	857.83	0.00	0.00	0.00	0.00	0.00	857.83	2259.68	0.16	5504.60	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8759	562.78	0.00	0.00	0.00	0.00	0.00	562.78	2501.96	0.17	6067.21	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2082	62.47	0.00	0.00	0.00	0.00	0.00	62.47	2660.89	0.18	6129.50	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	2678.49	0.19	6166.13	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	2688.83	0.19	6202.75	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	2699.18	0.19	6210.26	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.30	0.19	6210.08	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.25	0.19	6209.89	3.21	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.20	0.19	6209.70	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.14	0.19	6209.51	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.09	0.19	6209.33	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.04	0.19	6209.14	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2700.98	0.19	6208.95	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2700.93	0.19	6208.76	3.21	0.00	0.00
					Total volume (cf)		6213.88								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	947.00	0.07	7.78	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	949.20	0.07	17.12	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	951.84	0.07	26.46	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	954.48	0.07	35.81	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	957.12	0.07	45.15	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	959.75	0.07	56.06	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	962.84	0.07	66.98	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	965.92	0.07	77.89	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	969.00	0.07	88.80	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	972.08	0.07	99.71	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	975.17	0.07	110.62	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	978.25	0.07	123.10	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	981.77	0.07	135.58	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	985.30	0.07	148.06	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	988.82	0.07	160.54	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	992.35	0.07	173.01	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	995.87	0.07	185.49	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	999.40	0.07	197.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1002.92	0.07	210.45	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1006.45	0.07	222.92	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1009.97	0.07	235.40	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1013.50	0.07	247.88	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1017.02	0.07	260.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1020.55	0.07	274.40	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1024.51	0.07	286.87	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1028.04	0.07	300.92	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1032.00	0.07	314.96	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1035.97	0.07	329.01	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1039.94	0.07	343.05	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1043.91	0.07	357.09	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1047.87	0.07	371.13	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1051.84	0.07	385.18	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1055.81	0.07	400.79	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1060.22	0.07	416.40	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1064.63	0.07	432.01	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1069.04	0.07	447.62	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1073.44	0.07	463.23	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1077.85	0.07	480.40	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1082.71	0.08	497.58	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1087.56	0.08	514.76	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0627	18.82	0.00	0.00	0.00	0.00	0.00	18.82	1092.41	0.08	533.50	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0680	20.39	0.00	0.00	0.00	0.00	0.00	20.39	1097.71	0.08	553.81	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0849	25.48	0.00	0.00	0.00	0.00	0.00	25.48	1103.44	0.08	579.21	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0849	25.48	0.00	0.00	0.00	0.00	0.00	25.48	1110.62	0.08	604.61	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1372	41.16	0.00	0.00	0.00	0.00	0.00	41.16	1117.79	0.08	645.70	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1372	41.16	0.00	0.00	0.00	0.00	0.00	41.16	1129.40	0.08	686.78	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1895	56.84	0.00	0.00	0.00	0.00	0.00	56.84	1141.00	0.08	743.54	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1895	56.84	0.00	0.00	0.00	0.00	0.00	56.84	1157.04	0.08	800.30	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2418	72.53	0.00	0.00	0.00	0.00	0.00	72.53	1173.07	0.08	872.75	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2940	88.21	0.00	0.00	0.00	0.00	0.00	88.21	1193.54	0.08	960.88	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3463	103.90	0.00	0.00	0.00	0.00	0.00	103.90	1218.43	0.08	1064.69	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3986	119.58	0.00	0.00	0.00	0.00	0.00	119.58	1247.76	0.09	1184.18	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4509	135.26	0.00	0.00	0.00	0.00	0.00	135.26	1281.51	0.09	1319.35	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4509	135.26	0.00	0.00	0.00	0.00	0.00	135.26	1319.70	0.09	1454.53	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5032	150.95	0.00	0.00	0.00	0.00	0.00	150.95	1357.88	0.09	1605.38	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5554	166.63	0.00	0.00	0.00	0.00	0.00	166.63	1400.49	0.10	1771.91	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6077	182.31	0.00	0.00	0.00	0.00	0.00	182.31	1447.54	0.10	1954.12	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6077	182.31	0.00	0.00	0.00	0.00	0.00	182.31	1499.01	0.10	2136.33	1.10	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6600	198.00	0.00	0.00	0.00	0.00	0.00	198.00	1550.48	0.11	2334.22	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7123	213.68	0.00	0.00	0.00	0.00	0.00	213.68	1606.38	0.11	2547.79	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9737	292.10	0.00	0.00	0.00	0.00	0.00	292.10	1666.71	0.12	2839.78	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2351	370.52	0.00	0.00	0.00	0.00	0.00	370.52	1749.19	0.12	3210.18	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3919	417.57	0.00	0.00	0.00	0.00	0.00	417.57	1853.82	0.13	3627.62	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5487	464.62	0.00	0.00	0.00	0.00	0.00	464.62	1971.74	0.14	4092.10	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8101	543.04	0.00	0.00	0.00	0.00	0.00	543.04	2102.95	0.15	4635.00	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2806	684.19	0.00	0.00	0.00	0.00	0.00	684.19	2256.31	0.16	5319.04	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3463	103.90	0.00	0.00	0.00	0.00	0.00	103.90	2449.54	0.17	5422.76	2.80	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	2478.84	0.17	5436.70	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	2482.78	0.17	5445.94	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	2485.39	0.17	5453.61	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0157	4.71	0.00	0.00	0.00	0.00	0.00	4.71	2487.56	0.17	5458.14	2.82	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0105	3.14	0.00	0.00	0.00	0.00	0.00	3.14	2488.84	0.17	5461.11	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.68	0.17	5460.93	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.63	0.17	5460.76	2.82	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.58	0.17	5460.59	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.53	0.17	5460.42	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.48	0.17	5460.24	2.82	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.43	0.17	5460.07	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.38	0.17	5459.90	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.33	0.17	5459.72	2.82	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.29	0.17	5459.55	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.24	0.17	5459.38	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.19	0.17	5459.21	2.82	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.14	0.17	5459.03	2.82	0.00	0.00
					Total volume (cf)			5467.51								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	947.00	0.20	3.98	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	948.12	0.20	10.05	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	949.84	0.20	16.13	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	951.56	0.20	24.29	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	953.86	0.20	30.36	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	955.58	0.20	36.43	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	957.29	0.20	42.50	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	959.00	0.20	50.66	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	961.31	0.20	58.82	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	963.61	0.20	66.97	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	965.92	0.20	77.22	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	968.81	0.20	87.47	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	971.71	0.20	97.72	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	974.60	0.20	107.96	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	977.50	0.20	118.21	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	980.39	0.20	130.54	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	983.88	0.20	142.87	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	987.36	0.21	157.30	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	991.43	0.21	171.72	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	995.51	0.21	188.23	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	1000.17	0.21	200.56	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	1003.66	0.21	214.98	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	1007.73	0.21	231.49	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	1012.39	0.21	248.00	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0209	18.81	0.00	0.00	0.00	0.00	0.00	18.81	1017.06	0.21	266.59	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0209	18.81	0.00	0.00	0.00	0.00	0.00	18.81	1022.31	0.21	285.19	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1027.56	0.21	305.87	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1033.40	0.22	326.55	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1039.25	0.22	347.24	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0255	22.99	0.00	0.00	0.00	0.00	0.00	22.99	1045.09	0.22	370.01	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0279	25.08	0.00	0.00	0.00	0.00	0.00	25.08	1051.52	0.22	394.86	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0302	27.17	0.00	0.00	0.00	0.00	0.00	27.17	1058.54	0.22	421.81	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1066.15	0.22	452.94	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1074.95	0.22	484.06	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0372	33.44	0.00	0.00	0.00	0.00	0.00	33.44	1083.74	0.23	517.27	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0395	35.53	0.00	0.00	0.00	0.00	0.00	35.53	1093.12	0.23	552.57	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1103.09	0.23	592.04	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1114.24	0.23	633.61	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0488	43.89	0.00	0.00	0.00	0.00	0.00	43.89	1125.98	0.23	677.26	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0511	45.98	0.00	0.00	0.00	0.00	0.00	45.98	1138.31	0.24	723.00	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1151.24	0.24	754.10	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1160.02	0.24	785.21	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1168.81	0.24	826.76	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1180.55	0.25	868.31	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1192.28	0.25	907.77	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1203.43	0.25	947.22	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0395	35.53	0.00	0.00	0.00	0.00	0.00	35.53	1214.58	0.25	982.50	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0418	37.62	0.00	0.00	0.00	0.00	0.00	37.62	1224.54	0.26	1019.86	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0580	52.24	0.00	0.00	0.00	0.00	0.00	52.24	1235.09	0.26	1071.85	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0604	54.33	0.00	0.00	0.00	0.00	0.00	54.33	1249.78	0.26	1125.92	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0715	64.38	0.00	0.00	0.00	0.00	0.00	64.38	1265.05	0.26	1190.04	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.1035	93.14	0.00	0.00	0.00	0.00	0.00	93.14	1283.17	0.27	1282.91	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2282	205.39	0.00	0.00	0.00	0.00	0.00	205.39	1309.40	0.27	1488.03	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2367	213.06	0.00	0.00	0.00	0.00	0.00	213.06	1367.34	0.28	1700.80	0.88	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1427.45	0.30	1748.57	0.90	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1440.94	0.30	1796.33	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0991	89.16	0.00	0.00	0.00	0.00	0.00	89.16	1454.44	0.30	1885.19	0.97	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0839	75.52	0.00	0.00	0.00	0.00	0.00	75.52	1479.54	0.31	1960.40	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0919	82.67	0.00	0.00	0.00	0.00	0.00	82.67	1500.78	0.31	2042.76	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0765	68.83	0.00	0.00	0.00	0.00	0.00	68.83	1524.05	0.32	2111.27	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0610	54.87	0.00	0.00	0.00	0.00	0.00	54.87	1543.40	0.32	2165.82	1.12	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1558.81	0.32	2213.56	1.14	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1572.30	0.33	2252.94	1.17	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1583.42	0.33	2292.31	1.19	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1594.54	0.33	2300.34	1.19	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1596.81	0.33	2308.37	1.19	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1599.08	0.33	2314.30	1.20	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1600.75	0.33	2320.24	1.20	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1602.43	0.33	2330.35	1.21	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1605.29	0.33	2340.47	1.21	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1608.15	0.34	2350.58	1.22	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1611.00	0.34	2358.61	1.22	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1613.27	0.34	2366.63	1.22	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1615.54	0.34	2374.65	1.23	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1617.80	0.34	2380.58	1.23	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1619.48	0.34	2384.43	1.23	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1620.56	0.34	2390.36	1.24	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1622.24	0.34	2398.38	1.24	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1624.50	0.34	2404.31	1.24	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1626.18	0.34	2408.15	1.25	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1627.26	0.34	2414.08	1.25	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1628.94	0.34	2420.01	1.25	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1630.61	0.34	2425.94	1.25	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1632.29	0.34	2429.78	1.26	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1633.37	0.34	2435.71	1.26	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1635.05	0.34	2439.55	1.26	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1636.13	0.34	2445.48	1.26	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1637.81	0.34	2449.32	1.27	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1638.89	0.34	2455.24	1.27	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1640.57	0.34	2459.08	1.27	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1641.65	0.34	2462.92	1.27	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1642.74	0.34	2466.76	1.28	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1643.82	0.34	2470.59	1.28	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1644.90	0.34	2474.43	1.28	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1645.99	0.34	2478.27	1.28	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1647.07	0.34	2482.10	1.28	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1648.15	0.34	2481.76	1.28	0.00	0.00
						Total volume (cf)		2508.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.03ac+0.09ac typ street frontage=1.12ac

5/7/2024 LOTs 13-15

Drainage Area (ac.)	1.1200	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5728	171.84	0.00	0.00	0.00	0.00	0.00	171.84	1078.00	0.07	171.76	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9321	279.62	0.00	0.00	0.00	0.00	0.00	279.62	1122.95	0.08	451.30	0.22	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0300	309.01	0.00	0.00	0.00	0.00	0.00	309.01	1196.10	0.08	760.23	0.37	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9647	289.42	0.00	0.00	0.00	0.00	0.00	289.42	1276.94	0.09	1049.56	0.51	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5199	455.98	0.00	0.00	0.00	0.00	0.00	455.98	1352.65	0.09	1505.45	0.73	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7486	524.57	0.00	0.00	0.00	0.00	0.00	524.57	1471.95	0.10	2029.91	0.99	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1078	632.35	0.00	0.00	0.00	0.00	0.00	632.35	1609.20	0.11	2662.15	1.29	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3038	691.14	0.00	0.00	0.00	0.00	0.00	691.14	1774.65	0.12	3353.16	1.63	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.3816	1014.47	0.00	0.00	0.00	0.00	0.00	1014.47	1955.48	0.14	4367.50	2.12	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.1126	1533.77	0.00	0.00	0.00	0.00	0.00	1533.77	2220.92	0.15	5901.12	2.87	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.6227	1386.80	0.00	0.00	0.00	0.00	0.00	1386.80	2622.24	0.18	7287.74	3.54	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7361	220.83	0.00	0.00	0.00	0.00	0.00	220.83	2985.10	0.21	7508.36	3.65	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.84	0.21	7508.15	3.65	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.78	0.21	7507.94	3.65	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.73	0.21	7507.73	3.65	0.00	0.00	
					Total volume (cf)			7509.80								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0546	16.38	0.00	0.00	0.00	0.00	0.00	16.38	1078.00	0.07	16.31	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0546	16.38	0.00	0.00	0.00	0.00	0.00	16.38	1082.27	0.08	32.62	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0462	13.86	0.00	0.00	0.00	0.00	0.00	13.86	1086.54	0.08	46.41	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1090.14	0.08	65.24	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1095.07	0.08	84.07	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1100.00	0.08	120.16	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1109.44	0.08	138.99	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1114.37	0.08	175.08	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1123.82	0.08	211.17	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1133.26	0.08	229.99	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0672	20.17	0.00	0.00	0.00	0.00	0.00	20.17	1138.19	0.08	250.08	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1143.44	0.08	286.17	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1152.89	0.08	372.67	0.18	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1175.52	0.08	459.17	0.22	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1198.16	0.08	545.67	0.26	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2046	61.38	0.00	0.00	0.00	0.00	0.00	61.38	1220.80	0.08	606.96	0.29	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4567	137.00	0.00	0.00	0.00	0.00	0.00	137.00	1236.83	0.09	743.87	0.36	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4987	149.60	0.00	0.00	0.00	0.00	0.00	149.60	1272.66	0.09	893.38	0.43	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3726	111.79	0.00	0.00	0.00	0.00	0.00	111.79	1311.79	0.09	1005.08	0.49	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4987	149.60	0.00	0.00	0.00	0.00	0.00	149.60	1341.02	0.09	1154.59	0.56	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7507	225.22	0.00	0.00	0.00	0.00	0.00	225.22	1380.14	0.10	1379.71	0.67	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6667	200.01	0.00	0.00	0.00	0.00	0.00	200.01	1439.05	0.10	1579.62	0.77	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5827	174.81	0.00	0.00	0.00	0.00	0.00	174.81	1491.37	0.10	1754.33	0.85	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6247	187.41	0.00	0.00	0.00	0.00	0.00	187.41	1537.08	0.11	1941.63	0.94	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6667	200.01	0.00	0.00	0.00	0.00	0.00	200.01	1586.10	0.11	2141.53	1.04	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1288	338.65	0.00	0.00	0.00	0.00	0.00	338.65	1638.41	0.11	2480.07	1.20	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4649	439.48	0.00	0.00	0.00	0.00	0.00	439.48	1727.00	0.12	2919.42	1.42	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8348	250.43	0.00	0.00	0.00	0.00	0.00	250.43	1841.97	0.13	3169.72	1.54	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2211	666.34	0.00	0.00	0.00	0.00	0.00	666.34	1907.47	0.13	3835.93	1.86	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4312	729.35	0.00	0.00	0.00	0.00	0.00	729.35	2081.81	0.14	4565.14	2.22	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.8093	842.78	0.00	0.00	0.00	0.00	0.00	842.78	2272.63	0.16	5407.76	2.63	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8430	552.91	0.00	0.00	0.00	0.00	0.00	552.91	2493.14	0.17	5960.50	2.89	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2046	61.38	0.00	0.00	0.00	0.00	0.00	61.38	2637.78	0.18	6021.69	2.92	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	2653.79	0.18	6057.67	2.94	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	2663.21	0.18	6093.66	2.96	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0252	7.56	0.00	0.00	0.00	0.00	0.00	7.56	2672.63	0.19	6101.03	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.56	0.19	6100.85	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.51	0.19	6100.66	2.96	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.46	0.19	6100.48	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.41	0.19	6100.29	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.36	0.19	6100.10	2.96	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.31	0.19	6099.92	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.27	0.19	6099.73	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.22	0.19	6099.55	2.96	0.00	0.00
					Total volume (cf)		6104.87								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	1078.00	0.07	7.63	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1080.00	0.07	16.80	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1082.40	0.08	25.97	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1084.80	0.08	35.14	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1087.20	0.08	44.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1089.60	0.08	55.02	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1092.40	0.08	65.73	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1095.20	0.08	76.44	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1098.00	0.08	87.15	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1100.81	0.08	97.86	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1103.61	0.08	108.57	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1106.41	0.08	120.82	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1109.62	0.08	133.07	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1112.82	0.08	145.32	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1116.03	0.08	157.57	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1119.23	0.08	169.82	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1122.44	0.08	182.07	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1125.64	0.08	194.31	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1128.85	0.08	206.56	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1132.05	0.08	218.81	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1135.26	0.08	231.06	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1138.47	0.08	243.31	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1141.67	0.08	255.55	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1144.88	0.08	269.34	0.13	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1148.48	0.08	281.59	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1151.69	0.08	295.38	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1155.30	0.08	309.17	0.15	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1158.90	0.08	322.95	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1162.51	0.08	336.74	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1166.12	0.08	350.53	0.17	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1169.73	0.08	364.31	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1173.34	0.08	378.10	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1176.94	0.08	393.43	0.19	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1180.95	0.08	408.75	0.20	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1184.97	0.08	424.08	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1188.98	0.08	439.41	0.21	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1192.99	0.08	454.73	0.22	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1197.00	0.08	471.60	0.23	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1201.41	0.08	488.46	0.24	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1205.82	0.08	505.33	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0616	18.49	0.00	0.00	0.00	0.00	0.00	18.49	1210.24	0.08	523.74	0.25	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0668	20.03	0.00	0.00	0.00	0.00	0.00	20.03	1215.05	0.08	543.68	0.26	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0834	25.03	0.00	0.00	0.00	0.00	0.00	25.03	1220.27	0.08	568.63	0.28	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0834	25.03	0.00	0.00	0.00	0.00	0.00	25.03	1226.80	0.09	593.57	0.29	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1348	40.44	0.00	0.00	0.00	0.00	0.00	40.44	1233.33	0.09	633.92	0.31	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1348	40.44	0.00	0.00	0.00	0.00	0.00	40.44	1243.89	0.09	674.27	0.33	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1862	55.85	0.00	0.00	0.00	0.00	0.00	55.85	1254.45	0.09	730.03	0.35	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1862	55.85	0.00	0.00	0.00	0.00	0.00	55.85	1269.04	0.09	785.79	0.38	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2375	71.26	0.00	0.00	0.00	0.00	0.00	71.26	1283.63	0.09	856.96	0.42	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2889	86.66	0.00	0.00	0.00	0.00	0.00	86.66	1302.25	0.09	943.53	0.46	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3402	102.07	0.00	0.00	0.00	0.00	0.00	102.07	1324.91	0.09	1045.51	0.51	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3916	117.48	0.00	0.00	0.00	0.00	0.00	117.48	1351.60	0.09	1162.90	0.56	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4430	132.89	0.00	0.00	0.00	0.00	0.00	132.89	1382.31	0.10	1295.69	0.63	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4430	132.89	0.00	0.00	0.00	0.00	0.00	132.89	1417.07	0.10	1428.48	0.69	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4943	148.30	0.00	0.00	0.00	0.00	0.00	148.30	1451.81	0.10	1576.68	0.77	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5457	163.71	0.00	0.00	0.00	0.00	0.00	163.71	1490.60	0.10	1740.28	0.84	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5971	179.12	0.00	0.00	0.00	0.00	0.00	179.12	1533.41	0.11	1919.29	0.93	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5971	179.12	0.00	0.00	0.00	0.00	0.00	179.12	1580.25	0.11	2098.30	1.02	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6484	194.52	0.00	0.00	0.00	0.00	0.00	194.52	1627.10	0.11	2292.71	1.11	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6998	209.93	0.00	0.00	0.00	0.00	0.00	209.93	1677.97	0.12	2502.53	1.21	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9566	286.98	0.00	0.00	0.00	0.00	0.00	286.98	1732.88	0.12	2789.38	1.35	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2134	364.02	0.00	0.00	0.00	0.00	0.00	364.02	1807.94	0.13	3153.27	1.53	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3675	410.24	0.00	0.00	0.00	0.00	0.00	410.24	1903.17	0.13	3563.39	1.73	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5216	456.47	0.00	0.00	0.00	0.00	0.00	456.47	2010.49	0.14	4019.72	1.95	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7784	533.51	0.00	0.00	0.00	0.00	0.00	533.51	2129.91	0.15	4553.08	2.21	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2406	672.19	0.00	0.00	0.00	0.00	0.00	672.19	2269.48	0.16	5225.12	2.54	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3402	102.07	0.00	0.00	0.00	0.00	0.00	102.07	2445.34	0.17	5327.02	2.59	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	2472.01	0.17	5340.72	2.59	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	2475.59	0.17	5349.79	2.60	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	2477.97	0.17	5357.32	2.60	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0154	4.62	0.00	0.00	0.00	0.00	0.00	4.62	2479.94	0.17	5361.77	2.60	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0103	3.08	0.00	0.00	0.00	0.00	0.00	3.08	2481.10	0.17	5364.68	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.86	0.17	5364.51	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.82	0.17	5364.34	2.60	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.77	0.17	5364.16	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.73	0.17	5363.99	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.68	0.17	5363.82	2.60	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.64	0.17	5363.65	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.59	0.17	5363.48	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.55	0.17	5363.30	2.60	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.50	0.17	5363.13	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.46	0.17	5362.96	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.41	0.17	5362.79	2.60	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.37	0.17	5362.61	2.60	0.00	0.00
					Total volume (cf)			5371.59									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1078.00	0.22	3.88	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1079.02	0.22	9.82	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1080.57	0.23	15.75	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1082.12	0.23	23.74	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1084.21	0.23	29.67	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1085.76	0.23	35.60	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1087.32	0.23	41.54	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1088.87	0.23	49.52	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1090.96	0.23	57.51	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1093.05	0.23	65.49	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1095.14	0.23	75.53	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1097.77	0.23	85.57	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1100.39	0.23	95.60	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1103.02	0.23	105.64	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1105.64	0.23	115.67	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1108.27	0.23	127.76	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1111.43	0.23	139.85	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1114.60	0.23	153.99	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1118.30	0.23	168.13	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1122.00	0.23	184.32	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1126.23	0.23	196.40	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1129.40	0.24	210.54	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1133.10	0.24	226.73	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1137.33	0.24	242.92	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0205	18.48	0.00	0.00	0.00	0.00	0.00	18.48	1141.57	0.24	261.16	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0205	18.48	0.00	0.00	0.00	0.00	0.00	18.48	1146.34	0.24	279.40	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1151.11	0.24	299.69	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1156.42	0.24	319.98	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1161.73	0.24	340.27	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0251	22.58	0.00	0.00	0.00	0.00	0.00	22.58	1167.04	0.24	362.61	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0274	24.64	0.00	0.00	0.00	0.00	0.00	24.64	1172.89	0.24	387.00	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0297	26.69	0.00	0.00	0.00	0.00	0.00	26.69	1179.27	0.25	413.45	0.20	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1186.19	0.25	444.00	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1194.19	0.25	474.55	0.23	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0365	32.85	0.00	0.00	0.00	0.00	0.00	32.85	1202.18	0.25	507.15	0.25	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0388	34.90	0.00	0.00	0.00	0.00	0.00	34.90	1210.71	0.25	541.80	0.26	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1219.78	0.25	580.55	0.28	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1229.92	0.26	621.36	0.30	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0479	43.12	0.00	0.00	0.00	0.00	0.00	43.12	1240.60	0.26	664.22	0.32	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0502	45.17	0.00	0.00	0.00	0.00	0.00	45.17	1251.82	0.26	709.12	0.34	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1263.57	0.26	739.66	0.36	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1271.56	0.26	770.19	0.37	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1279.55	0.27	810.98	0.39	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1290.22	0.27	851.78	0.41	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1300.90	0.27	890.52	0.43	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1311.04	0.27	929.25	0.45	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0388	34.90	0.00	0.00	0.00	0.00	0.00	34.90	1321.17	0.28	963.88	0.47	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0411	36.96	0.00	0.00	0.00	0.00	0.00	36.96	1330.23	0.28	1000.56	0.49	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0570	51.33	0.00	0.00	0.00	0.00	0.00	51.33	1339.83	0.28	1051.61	0.51	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0593	53.38	0.00	0.00	0.00	0.00	0.00	53.38	1353.19	0.28	1104.71	0.54	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0703	63.25	0.00	0.00	0.00	0.00	0.00	63.25	1367.09	0.28	1167.67	0.57	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1017	91.50	0.00	0.00	0.00	0.00	0.00	91.50	1383.56	0.29	1258.89	0.61	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2242	201.79	0.00	0.00	0.00	0.00	0.00	201.79	1407.43	0.29	1460.39	0.71	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2326	209.32	0.00	0.00	0.00	0.00	0.00	209.32	1460.16	0.30	1669.40	0.81	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1514.86	0.32	1716.31	0.83	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1527.13	0.32	1763.21	0.86	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0973	87.60	0.00	0.00	0.00	0.00	0.00	87.60	1539.41	0.32	1850.48	0.90	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0824	74.20	0.00	0.00	0.00	0.00	0.00	74.20	1562.25	0.33	1924.35	0.93	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0902	81.22	0.00	0.00	0.00	0.00	0.00	81.22	1581.58	0.33	2005.25	0.97	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0751	67.62	0.00	0.00	0.00	0.00	0.00	67.62	1602.75	0.33	2072.53	1.01	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0599	53.91	0.00	0.00	0.00	0.00	0.00	53.91	1620.35	0.34	2126.10	1.03	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1634.37	0.34	2172.98	1.05	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1646.64	0.34	2211.65	1.07	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1656.76	0.35	2250.32	1.09	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1666.88	0.35	2258.18	1.10	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1668.94	0.35	2266.05	1.10	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1670.99	0.35	2271.86	1.10	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1672.51	0.35	2277.67	1.11	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1674.03	0.35	2287.58	1.11	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1676.63	0.35	2297.50	1.12	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1679.22	0.35	2307.42	1.12	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1681.82	0.35	2315.28	1.12	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1683.88	0.35	2323.14	1.13	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1685.93	0.35	2331.00	1.13	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1687.99	0.35	2336.81	1.13	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1689.51	0.35	2340.56	1.14	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1690.49	0.35	2346.37	1.14	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1692.01	0.35	2354.23	1.14	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1694.07	0.35	2360.04	1.15	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1695.59	0.35	2363.79	1.15	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1696.57	0.35	2369.60	1.15	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1698.09	0.35	2375.40	1.15	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1699.61	0.35	2381.21	1.16	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1701.13	0.35	2384.96	1.16	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1702.11	0.35	2390.76	1.16	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1703.63	0.35	2394.52	1.16	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1704.61	0.36	2400.32	1.17	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1706.13	0.36	2404.07	1.17	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1707.11	0.36	2409.87	1.17	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1708.63	0.36	2413.62	1.17	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1709.61	0.36	2417.37	1.17	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1710.59	0.36	2421.12	1.18	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1711.58	0.36	2424.87	1.18	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1712.56	0.36	2428.62	1.18	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1713.54	0.36	2432.37	1.18	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1714.52	0.36	2436.12	1.18	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1715.50	0.36	2435.76	1.18	0.00	0.00
						Total volume (cf)	2464.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.02ac+0.09ac typ street frontage=1.11ac

5/7/2024 LOT 16

Drainage Area (ac.)	1.1100	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5677	170.30	0.00	0.00	0.00	0.00	0.00	170.30	1078.00	0.07	170.23	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9237	277.12	0.00	0.00	0.00	0.00	0.00	277.12	1122.55	0.08	447.27	0.22	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0208	306.25	0.00	0.00	0.00	0.00	0.00	306.25	1195.04	0.08	753.44	0.37	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9561	286.83	0.00	0.00	0.00	0.00	0.00	286.83	1275.17	0.09	1040.18	0.51	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5064	451.91	0.00	0.00	0.00	0.00	0.00	451.91	1350.20	0.09	1492.00	0.72	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7330	519.89	0.00	0.00	0.00	0.00	0.00	519.89	1468.44	0.10	2011.78	0.98	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0890	626.70	0.00	0.00	0.00	0.00	0.00	626.70	1604.46	0.11	2638.38	1.28	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2832	684.97	0.00	0.00	0.00	0.00	0.00	684.97	1768.43	0.12	3323.22	1.61	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.3514	1005.42	0.00	0.00	0.00	0.00	0.00	1005.42	1947.64	0.14	4328.50	2.10	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.0669	1520.08	0.00	0.00	0.00	0.00	0.00	1520.08	2210.71	0.15	5848.43	2.84	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.5814	1374.42	0.00	0.00	0.00	0.00	0.00	1374.42	2608.45	0.18	7222.66	3.51	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7295	218.86	0.00	0.00	0.00	0.00	0.00	218.86	2968.07	0.21	7441.32	3.61	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.29	0.21	7441.11	3.61	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.24	0.21	7440.90	3.61	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.18	0.21	7440.69	3.61	0.00	0.00	
					Total volume (cf)			7442.75								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0541	16.24	0.00	0.00	0.00	0.00	0.00	16.24	1078.00	0.07	16.16	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0541	16.24	0.00	0.00	0.00	0.00	0.00	16.24	1082.23	0.08	32.33	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1086.46	0.08	45.99	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1090.04	0.08	64.65	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1094.92	0.08	83.31	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1099.80	0.08	119.08	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1109.16	0.08	137.74	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1114.04	0.08	173.51	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1123.40	0.08	209.28	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1132.76	0.08	227.93	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0666	19.99	0.00	0.00	0.00	0.00	0.00	19.99	1137.65	0.08	247.84	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1142.86	0.08	283.61	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1152.22	0.08	369.34	0.18	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1174.65	0.08	455.06	0.22	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1197.08	0.08	540.79	0.26	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2028	60.83	0.00	0.00	0.00	0.00	0.00	60.83	1219.52	0.08	601.53	0.29	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4526	135.77	0.00	0.00	0.00	0.00	0.00	135.77	1235.41	0.09	737.22	0.36	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4942	148.26	0.00	0.00	0.00	0.00	0.00	148.26	1270.92	0.09	885.40	0.43	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3693	110.79	0.00	0.00	0.00	0.00	0.00	110.79	1309.70	0.09	996.10	0.48	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4942	148.26	0.00	0.00	0.00	0.00	0.00	148.26	1338.66	0.09	1144.27	0.56	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7440	223.21	0.00	0.00	0.00	0.00	0.00	223.21	1377.44	0.10	1367.38	0.66	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6608	198.23	0.00	0.00	0.00	0.00	0.00	198.23	1435.82	0.10	1565.51	0.76	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5775	173.25	0.00	0.00	0.00	0.00	0.00	173.25	1487.67	0.10	1738.65	0.84	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6191	185.74	0.00	0.00	0.00	0.00	0.00	185.74	1532.98	0.11	1924.28	0.93	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6608	198.23	0.00	0.00	0.00	0.00	0.00	198.23	1581.56	0.11	2122.39	1.03	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1188	335.63	0.00	0.00	0.00	0.00	0.00	335.63	1633.40	0.11	2457.91	1.19	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4518	435.55	0.00	0.00	0.00	0.00	0.00	435.55	1721.20	0.12	2893.34	1.40	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8273	248.19	0.00	0.00	0.00	0.00	0.00	248.19	1835.15	0.13	3141.40	1.53	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2013	660.39	0.00	0.00	0.00	0.00	0.00	660.39	1900.06	0.13	3801.66	1.85	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4095	722.84	0.00	0.00	0.00	0.00	0.00	722.84	2072.84	0.14	4524.36	2.20	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.7842	835.26	0.00	0.00	0.00	0.00	0.00	835.26	2261.96	0.16	5359.46	2.60	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8266	547.97	0.00	0.00	0.00	0.00	0.00	547.97	2480.50	0.17	5907.26	2.87	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2028	60.83	0.00	0.00	0.00	0.00	0.00	60.83	2623.85	0.18	5967.90	2.90	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	2639.72	0.18	6003.56	2.91	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	2649.05	0.18	6039.23	2.93	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0250	7.49	0.00	0.00	0.00	0.00	0.00	7.49	2658.38	0.18	6046.54	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.30	0.18	6046.35	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.25	0.18	6046.17	2.94	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.20	0.18	6045.98	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.15	0.18	6045.80	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.10	0.18	6045.61	2.94	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.05	0.18	6045.43	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.01	0.18	6045.24	2.93	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2659.96	0.18	6045.06	2.93	0.00	0.00
					Total volume (cf)		6050.36								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0255	7.64	0.00	0.00	0.00	0.00	0.00	7.64	1078.00	0.07	7.56	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1079.98	0.07	16.65	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1082.36	0.08	25.74	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1084.73	0.08	34.82	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1087.11	0.08	43.91	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1089.49	0.08	54.52	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1092.27	0.08	65.14	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1095.05	0.08	75.75	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1097.82	0.08	86.37	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1100.60	0.08	96.98	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1103.38	0.08	107.59	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1106.16	0.08	119.73	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1109.33	0.08	131.87	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1112.51	0.08	144.01	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1115.69	0.08	156.15	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1118.86	0.08	168.29	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1122.04	0.08	180.43	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1125.22	0.08	192.57	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1128.39	0.08	204.71	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1131.57	0.08	216.84	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1134.75	0.08	228.98	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1137.92	0.08	241.12	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1141.10	0.08	253.26	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1144.27	0.08	266.92	0.13	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1147.85	0.08	279.06	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1151.03	0.08	292.72	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1154.60	0.08	306.39	0.15	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1158.18	0.08	320.05	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1161.75	0.08	333.71	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1165.33	0.08	347.38	0.17	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1168.90	0.08	361.04	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1172.48	0.08	374.70	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1176.05	0.08	389.89	0.19	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1180.03	0.08	405.08	0.20	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1184.00	0.08	420.27	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1187.98	0.08	435.46	0.21	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1191.95	0.08	450.65	0.22	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1195.93	0.08	467.36	0.23	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1200.30	0.08	484.08	0.24	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1204.68	0.08	500.79	0.24	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0611	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1209.05	0.08	519.03	0.25	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0662	19.85	0.00	0.00	0.00	0.00	0.00	19.85	1213.82	0.08	538.80	0.26	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0827	24.81	0.00	0.00	0.00	0.00	0.00	24.81	1219.00	0.08	563.52	0.27	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0827	24.81	0.00	0.00	0.00	0.00	0.00	24.81	1225.47	0.09	588.24	0.29	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1336	40.08	0.00	0.00	0.00	0.00	0.00	40.08	1231.93	0.09	628.23	0.31	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1336	40.08	0.00	0.00	0.00	0.00	0.00	40.08	1242.40	0.09	668.22	0.32	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1845	55.35	0.00	0.00	0.00	0.00	0.00	55.35	1252.86	0.09	723.48	0.35	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1845	55.35	0.00	0.00	0.00	0.00	0.00	55.35	1267.33	0.09	778.74	0.38	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2354	70.62	0.00	0.00	0.00	0.00	0.00	70.62	1281.79	0.09	849.27	0.41	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2863	85.89	0.00	0.00	0.00	0.00	0.00	85.89	1300.24	0.09	935.07	0.45	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3372	101.16	0.00	0.00	0.00	0.00	0.00	101.16	1322.70	0.09	1036.14	0.50	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3881	116.43	0.00	0.00	0.00	0.00	0.00	116.43	1349.14	0.09	1152.48	0.56	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4390	131.70	0.00	0.00	0.00	0.00	0.00	131.70	1379.59	0.10	1284.09	0.62	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4390	131.70	0.00	0.00	0.00	0.00	0.00	131.70	1414.03	0.10	1415.69	0.69	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4899	146.97	0.00	0.00	0.00	0.00	0.00	146.97	1448.47	0.10	1562.57	0.76	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5408	162.25	0.00	0.00	0.00	0.00	0.00	162.25	1486.90	0.10	1724.71	0.84	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5917	177.52	0.00	0.00	0.00	0.00	0.00	177.52	1529.33	0.11	1902.12	0.92	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5917	177.52	0.00	0.00	0.00	0.00	0.00	177.52	1575.76	0.11	2079.52	1.01	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6426	192.79	0.00	0.00	0.00	0.00	0.00	192.79	1622.18	0.11	2272.20	1.10	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6935	208.06	0.00	0.00	0.00	0.00	0.00	208.06	1672.60	0.12	2480.14	1.20	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9480	284.41	0.00	0.00	0.00	0.00	0.00	284.41	1727.02	0.12	2764.44	1.34	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2026	360.77	0.00	0.00	0.00	0.00	0.00	360.77	1801.42	0.13	3125.08	1.52	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3553	406.58	0.00	0.00	0.00	0.00	0.00	406.58	1895.79	0.13	3531.53	1.71	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5080	452.40	0.00	0.00	0.00	0.00	0.00	452.40	2002.15	0.14	3983.78	1.93	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7625	528.75	0.00	0.00	0.00	0.00	0.00	528.75	2120.50	0.15	4512.39	2.19	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2206	666.19	0.00	0.00	0.00	0.00	0.00	666.19	2258.83	0.16	5178.42	2.51	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3372	101.16	0.00	0.00	0.00	0.00	0.00	101.16	2433.12	0.17	5279.41	2.56	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	2459.55	0.17	5292.99	2.57	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	2463.10	0.17	5301.98	2.57	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0255	7.64	0.00	0.00	0.00	0.00	0.00	7.64	2465.46	0.17	5309.44	2.58	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0153	4.58	0.00	0.00	0.00	0.00	0.00	4.58	2467.41	0.17	5313.85	2.58	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0102	3.05	0.00	0.00	0.00	0.00	0.00	3.05	2468.56	0.17	5316.73	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.32	0.17	5316.56	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.27	0.17	5316.39	2.58	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.23	0.17	5316.22	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.18	0.17	5316.05	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.14	0.17	5315.88	2.58	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.09	0.17	5315.71	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.05	0.17	5315.53	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.00	0.17	5315.36	2.58	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.96	0.17	5315.19	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.91	0.17	5315.02	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.87	0.17	5314.85	2.58	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.82	0.17	5314.68	2.58	0.00	0.00
					Total volume (cf)			5323.63								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

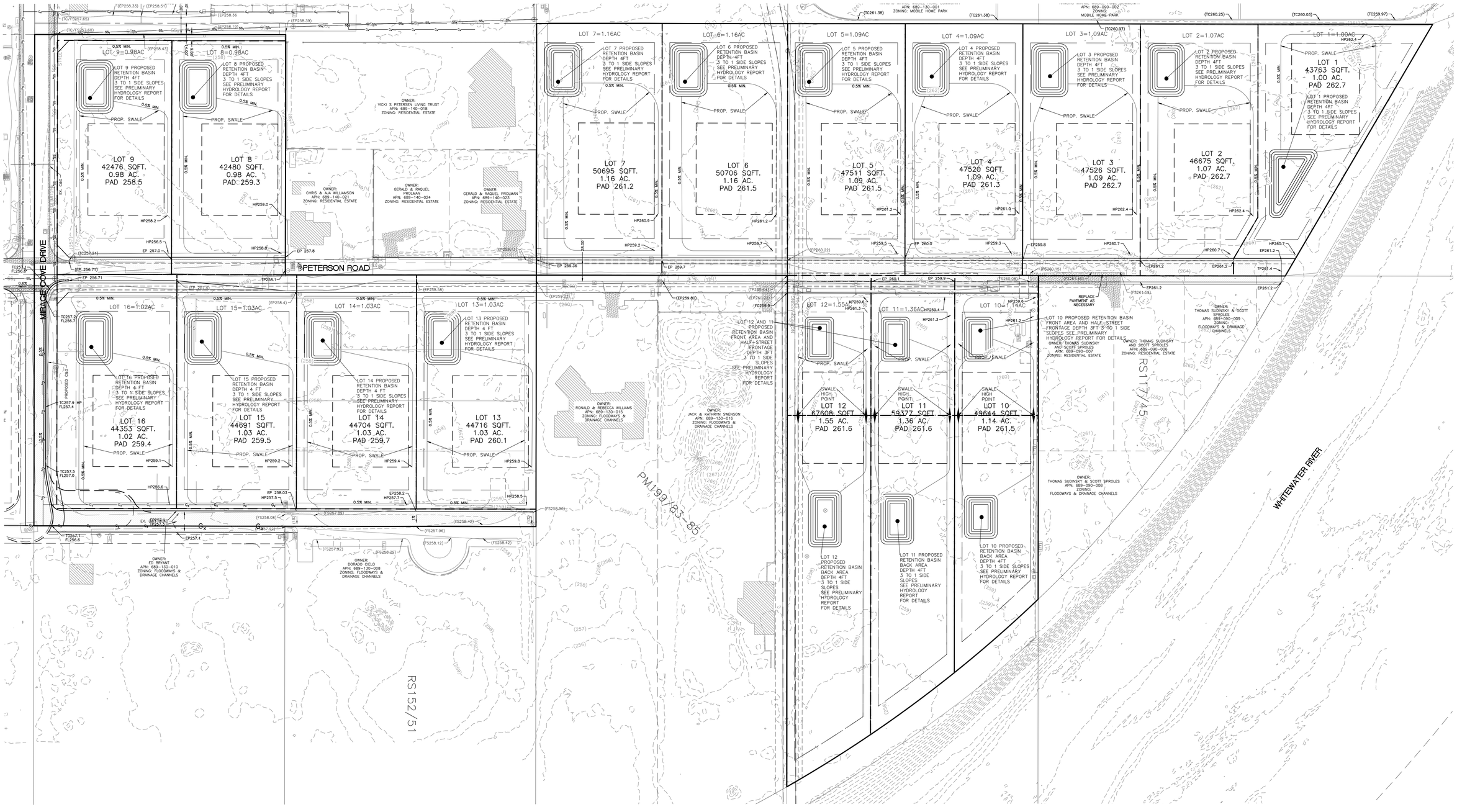
Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1078.00	0.22	3.85	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1079.01	0.22	9.72	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1080.54	0.23	15.60	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1082.08	0.23	23.52	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1084.15	0.23	29.40	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1085.69	0.23	35.27	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1087.23	0.23	41.15	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1088.77	0.23	49.06	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1090.84	0.23	56.98	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1092.91	0.23	64.89	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1094.98	0.23	74.83	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1097.58	0.23	84.78	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1100.19	0.23	94.72	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1102.79	0.23	104.67	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1105.39	0.23	114.61	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1107.99	0.23	126.59	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1111.13	0.23	138.57	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1114.26	0.23	152.58	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1117.93	0.23	166.59	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1121.59	0.23	182.63	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1125.79	0.23	194.61	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1128.93	0.24	208.62	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1132.59	0.24	224.66	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1136.79	0.24	240.70	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0203	18.31	0.00	0.00	0.00	0.00	0.00	18.31	1140.99	0.24	258.78	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0203	18.31	0.00	0.00	0.00	0.00	0.00	18.31	1145.72	0.24	276.85	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1150.45	0.24	296.96	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1155.71	0.24	317.07	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1160.97	0.24	337.17	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0249	22.38	0.00	0.00	0.00	0.00	0.00	22.38	1166.23	0.24	359.31	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0271	24.42	0.00	0.00	0.00	0.00	0.00	24.42	1172.03	0.24	383.49	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0294	26.45	0.00	0.00	0.00	0.00	0.00	26.45	1178.35	0.25	409.69	0.20	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1185.21	0.25	439.97	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1193.13	0.25	470.24	0.23	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0362	32.56	0.00	0.00	0.00	0.00	0.00	32.56	1201.06	0.25	502.55	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0384	34.59	0.00	0.00	0.00	0.00	0.00	34.59	1209.51	0.25	536.89	0.26	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1218.50	0.25	575.29	0.28	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1228.55	0.26	615.73	0.30	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0475	42.73	0.00	0.00	0.00	0.00	0.00	42.73	1239.13	0.26	658.21	0.32	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0497	44.77	0.00	0.00	0.00	0.00	0.00	44.77	1250.24	0.26	702.71	0.34	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1261.89	0.26	732.97	0.36	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1269.81	0.26	763.23	0.37	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1277.73	0.27	803.66	0.39	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1288.31	0.27	844.09	0.41	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1298.89	0.27	882.48	0.43	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1308.93	0.27	920.86	0.45	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0384	34.59	0.00	0.00	0.00	0.00	0.00	34.59	1318.98	0.27	955.18	0.46	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0407	36.63	0.00	0.00	0.00	0.00	0.00	36.63	1327.96	0.28	991.53	0.48	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0565	50.87	0.00	0.00	0.00	0.00	0.00	50.87	1337.47	0.28	1042.12	0.51	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0588	52.90	0.00	0.00	0.00	0.00	0.00	52.90	1350.71	0.28	1094.75	0.53	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0697	62.69	0.00	0.00	0.00	0.00	0.00	62.69	1364.48	0.28	1157.15	0.56	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1008	90.69	0.00	0.00	0.00	0.00	0.00	90.69	1380.81	0.29	1247.55	0.61	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2222	199.99	0.00	0.00	0.00	0.00	0.00	199.99	1404.47	0.29	1447.24	0.70	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2305	207.45	0.00	0.00	0.00	0.00	0.00	207.45	1456.72	0.30	1654.39	0.80	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1510.93	0.31	1700.87	0.83	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1523.09	0.32	1747.35	0.85	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0965	86.81	0.00	0.00	0.00	0.00	0.00	86.81	1535.26	0.32	1833.85	0.89	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0817	73.53	0.00	0.00	0.00	0.00	0.00	73.53	1557.89	0.32	1907.06	0.93	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0894	80.50	0.00	0.00	0.00	0.00	0.00	80.50	1577.05	0.33	1987.23	0.96	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0745	67.01	0.00	0.00	0.00	0.00	0.00	67.01	1598.03	0.33	2053.91	1.00	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0594	53.43	0.00	0.00	0.00	0.00	0.00	53.43	1615.48	0.34	2107.00	1.02	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1629.37	0.34	2153.46	1.05	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1641.53	0.34	2191.78	1.06	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1651.56	0.34	2230.10	1.08	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1661.59	0.35	2237.89	1.09	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1663.62	0.35	2245.68	1.09	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1665.66	0.35	2251.44	1.09	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1667.17	0.35	2257.20	1.10	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1668.68	0.35	2267.02	1.10	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1671.25	0.35	2276.85	1.11	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1673.82	0.35	2286.67	1.11	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1676.39	0.35	2294.46	1.11	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1678.43	0.35	2302.25	1.12	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1680.47	0.35	2310.04	1.12	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1682.51	0.35	2315.79	1.12	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1684.01	0.35	2319.51	1.13	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1684.99	0.35	2325.27	1.13	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1686.49	0.35	2333.05	1.13	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1688.53	0.35	2338.81	1.14	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1690.03	0.35	2342.52	1.14	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1691.01	0.35	2348.28	1.14	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1692.51	0.35	2354.03	1.14	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1694.02	0.35	2359.78	1.15	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1695.52	0.35	2363.50	1.15	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1696.50	0.35	2369.25	1.15	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1698.00	0.35	2372.96	1.15	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1698.97	0.35	2378.71	1.15	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1700.48	0.35	2382.43	1.16	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1701.45	0.35	2388.18	1.16	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1702.95	0.35	2391.89	1.16	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1703.93	0.35	2395.61	1.16	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1704.90	0.36	2399.32	1.16	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1705.87	0.36	2403.04	1.17	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1706.84	0.36	2406.75	1.17	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1707.81	0.36	2410.47	1.17	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1708.79	0.36	2414.18	1.17	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1709.76	0.36	2413.82	1.17	0.00	0.00
					Total volume (cf)		2442.09									Total Overflow (cf)		0.00	

EXHIBITS

PRELIMINARY HYDROLOGY PLAN
TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



LEGEND:

- - - - LOT WATERSHEDS

NORTH

0 50' 100' 150' 200'

SCALE 1"=50'

PRELIMINARY

DATE: 07/09/2024

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL: REGISTERED PROFESSIONAL ENGINEER — PHILLIP K. FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

FOR REVIEW PURPOSES ONLY DATE: _____

PHILLIP K. FOMOTOR PE., PLS.
R.C.E. NO. 47284

PRELIMINARY HYDROLOGY PLAN FOR TENTATIVE TRACT MAP NO. 38971

PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

Project Specific
Preliminary Water Quality Management Plan

For: **Tentative Tract Map 38971**

Located on: Peterson Road, Rancho Mirage, CA 92270

DEVELOPMENT NO. APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022
DESIGN REVIEW NO. **XX-XXX**

Prepared for:
Horti Caesaris LLC
9401 Wilshire Blvd., 12th Floor
Beverly Hills, CA 90212-2928
Telephone: 30(210)812-8242

Prepared by:
Phillip Fomotor, PE
Fomotor Engineering
225 S. Civic Drive, Suite 1-5
Palm Springs, CA 92262
Telephone: 760-323-1842

Original Date Prepared: July 9, 2024

Revision Date(s): N/A

OWNER'S CERTIFICATION

This project-specific Water Quality Management Plan (WQMP) has been prepared for:

Horti Caesaris LLC
for the project known as: Tentative Tract Map 38971, located on Peterson Road, in the City of Rancho Mirage, County of Riverside, California.

This WQMP is intended to comply with the requirements of The **City of Rancho Mirage** for the proposed development of an approximately 20.05 acre residential development at: APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022, on Peterson Road, in the **City of Rancho Mirage**, which includes the requirement for the preparation and implementation of a project-specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity.

The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under **City of Rancho Mirage** Water Quality Ordinance (Municipal Code Section 7.03.110).

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest of its responsibility to implement this WQMP.

"I, the undersigned, certify under penalty of law that I am the owner of the property that is the subject of this WQMP, and that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

_____
Owner's Signature

_____
Owner's Printed Name

_____
Owner's Title/Position

_____
Date

Peterson Road,
Rancho Mirage, CA 92270
30(210)-812-8242

ATTEST

_____
Notary Signature

_____
Printed Name

_____
Title/Position

_____
Date

THIS FORM SHALL BE NOTARIZED BEFORE ACCEPTANCE OF THE FINAL PROJECT SPECIFIC WQMP

July 9, 2024

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I. PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

I. Project Description

Project Owner:
Horti Caesaris LLC
9401 Wilshire Blvd., 12th Floor
Beverly Hills, CA 90212-2928
Telephone: 30(210)-812-8242

WQMP Preparer: Phillip Fomotor, PE / Fomotor Engineering

225 S. Civic Drive, Suite 1-5

Palm Springs, CA 92262

760-323-1842

Project Site Address: Peterson Road
Rancho Mirage, CA 92270

Planning Area/
Community Name/
Development Name: **Tentative Tract Map 38971**

APN Number(s): 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022

Latitude & Longitude: **33.765845, -116.438374**

Receiving Water: **Project Watershed: Whitewater River**

Sub-Watershed: N/A

Project Site Size: **20.05 acres**

Standard Industrial Classification (SIC) Code: **6513**

Formation of Home Owners' Association (HOA)
or Property Owners Association (POA): Y ☒ N ☐

Additional Permits/Approvals required for the Project:

AGENCY	Permit required
State Department of Fish and Wildlife, Fish and Game Code §1602 Streambed Alteration Agreement	Y ☐ N☒
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Certification	Y ☐ N☒
US Army Corps of Engineers, CWA Section 404 permit	Y ☐ N☒
US Fish and Wildlife, Endangered Species Act Section 7 biological opinion	Y ☐ N☒
Statewide Construction General Permit Coverage	Y ☐ N☒
Statewide Industrial General Permit Coverage	Y ☐ N☒
Other *(please list in the space below as required)*	
City of Rancho Mirage Grading & Building Permits	Y ☒ N☐
CVWD Permits	Y ☒ N☐

PROJECT DESCRIPTION

The proposed project consists of a 20.05 acre proposed residential development, which is located on: Peterson Road, in the City of Rancho Mirage, CA. The 20.05 acre project area (APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022) on: Peterson Road, in the City of Rancho Mirage, CA is currently vacant.

The now vacant lots (APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022) are proposed to have new houses with access driveways, individual surface retention basins, and landscaping.

Construction equipment and materials will consist of typical striping, asphalt and concrete construction materials, and associated equipment for installation. All construction equipment and materials will be stored on APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022. No hazardous materials will be allowed to be stored on the property.

Appendix A of this project-specific WQMP includes a complete copy of the final Conditions of Approval. Appendix B of this project-specific WQMP includes:

a. A Vicinity Map identifying the project site and surrounding planning areas in sufficient detail; and

b. A Site Plan for the project. The Site Plan included as part of Appendix B depicts the following project features:

- Location and identification of all structural BMPs, including Source Control, LID/Site Design and Treatment Control BMPs.
- Landscaped areas.
- Paved areas and intended uses (i.e., parking, outdoor work area, outdoor material storage area, sidewalks, patios, tennis courts, etc.).
- Number and type of structures and intended uses (i.e., buildings, tenant spaces, dwelling units, community facilities such as pools, recreation facilities, tot lots, etc.).
- Infrastructure (i.e., streets, storm drains, etc.) that will revert to public agency ownership and operation.
- Location of existing and proposed public and private storm drainage facilities (i.e., storm drains, channels, basins, etc.), including catch basins and other inlets/outlet structures. Existing and proposed drainage facilities should be clearly differentiated.
- Location(s) of Receiving Waters to which the project directly or indirectly discharges.
- Location of points where onsite (or tributary offsite) flows exit the property/project site.
- Delineation of proposed drainage area boundaries, including tributary offsite areas, for each location where flows exit the project site and existing site (where existing site flows are required to be addressed). Each tributary area should be clearly denoted.

- Pre- and post-project topography.

Appendix I is a one page form that summarizes pertinent information relative to this project-specific WQMP.

II. Site Characterization

Land Use Designation or Zoning:	Existing R-E Proposed R-E
Current Property Use:	**The parcels are currently vacant.**
Proposed Property Use:	**A new housing development, new access driveways, individual surface retention basins, and landscaping.**
Availability of Soils Report:	Y ☒ N ☐ *Note: A soils report is required if infiltration BMPs are utilized. Attach report in Appendix E.*
Phase 1 Site Assessment:	Y ☐ N ☒ *Note: If prepared, attached remediation summary and use restrictions in Appendix H.*

Receiving Waters for Urban Runoff from Site

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use Designated Receiving Waters
Whitewater River	None Listed	MUN, AGR, GWR, REC I, REC II, WARM, COLD, POW	N/A
Coachella Valley Storm Water Channel	Pathogens, Toxaphene	FRSH, REC I, REC II, WARM, WILD, RARE	11 Miles
Salton Sea	Salinity, Selenium	MUN, AGR	31 Miles

III. Pollutants of Concern

Table 1. Pollutant of Concern Summary

Pollutant Category	Potential for Project and/or Existing Site	Causing Receiving Water Impairment
Bacteria/Virus	Yes	Yes
Heavy Metals	No	No
Nutrients	No	No
Pesticides	Yes	No
Toxic Organic Compounds	Yes	No
Sediment/Turbidity	No	No
Trash & Debris	Yes	No
Oxygen Demanding Substances	No	No
Oil & Grease	Yes	No
Toxaphene	No	No
PCBs	No	No
Dieltrin	No	No
DDT	No	No

IV. Hydrologic Conditions of Concern

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☒ The project will be required to retain urban runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater"). This section does not need to be completed; however, retention facility design details and sizing calculations must be included in Appendix F.

No ☐ This section must be completed.

This Project meets the following condition:

☐ **Condition A**: 1) Runoff from the Project is discharged directly to a publicly-owned, operated and maintained MS4 or engineered and maintained channel, 2) the discharge is in full compliance with local land use authority requirements for connections and discharges to the MS4 (including both quality and quantity requirements), 3) the discharge would not significantly impact stream habitat in proximate Receiving Waters, **and** 4) the discharge is authorized by the local land use authority.

☐ **Condition B**: The project disturbs less than 1 acre and is not part of a larger common plan of development that exceeds 1 acre of disturbance. The disturbed area calculation must include all disturbances associated with larger plans of development.

☐ **Condition C**: The project's runoff flow rate, volume, velocity and duration for the post-development condition do not exceed the pre-development condition for the 2-year, 24-hour and 10-year 24-hour rainfall events. This condition can be achieved by, where applicable, complying with the local land use authority's on-site retention ordinance, or minimizing impervious area on a site and incorporating other Site-Design BMP concepts and LID/Site Design BMPs that assure non-exceedance of pre-development conditions. This condition must be substantiated by hydrologic modeling methods acceptable to the local land use authority.

☐ **None:** Refer to Section 3.4 of the Whitewater River Region WQMP Guidance document for additional requirements.

Supporting engineering studies, calculations, and reports are included in Appendix C.

	2 year – 24 hour		10 year – 24 hour	
	Precondition	**Post-condition**	**Precondition**	**Post-condition**
Discharge (cfs)				
Velocity (fps)				
Volume (cubic feet)				
Duration (minutes)				

V. Best Management Practices

This project implements Best Management Practices (BMPs) to address the Pollutants of Concern that may potentially be generated from the use of the project site. These BMPs have been selected and implemented to comply with Section 3.5 of the WQMP Guidance document, and consist of Site Design BMP concepts, Source Control, LID/Site Design and, if/where necessary, Treatment Control BMPs as described herein.

V.1 Site Design BMP Concepts, LID/Site Design and Treatment Control BMPs

Local Jurisdiction Requires On-Site Retention of Urban Runoff:

Yes ☒ The project will be required to retain Urban Runoff onsite in conformance with local ordinance (See Table 6 of the WQMP Guidance document, "Local Land use Authorities Requiring Onsite Retention of Stormwater). **The LID/Site Design measurable goal has thus been met (100%), and Sections V.1.A and V.1.B do not need to be completed**; however, retention facility design details and sizing calculations must be included in Appendix F, and '100%' should be entered into Column 3 of Table 6 below.

No ☐ Section V.1 must be completed.

This section of the Project-Specific WQMP documents the LID/Site Design BMPs and, if/where necessary, the Treatment Control BMPs that will be implemented on the project to meet the requirements detailed within Section 3.5.1 of the WQMP Guidance document. Section 3.5.1 includes requirements to implement Site Design Concepts and BMPs, and includes requirements to address Pollutants of Concern with BMPs. Further, sub-section 3.5.1.1 specifically requires that Pollutants of Concern be addressed with LID/Site Design BMPs to the extent feasible.

LID/Site Design BMPs are those BMPs listed within Table 2 below which promote retention and/or feature a natural treatment mechanism; off-site and regionally-based BMPs are also LID/Site Design BMPs, and therefore count towards the measurable goal, if they fit these criteria. This project incorporates LID/Site Design BMPs to fully address the Treatment Control BMP requirement where and to the extent feasible. If and where it has been acceptably demonstrated to the local land use authority that it is infeasible to fully meet this requirement with LID/Site Design BMPs, Section V.1.B (below) includes a description of the conventional Treatment Control BMPs that will be substituted to meet the same requirements.

In addressing Pollutants of Concern, BMPs are selected using Table 2 below.

Table 2. BMP Selection Matrix Based Upon Pollutant of Concern Removal Efficiency [1]

(Sources: Riverside County Flood Control & Water Conservation District Design Handbook for Low Impact Development Best Management Practices, dated September 2011, the Orange County Technical Guidance Document for Water Quality Management Plans, dated May 19, 2011, and the Caltrans Treatment BMP Technology Report, dated April 2010 and April 2008)

Pollutant of Concern	Landscape Swale[2, 3]	Landscape Strip[2, 3]	Biofiltration (with underdrain)[2, 3]	Extended Detention Basin[2]	Sand Filter Basin[2]	Infiltration Basin[2]	Infiltration Trench[2]	Permeable Pavement[2]	Bioretention (w/o underdrain)[2, 3]	Other BMPs Including Proprietary BMPs[4, 6]
Sediment & Turbidity	M	M	H	M	H	H	H	H	H	Varies by Product[5]
Nutrients	L/M	L/M	M	L/M	L/M	H	H	H	H	
Toxic Organic Compounds	M/H	M/H	M/H	L	L/M	H	H	H	H	
Trash & Debris	L	L	H	H	H	H	H	L	H	
Bacteria & Viruses (also: Pathogens)	L	M	H	L	M	H	H	H	H	
Oil & Grease	M	M	H	M	H	H	H	H	H	
Heavy Metals	M	M/H	M/H	L/M	M	H	H	H	H	

Abbreviations:

L: Low removal efficiency M: Medium removal efficiency H: High removal efficiency

Notes:

(1) Periodic performance assessment and updating of the guidance provided by this table may be necessary.

(2) Expected performance when designed in accordance with the most current edition of the document, "Riverside County, Whitewater River Region Stormwater Quality Best Management Practice Design Handbook".

(3) Performance dependent upon design which includes implementation of thick vegetative cover. Local water conservation and/or landscaping requirements should be considered; approval is based on the discretion of the local land use authority.

(4) Includes proprietary stormwater treatment devices as listed in the CASQA Stormwater Best Management Practices Handbooks, other stormwater treatment BMPs not specifically listed in this WQMP (including proprietary filters, hydrodynamic separators, inserts, etc.), or newly developed/emerging stormwater treatment technologies.

(5) Expected performance should be based on evaluation of unit processes provided by BMP and available testing data. Approval is based on the discretion of the local land use authority.

(6) When used for primary treatment as opposed to pre-treatment, requires site-specific approval by the local land use authority.

V.1.A SITE DESIGN BMP CONCEPTS AND LID/SITE DESIGN BMPS

This section documents the Site Design BMP concepts and LID/Site Design BMPs that will be implemented on this project to comply with the requirements detailed in Section 3.5.1 of the WQMP Guidance document.

- Table 3 herein documents the implementation of the Site Design BMP Concepts described in sub-sections 3.5.1.3 and 3.5.1.4.
- Table 4 herein documents the extent to which this project has implemented the LID/Site Design goals described in sub-section 3.5.1.1.

Table 3. Implementation of Site Design BMP Concepts

Design Concept	Technique	Specific BMP	Included			Brief Reason for BMPs Indicated as No or N/A
			Yes	No	N/A	
Site Design BMP Concept 1	**Minimize Urban Runoff, Minimize Impervious Footprint, and Conserve Natural Areas (See WQMP Section 3.5.1.3)**	Conserve natural areas by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition.	☐	☐	☐	
		Conserve natural areas by incorporating the goals of the Multi-Species Habitat Conservation Plan or other natural resource plans.	☐	☐	☐	
		Preserve natural drainage features and natural depressional storage areas on the site.	☐	☐	☐	
		Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.	☐	☐	☐	
		Use natural drainage systems.	☐	☐	☐	
		Where applicable, incorporate Self-Treating Areas	☐	☐	☐	
		Where applicable, incorporate Self-Retaining Areas	☐	☐	☐	
		Increase the building floor to area ratio (i.e., number of stories above or below ground).	☐	☐	☐	
		Construct streets, sidewalks and parking lot aisles to minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.	☐	☐	☐	
		Reduce widths of streets where off-street parking is available.	☐	☐	☐	
		Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.	☐	☐	☐	
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Design residential and commercial sites to contain and infiltrate roof runoff, or direct roof runoff to landscaped swales or buffer areas.	☐	☐	☐	
		Drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.	☐	☐	☐	
		Incorporate landscaped buffer areas between sidewalks and streets.	☐	☐	☐	
		Use natural or landscaped drainage swales in lieu of underground piping or imperviously lined swales.	☐	☐	☐	
		Where soil conditions are suitable, use perforated pipe or gravel filtration pits for low flow infiltration.	☐	☐	☐	
		Maximize the permeable area by constructing walkways, trails, patios, overflow parking, alleys, driveways, low-traffic streets, and other low-traffic areas with open-jointed paving materials or permeable surfaces such as pervious concrete, porous asphalt, unit pavers, and granular materials.	☐	☐	☐	
		Use one or more of the following:				
		Rural swale system: street sheet flows to landscaped swale or gravel shoulder, curbs used at street corners, and culverts used under driveways and street crossings.	☐	☐	☐	
		Urban curb/swale system: street slopes to curb; periodic swale inlets drain to landscaped swale or biofilter.	☐	☐	☐	
		Dual drainage system: first flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to MS4s.	☐	☐	☐	
		Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	
		Use one or more of the following for design of driveways and private residential parking areas:				
		Design driveways with shared access, flared (single lane at street), or wheel strips (paving only under the tires).	☐	☐	☐	
		Uncovered temporary or guest parking on residential lots paved with a permeable surface, or designed to drain into landscaping.	☐	☐	☐	

Table 3. Site Design BMP Concepts (continued)

Design Concept	Technique	Specific BMP	Included: Yes	Included: No	Included: N/A	Brief Reason for Each BMP Indicated as No or N/A
Site Design BMP Concept 2 (cont'd)	**Minimize Directly Connected Impervious Area (See WQMP Section 3.5.1.4)**	Other comparable and equally effective Site Design BMP concept(s) as approved by the local land use authority (Note: Additional narrative required to describe BMP and how it addresses site design concept).	☐	☐	☐	
		Use one or more of the following for design of parking areas:				
		Where landscaping is proposed in parking areas, incorporate parking area landscaping into the drainage design.	☐	☐	☐	
		Overflow parking (parking stalls provided in excess of the Permittee's minimum parking requirements) may be constructed with permeable pavement.	☐	☐	☐	
		Other comparable and equally effective Site Design BMP (or BMPs) as approved by the local land use authority (Note: Additional narrative required describing BMP and how it addresses site design concept).	☐	☐	☐	

Project Site Design BMP Concepts:

n/a

Alternative Project Site Design BMP Concepts:

n/a

Table 4. LID/Site Design BMPs Meeting the LID/Site Design Measurable Goal

(1) DRAINAGE SUB-AREA ID OR NO.	(2) LID/SITE DESIGN BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF LID/SITE DESIGN BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
TOTAL PROJECT AREA TREATED WITH LID/SITE DESIGN BMPs (NEAREST 0.1 ACRE)						20.1

*** LID/Site Design BMPs listed in this table are those that completely address the 'Treatment Control BMP requirement' for their drainage sub-area.**

Justification of infeasibility for sub-areas not addressed with LID/Site Design BMPs

n/a

V.1.B TREATMENT CONTROL BMPS

Conventional Treatment Control BMPs shall be implemented to address the project's Pollutants of Concern as required in WQMP Section 3.5.1 where, and to the extent that, Section V.1.A has demonstrated that it is infeasible to meet these requirements through implementation of LID/Site Design BMPs.

☒ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP completely address the 'Treatment Control BMP requirement' for the entire project site (and where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP Guidance document. Supporting documentation for the sizing of these LID/Site Design BMPs is included in Appendix F. ***Section V.1.B does not need to be completed**.

☐ The LID/Site Design BMPs described in Section V.1.A of this project-specific WQMP do **NOT** completely address the 'Treatment Control BMP requirement' for the entire project site (or where applicable, entire existing site) as required in Section 3.5.1.1 of the WQMP. ***Section V.1.B must be completed.**

The Treatment Control BMPs identified in this section are selected, sized and implemented to treat the design criteria of V_{BMP} and/or Q_{BMP} for all project (and if required, existing site) drainage sub-areas which were not fully addressed using LID/Site Design BMPs. Supporting documentation for the sizing of these Treatment Control BMPs is included in Appendix F.

Table 5: Treatment Control BMP Summary

(1) DRAINAGE SUB-AREA ID OR NO.	(2) TREATMENT CONTROL BMP TYPE* (See Table 2)	(3) POTENTIAL POLLUTANTS OF CONCERN WITHIN DRAINAGE SUB-AREA (Refer to Table 1)	(4) POTENTIAL POLLUTANTS WITHIN SUB-AREA CAUSING RECEIVING WATER IMPAIRMENTS (Refer to Table 1)	(5) EFFECTIVENESS OF TREATMENT CONTROL BMP AT ADDRESSING IDENTIFIED POTENTIAL POLLUTANTS (U, L, M, H/M, H; see Table 2)	(6) BMP MEETS WHICH DESIGN CRITERIA? (Identify as V_{BMP} OR Q_{BMP})	(7) TOTAL AREA WITHIN DRAINAGE SUB-AREA (Nearest 0.1 acre)
	TOTAL PROJECT AREA TREATED WITH TREATMENT CONTROL BMPs (NEAREST 0.1 ACRE)					20.1

V.1.C MEASURABLE GOAL SUMMARY

This section documents the extent to which this project has met the measurable goal described in WQMP Section 3.5.1.1 of addressing 100% of the project's 'Treatment Control BMP requirement' with LID/Site Design BMPs. Projects required to retain Urban Runoff onsite in conformance with local ordinance are considered to have met the measurable goal; for these instances, '100%' is entered into Column 3 of the Table.

Table 6: Measurable Goal Summary

(1) **Total Area Treated with <u>LID/Site Design</u> BMPs** **(Last row of Table 4)**	(2) **Total Area Treated with <u>Treatment Control</u> BMPs** **(Last row of Table 5)**	(3) **% of Treatment Control BMP Requirement addressed with LID/Site Design BMPs**
20.05AC	0	100%

V.2 SOURCE CONTROL BMPS

This section identifies and describes the Source Control BMPs applicable and implemented on this project.

Table 7. Source Control BMPs

BMP Name	Check One		If not applicable, state brief reason
	Included	Not Applicable	
Non-Structural Source Control BMPs			
Education for Property Owners, Operators, Tenants, Occupants, or Employees	☒	☐	
Activity Restrictions	☒	☐	
Irrigation System and Landscape Maintenance	☒	☐	
Common Area Litter Control	☐	☒	N/A
Street Sweeping Private Streets and Parking Lots	☒	☐	
Drainage Facility Inspection and Maintenance	☒	☐	
Structural Source Control BMPs			
Storm Drain Inlet Stenciling and Signage	☒	☐	
Landscape and Irrigation System Design	☒	☐	
Protect Slopes and Channels	☐	☒	N/A
Provide Community Car Wash Racks	☐	☒	N/A
Properly Design*:			
Fueling Areas	☐	☒	N/A
Air/Water Supply Area Drainage	☐	☒	N/A
Trash Storage Areas	☐	☒	N/A
Loading Docks	☐	☒	N/A
Maintenance Bays	☐	☒	N/A
Vehicle and Equipment Wash Areas	☐	☒	N/A
Outdoor Material Storage Areas	☐	☒	N/A
Outdoor Work Areas or Processing Areas	☐	☒	N/A
Provide Wash Water Controls for Food Preparation Areas	☐	☒	N/A

*Details demonstrating proper design must be included in Appendix F.

Non-Structural Source Control BMPs

Education for Property Owners, Operators, or Employees

Practical informational materials to promote the prevention of Urban Runoff pollution is to be provided by the project proponent to the site occupants/tenants. These materials shall include general housekeeping practices that contribute to the protection of Urban Runoff quality and BMP's that eliminate or reduce pollution during subsequent property improvements. These materials can be obtained from the Permittee or at www.floodcontrol.co.riverside.ca.us/stormwater/

For employees and contractors maintaining the landscape and drainage facilities, BMP training and education programs must be provided by the HOA to all new employees within 6 months of hire date and annually thereafter. Employee training materials may be derived from educational materials available through the Permittee or from resources such as "Stormwater Best Management Practices Handbook for Industrial and Commerical" (CASQA, 2003). The most recent editions of the CASQA handbooks can be downloaded at www.cabmphandbooks.com.

Activity Restrictions

The HOA shall implement the following restrictions for the purpose of receiving water quality protection. The restrictions to be included therein shall include:

- Prohibiting the blowing, sweeping, or hosing of debris into streets, storm drain inlets or other conveyances.
- Require trash can and dumpster lids be closed at all times.
- Prohibit vehicle washing, maintenance, or repair within the project.

Irrigation System and Landscape Maintenance

- Maintenance of irrigation systems and landscaping shall be consistent with the Permittee's water conservation ordinance.
- Fertilizer and pesticide usage shall be consistent with the instructions contained on product labels and with regulations administered by California's Department of Pesticide Regulation.
- Provide regular landscape maintenance, including replacement of dead vegetation, repair of erosion rills, proper disposal of green waste.
- Provide regular irrigation system maintenance, including periodic testing and observation of the irrigation system to detect overspray, broken sprinkler heads, and other system failures.
- Provide weekly irrigation system and landscape area maintenance.
- Responsible party is the HOA for all areas.

Parking Lot Sweeping

- Private parking areas shall be swept at least quarterly, including just prior to the start of the rainy season (October 1st). The HOA is responsible for conducting the periodic sweeping.

Drainage Facility Inspection and Maintenance

- Routine maintenance of the privately owned on-site drainage facilities, including parking lot catch basins, storm drains, and retention systems, at a minimum shall take place in the late summer or early fall prior to the rainy season (October 1st). The drainage facilities must be cleaned if accumulated sediment/debris fills 25% or more of the sediment/debris storage capacity. Drainage facilities shall be inspected annually by the HOA and cleaning frequency shall be assessed.

Structural Source Control BMPs

Storm Drain Inlet Stenciling and Signage

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language (such as "NO DUMPING ONLY RAIN IN THE DRAIN") and/or graphical icons to discourage illegal dumping.
- The HOA is responsible for maintaining legibility of stencils and signs.

Landscape and Irrigation System Design

Final Project Landscape and Irrigation System Design plans are to employ rain shutoff devices to prevent irrigation during and after precipitation events.

Irrigation system to be designed for each landscape area's specific water requirements.

Use flow reducers or shutoff valves triggered by a pressure drop to control water loss due to broken sprinkler heads or lines.

The timing and application methods of irrigation water shall be designed to minimize the runoff of excess irrigation water into streets and storm drain catch basins.

Comply with Coachella Valley Water Agency and City of Rancho Mirage water conservation ordinances.

Final Landscape plans to:

- Utilize plants with similar water requirements, group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface infiltration.
- Use mulches in planter areas without ground cover to minimize sediment in runoff.
- Install appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant material where possible.
- Choose plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth.

Source-Control BMPS Not Required

There are no slopes or channels that will require protection. Community Car Wash Racks will not be necessary for this facility.

Appendix D includes copies of the educational materials (described in Section 3.5.2.1 of the WQMP Guidance document) that will be used in implementing this project-specific WQMP.

V.3 EQUIVALENT TREATMENT CONTROL BMP ALTERNATIVES

N/A

V.4 REGIONALLY-BASED BMPS

N/A

VI. Operation and Maintenance Responsibility for BMPs

Appendix G of this project-specific WQMP includes copies of CC&Rs, Covenant and Agreements, BMP Maintenance Agreement and/or other mechanisms used to ensure the ongoing operation, maintenance, funding, transfer and implementation of the project-specific WQMP requirements.

BMP	Operation and Maintenance Activities	BMP Start Date	Frequency	Parties Responsible	Records
Education for HOA, and Employees	Educational materials are included in this WQMP	At the completion of project	To HOA and Employees at the time of occupancy. To all new employees and contractors within 6 months of hire date and annually thereafter	HOA	Records of distribution and implementation of education materials shall be kept by the HOA.
Activity Restrictions	As outlined in this WQMP	For HOA and employees	Ongoing	HOA	N/A
Irrigation System and Landscape Maintenance	Inspect landscaping and irrigation systems and repair/replace if needed	At the completion of project	The landscaping and irrigation systems shall be monitored monthly	HOA	Records of Irrigation System and Landscape Maintenance shall be kept by the HOA.
Sweeping Parking Lots	Sweep onsite parking lot areas	At the completion of project	At least quarterly, including just prior to the start of the rainy season (October 1st).	HOA	N/A
Drainage Facility	Routine maintenance, including parking	At the completion of project	Maintenance annually as a minimum, just	HOA	Records of Drainage Facility

Inspection and Maintenance	lot catch basins, storm drains, and retention systems, cleaned if accumulated sediment/debris fills 25% or more of the sediment/debris storage capacity in the upper chamber		prior to the rainy season (October 1st). Inspect annually and cleaning frequency to be assessed. Inspect after a rain event		Inspection and Maintenance shall be kept by the HOA.
Storm Drain Inlet Stenciling and Signage	maintain legibility of stencils and signs	At the completion of project	Inspect annually	HOA	N/A
Landscape and Irrigation System Design	Maintain Landscape and Irrigation system in accordance with the original design	At the completion of project	Inspect and maintain weekly	HOA	N/A

VII. Funding

The HOA is responsible for funding the operation and maintenance of the BMP's outlined in this report

Appendix A

Conditions of Approval

To be added when available.

Appendix B

WQMP Site Plan, and Receiving Waters Map

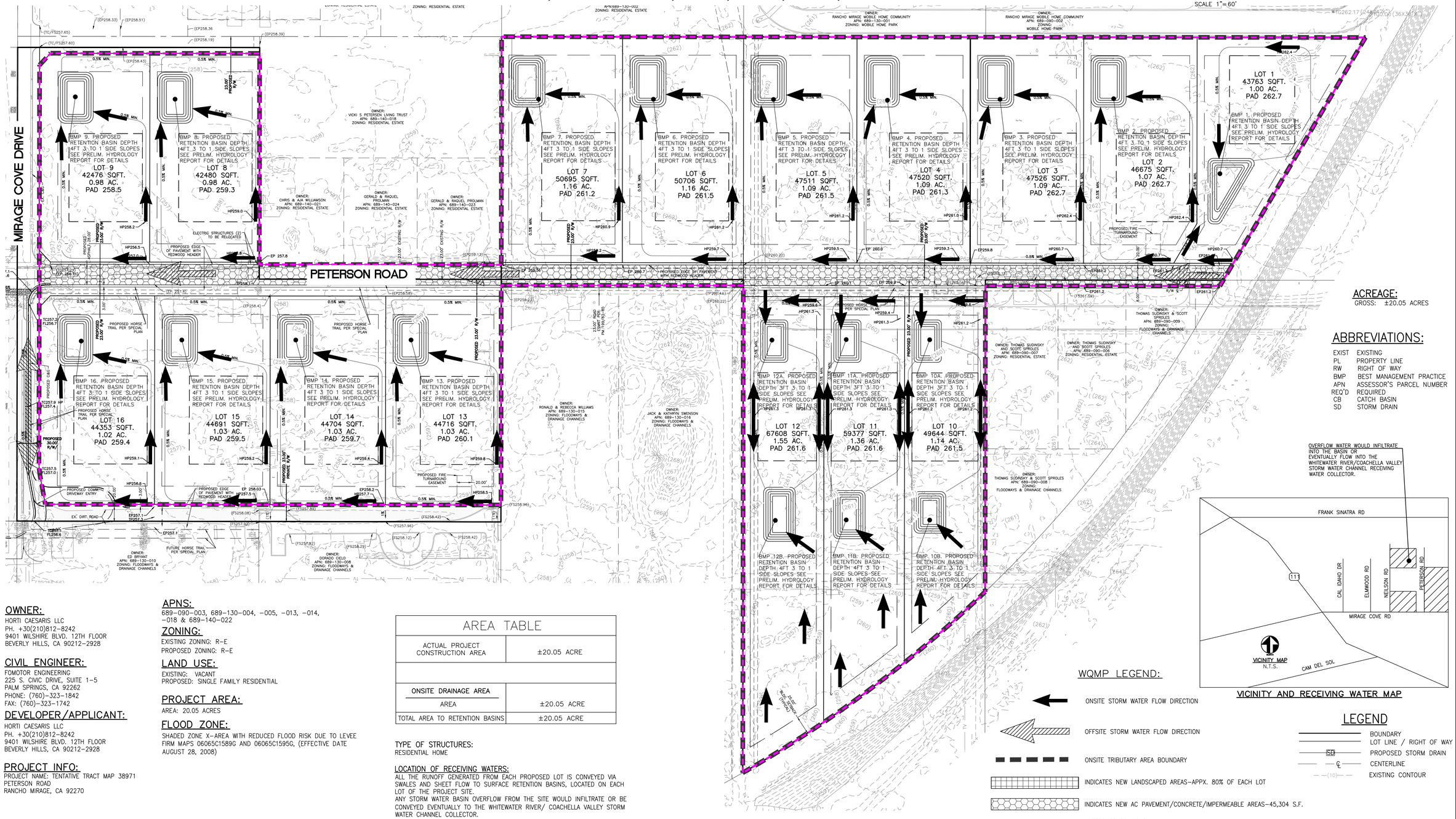
IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

PRELIMINARY WQMP SITE PLAN

FOR

TENTATIVE TRACT MAP NO. 38971

APNS: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022



VICINITY AND RECEIVING WATER MAP

ACREAGE:

GROSS: ±20.05 ACRES

ABBREVIATIONS:

EXIST	EXISTING
PL	PROPERTY LINE
RW	RIGHT OF WAY
BMP	BEST MANAGEMENT PRACTICE
APN	ASSESSOR'S PARCEL NUMBER
REQ'D	REQUIRED
CB	CATCH BASIN
SD	STORM DRAIN

OWNER:

HORTI CAESARIS LLC
PH. +30(210)812-8242
9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928

CIVIL ENGINEER:

FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA 92262
PHONE: (760)-323-1842
FAX: (760)-323-1742

DEVELOPER/APPLICANT:

HORTI CAESARIS LLC
PH. +30(210)812-8242
9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928

PROJECT INFO:

PROJECT NAME: TENTATIVE TRACT MAP 38971
PETERSON ROAD
RANCHO MIRAGE, CA 92270

APNS:

689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022

ZONING:

EXISTING ZONING: R-E
PROPOSED ZONING: R-E

LAND USE:

EXISTING: VACANT
PROPOSED: SINGLE FAMILY RESIDENTIAL

PROJECT AREA:

AREA: 20.05 ACRES

FLOOD ZONE:

SHADED ZONE X-AREA WITH REDUCED FLOOD RISK DUE TO LEVEE FIRM MAPS 06065C1589G AND 06065C1595G, (EFFECTIVE DATE AUGUST 28, 2008)

AREA TABLE	
ACTUAL PROJECT CONSTRUCTION AREA	±20.05 ACRE
ONSITE DRAINAGE AREA	
AREA	±20.05 ACRE
TOTAL AREA TO RETENTION BASINS	±20.05 ACRE

TYPE OF STRUCTURES:
RESIDENTIAL HOME

LOCATION OF RECEIVING WATERS:
ALL THE RUNOFF GENERATED FROM EACH PROPOSED LOT IS CONVEYED VIA SWALES AND SHEET FLOW TO SURFACE RETENTION BASINS, LOCATED ON EACH LOT OF THE PROJECT SITE.
ANY STORM WATER BASIN OVERFLOW FROM THE SITE WOULD INFILTRATE OR BE CONVEYED EVENTUALLY TO THE WHITEWATER RIVER/ COACHELLA VALLEY STORM WATER CHANNEL COLLECTOR.

WQMP LEGEND:

- ONSITE STORM WATER FLOW DIRECTION
- OFFSITE STORM WATER FLOW DIRECTION
- ONSITE TRIBUTARY AREA BOUNDARY
- INDICATES NEW LANDSCAPED AREAS-APPX. 80% OF EACH LOT
- INDICATES NEW AC PAVEMENT/CONCRETE/IMPERMEABLE AREAS-45,304 S.F.
- WATERSHED BOUNDARY

LEGEND

- BOUNDARY
- LOT LINE / RIGHT OF WAY
- PROPOSED STORM DRAIN
- CENTERLINE
- (10) EXISTING CONTOUR

PREPARED 07-09-2024

IMPORTANT NOTICE
CALL BEFORE YOU DIG
SECTION 4216 OF THE GOVERNMENT CODE REQUIRES AN INQUIRY IDENTIFICATION NUMBER BE ISSUED BEFORE A PERMIT TO EXCAVATE WILL BE VALID. FOR YOUR PRE-EXCAVATION I.D. NUMBER CALL:
UNDERGROUND SERVICE ALERT
TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

ENGINEER: **FOMOTOR ENGINEERING**
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

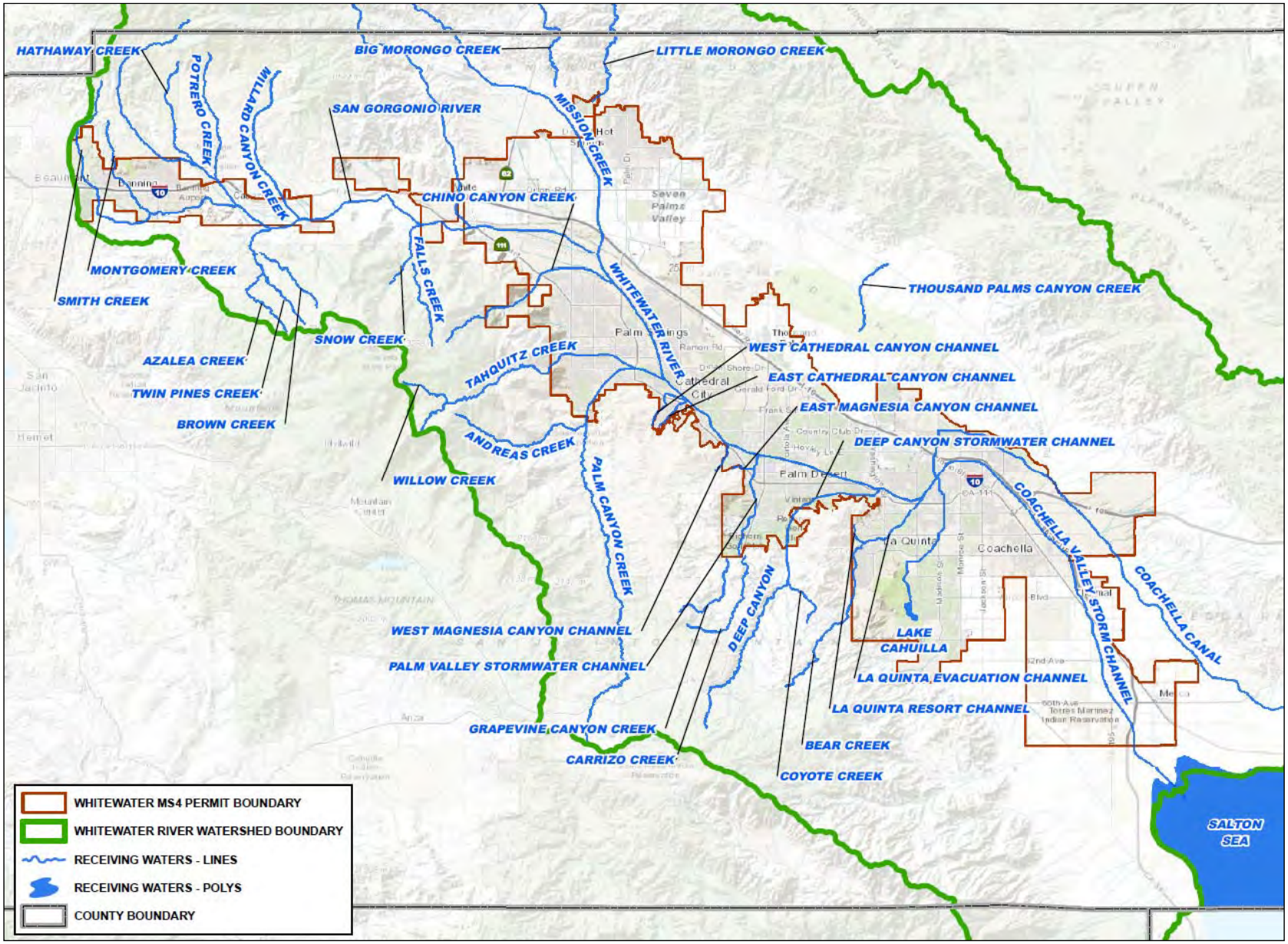
PREPARED UNDER THE DIRECT SUPERVISION OF:
PHILLIP K FOMOTOR, P.E. PLS. R.C.E. 47284 EXP. ____ DATE ____

CITY OF CATHEDRAL CITY

PROJECT DESCRIPTION
PRELIMINARY WQMP SITE PLAN
FOR
TENTATIVE TRACT MAP NO. 38971

SHEET 1
OF 1
PRIVATE REFERENCE #
CITY REFERENCE #

Figure 2. Whitewater River Region Receiving Waters Map



Appendix C

Supporting Detail Related to Hydrologic Conditions of Concern

See App. "F" For Hydrology Study and BMP sizing calculations

NOT APPLICABLE

Appendix D

Educational Materials

Helpful telephone numbers and links:

WATER AGENCY LIST in Riverside County

City of Banning	(951) 922-3130
City of Beaumont	(951) 769-8520
City of Blythe	(760) 922-6161
City of Coachella	(760) 398-3502
Coachella Valley Water District	(760) 398-2651
City of Corona	(951) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley MWD	(951) 674-3146
Farm Mutual Water Company	(951) 244-4198
City of Hemet	(951) 765-3712
Idyllwild Water District	(951) 659-2143
Jurupa Community Services District	(951) 360-8795
Lake Hemet MWD	(951) 658-3241
Lee Lake Water District	(951) 277-1414
March Air Force Base	(951) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8253
Rancho Caballero	(951) 780-9272
Rancho California Water District	(951) 296-6900
Ripley, CSA #62	(760) 922-4951
City of Riverside	(951) 351-6170
Rubidoux Services District	(951) 684-7580
Silent Valley Club, Inc	(951) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555 or online at
www.rcflood.org

Online resources include:

- Riverside County Flood Control and Water Conservation District **www.rcflood.org**
- California Storm Water Quality Association **www.casqa.org**
- State Water Resources Control Board **www.swrcb.ca.gov/**
- Power Washers of North America **www.thepwna.org**

StormWater Pollution

What you should know for...

OUTDOOR CLEANING ACTIVITIES AND PROFESSIONAL MOBILE SERVICE PROVIDERS



Storm drain pollution prevention information for:

- Car Washing / Mobile Detailers
- Window and Carpet Cleaners
- Power Washers
- Waterproofers / Street Sweepers
- Equipment cleaners or degreasers and all mobile service providers

Do you know where street flows actually go?

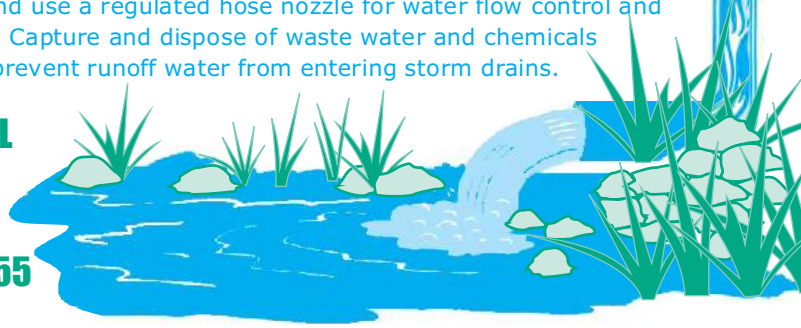
Storm Drains are NOT connected to sanitary sewer systems and treatment plants!



The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Pollutants discharged to storm drains are transported directly into rivers, lakes and streams. Soaps, degreasers, automotive fluids, litter and a host of materials are washed off buildings, sidewalks, plazas and parking areas. Vehicles and equipment must be properly managed to prevent the pollution of local waterways.

Unintentional spills by mobile service operators can flow into storm drains and pollute our waterways. **Avoid mishaps.** *Always* have a **Spill Response Kit** on hand to clean up unintentional spills**.** Only emergency **Mechanical** repairs should be done in City streets and use drip pans for spills. **Plumbing** should be done on private property. Always store chemicals in a leak-proof container and keep covered when not in use. **Window/Power Washing** waste water shouldn't be released into the streets, but should be disposed of in a sanitary sewer, landscaped area or in the soil. Soiled **Carpet Cleaning** wash water should be filtered before being discharged into the sanitary sewer. Dispose of all filter debris properly. **Car Washing/Detailing** operators should wash cars on private property and use a regulated hose nozzle for water flow control and runoff prevention. Capture and dispose of waste water and chemicals properly. Always prevent runoff water from entering storm drains.

REPORT ILLEGAL STORM DRAIN DISPOSAL
1-800-506-2555



Help Protect Our Waterways!

Use These Guidelines For Outdoor Cleaning Activities and Wash Water Disposal

Did you know that disposing of pollutants into the street, gutter, storm drain or nearest body of water is ***PROHIBITED*** by law and can bring about stiff penalties.

Best Management Practices

Waste wash water from Mechanics, Plumbers, Window/Power Washers, Carpet Cleaners, Car Washing and Mobile Detailing activities may contain significant quantities of motor oil, grease, chemicals, dirt, detergents, brake pad dust, litter and other materials.

Best Management Practices, or BMPs as they are known, are guides to prevent pollutants from entering the storm drains. *Each of us* can do our part to keep storm water clean by using the suggested BMPs below:

Simple solutions for both light and heavy duty jobs:

Do...consider dry cleaning methods first such as a mop, broom, rag or wire brush. Always keep a spill response kit on site.

Do...prepare the work area before power cleaning by using sand bags, rubber mats, vacuum booms, containment pads or temporary berms to keep wash water away from the gutters and storm drains.

Do...use vacuums or other machines to remove and collect loose debris or litter before applying water.

Do...obtain the property owner's permission to dispose *small amounts* of power washing waste water to landscaped, gravel or unpaved surfaces.

Do...check with your local sanitary sewer agency's policies on wash water disposal regulations. (See list on reverse side).

Do...be aware that if discharging to landscape areas, soapy wash water may damage landscaping. Residual wash water may remain on paved surfaces to evaporate. Sweep up solid residuals and dispose of properly. Vacuum booms are another option for capturing and collecting wash water.

Do not let...wash or waste water from sidewalk, plaza or building cleaning go into a street or storm drain.



Report illegal storm drain disposal, Call Toll Free

1-800-506-2555

Using Cleaning Agents

Try using biodegradable/phosphate-free products. They are easier on the environment, but don't confuse them for being toxic free. Soapy water entering the storm drain system can impact the delicate aquatic environment.



When cleaning surfaces with a *high-pressure washer* or *steam cleaner*, additional precautions should be taken to prevent the discharge of pollutants into the storm drain system. These two methods of surface cleaning can loosen additional material that can contaminate local waterways.

Think Water Conservation

Minimize water use by using high pressure, low volume nozzles. Be sure to check all hoses for leaks.

Screening Wash Water

A thorough dry cleanup before washing exterior surfaces, such as buildings and decks *without loose paint*, sidewalks, or plaza areas should be sufficient to protect receiving waters. Keep debris from entering the storm drain after cleaning by first passing the wash water first through a "20 mesh" or finer screen to catch the solid materials, then disposing the mesh in a refuse container.

Drain Inlet Protection & Collection of Wash Water

- Prior to any washing, block all storm drains with an impervious barrier such as sandbags or berms, or seal the storm drain with plugs or rubber mats.
- Create a containment area with berms and traps or take advantage of a low spot to keep wash water contained.
- Wash vehicles and equipment on grassy or gravel areas so that the wash water can seep into the ground.
- Pump or vacuum up all wash water in the contained area.

Equipment and Supplies

For special materials, equipment and supplies:

- New Pig — (800) 468-4647
- Lab Safety Supply — (800) 356-0783
- C&H — (800) 558-90966
- W.W. Grainger — (800) 994-9174
- Cleaning Equipment Trade Association — (800) 441-0111

Adopt a pet from your local animal shelter or adoption centers at pet stores. A variety of animals, from purebred to mixed breed are waiting for loving arms and good homes. Consider volunteering at your local animal shelters. Volunteers, donations, food, newspapers, old towels and linens are needed to help the animals.



RIVERSIDE COUNTY ANIMAL SHELTER LOCATIONS:

BLYTHE
16450 West Hobson Way
Blythe, CA 92225
760-921-7857

HEMET
800 South Sanderson
Hemet, CA 92545
909 925-8025

INDIO
45-355 Van Buren
Indio, CA 92201
760-347-2319

RIVERSIDE
5950 Wilderness Avenue
Riverside, CA 92504
909-358-7387

FOR ALL OTHER AREAS
CALL 1-888-636-7387

Riverside County gratefully acknowledges the City of Los Angeles Stormwater Program for the design concept of this brochure.

What's the Scoop?



TIPS FOR A HEALTHY PET AND A HEALTHIER ENVIRONMENT

CREATE A HEALTHY ENVIRONMENT in and around your home by following these simple pet practices. Your pet, family and neighbors will appreciate their clean comfortable surroundings.

HOUSEHOLD PETS

We all love our pets, but pet waste is a subject everyone likes to avoid. Pet waste left on trails, sidewalks, streets, and grassy areas is immediately flushed into the nearest waterway when it rains. Even if you can't see water near you, the rain or waste water WASHES all that PET WASTE and BACTERIA INTO THE STORMDRAIN, where it travels to your neighborhood creek or lake untreated. These animal droppings also contain nutrients that can promote the growth of algae, if they enter our streams and lakes. The risk of STORMWATER CONTAMINATION INCREASES, if pet wastes is allowed to accumulate in animal pen areas or left on sidewalks, streets, or driveways where runoff can carry them to storm sewers.

Some of the DISEASES THAT CAN SPREAD from pet waste are:
Campylobacteriosis — a bacterial infection that causes diarrhea in humans.
Salmonellosis — the most common bacterial infection transmitted to humans from animals.
Toxocarisis — roundworms transmitted from animals to humans.

Flies and other pest insects can also increase when pet waste is disposed of improperly, becoming a nuisance and adding yet another vector for disease transmission.

WHAT CAN YOU DO?

- SCOOP up pet waste and flush it down the toilet.
- NEVER DUMP pet waste into a storm drain or catch basin.
- USE the complimentary BAGS or mutt mitts offered in dispensers at local parks.
- CARRY EXTRA BAGS when walking your dog and make them available to other pet owners who are without.
- TEACH CHILDREN how to properly clean up after a pet.
- TELL FRIENDS AND NEIGHBORS about the ill effects of animal waste on the environment. Encourage them to clean up after pets.

Did You Know ...
that Californians illegally dump about 80 million gallons of motor oil each year?

Many communities have "Scoop the Poop" laws that govern pet waste cleanup. Some of these laws specifically require anyone who walks an animal off of their property to carry a bag, shovel, or scooper. Any waste left by the animal must be cleaned up immediately. CALL YOUR LOCAL CODE ENFORCEMENT OFFICER to find out more about pet waste regulations.

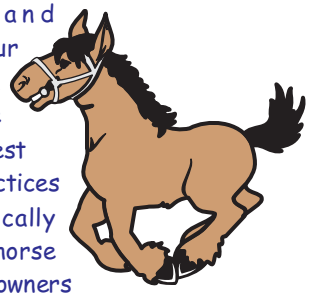


Pets are only one of the many fixtures of suburban America that add to water pollution. Lawn fertilizers, rinse water from driveways and motor oil commonly end up in streams and lakes. **CALL 1-800-506-2555 FOR HOUSEHOLD HAZARDOUS WASTE COLLECTION LOCATION AND DATES.** Maintain your automobile to avoid leaks. Dispose of used vehicle fluids properly. Your pets can be poisoned if they ingest gas, oil or antifreeze that drips onto the pavement or is stored in open containers.

NEVER HOSE VEHICLE FLUIDS into the street or gutter. USE ABSORBENT MATERIALS such as cat litter to clean-up spills. SWEEP UP used absorbent materials and place in the trash.

HORSES AND LIVESTOCK

Fortunate enough to own a horse or livestock? You, too, can play a part in protecting and cleaning up our water resources. The following are a few simple Best Management Practices (BMPs) specifically designed for horse owners and landowners with horses.



- STORE your manure properly. Do not store unprotected piles of manure in places where runoff may enter streams, or flood waters may wash the manure away. Place a cover or tarp over the pile to keep rainwater out.
- CHECK with your local conservation district to design manure storage facilities to protect water quality. These structures usually consist of a concrete pad to protect ground water and a short wall on one or two sides to make manure handling easier.
- TRY composting – A vegetative cover placed around buildings or on steeper slopes can help minimize erosion and absorb nutrients while improving the appearance of your property. In addition, avoid costlier erosion controls, vegetative covers will provide animals with better traction during wet or icy conditions.



- KEEP animals out of steams – Designed stream crossings provide a safe, easy way for horses and livestock to ford streams. Fencing encourages the use of the crossing instead of the streambed to navigate streams. This will allow vegetation to stabilize stream banks and reduce sediment pollution.
- MOW pastures to proper height, six inches is typically recommended.
- Material STORAGE SAFETY TIPS – Many of the chemicals found in barns require careful handling and proper disposal. When using these chemicals, be certain to follow these common sense guidelines:
  - Buy only what you need.
  - Treat spills of hoof oils like fuel spill. Use kitty litter to soak up the oil and dispose in a tightly sealed plastic bag.
  - Store pesticides in a locked, dry, well-ventilated area.
  - Protect stored fertilizer and pesticides from rain and surface water.

Call 1-800-506-2555 to locate your local conservation district to find out what to do with your current backyard manure pile, how to re-establish a healthy pasture, what to do about weeds, and what grasses grow best in your soils.

Thank you for doing your part to protect your watershed, the environment, and the equestrian way of life in your community!



Helpful telephone numbers and links:

RIVERSIDE COUNTY WATER AGENCIES:

City of Banning	(951) 922-3130
City of Beaumont	(951) 769-8520
City of Blythe	(760) 922-6161
City of Coachella	(760) 398-3502
Coachella Valley Water District	(760) 398-2651
City of Corona	(951) 736-2259
Desert Center, CSA #51	(760) 227-3203
Eastern Municipal Water District	(951) 928-3777
Elsinore Valley MWD	(951) 674-3146
Farm Mutual Water Company	(951) 244-4196
City of Hemet	(951) 765-3712
Idyllwild Water District	(951) 659-2143
Jurupa Community Services District	(951) 360-8795
Lake Hemet MWD	(951) 658-3241
Lee Lake Water District	(951) 277-1414
March Air Force Base	(951) 656-7000
Mission Springs Water District	(760) 329-6448
City of Palm Springs	(760) 323-8253
Rancho Cahallero	(951) 780-9272
Rancho California Water District	(951) 296-6900
Ripley, CSA #62	(760) 922-4951
City of Riverside	(951) 351-6170
Ruhidoux Community Services District	(951) 684-7580
Silent Valley Club, Inc	(951) 849-4501
Valley Sanitary District	(760) 347-2356
Western Municipal Water District	(951) 789-5000
Yucaipa Valley Water District	(909) 797-5117

CALL 1-800-506-2555 to:

- Report clogged storm drains or illegal storm drain disposal from residential, industrial, construction and commercial sites into public streets, storm drains and/or water bodies.
- Find out about our various storm drain pollution prevention materials.
- Locate the dates and times of Household Hazardous Waste (HHW) Collection Event.
- Request adult, neighborhood, or classroom presentations.
- Locate other County environmental services.
- Receive grasscycling information and composting workshop information.

Or visit our (Riverside County Flood Control District website at:
www.floodcontrol.co.riverside.ca.us

Other links to additional storm drain pollution information:

- County of Riverside Environmental Health:
  www.rivcoeh.org
- California State Water Resource Conservation Board:
  www.swrcb.ca.gov/stormwtr/links.html
- California Water Quality Task Force:
  www.cabmphandbooks.com/
- United State Environmental Protection Agency (EPA):
  www.epa.gov/opptintr/p2home/programs/busprc.htm
  (compliance assistance information)

Riverside County Only Rain in the Storm Drain Pollution Protection Program gratefully acknowledges the Bay Area Stormwater Management Agencies Association and the Cleaning Equipment Trade Association for information provided in this brochure.

StormWater Pollution

What you should know for...



Swimming Pool, Jacuzzi and Fountain Maintenance

Do you know . . . where the water actually goes?



Storm Drains are not connected to sanitary sewer systems and treatment plants!

The primary purpose of storm drains is to carry rain water away from developed areas to prevent flooding. Untreated storm water and the pollutants it carries flow directly into rivers, lakes, and streams. Wastewater from residential swimming pools, jacuzzis, fishponds, and fountains often contain chemicals used for sanitizing or cleansing purposes. Toxic chemicals (such as chlorine or copper-based algaecides) can damage the environment when wastewater is allowed to flow into our local rivers, lakes, and streams by way of the storm drain system. Each of us can do our part to help clean our water, and that adds up to a pollution solution.

The Cities and County of Riverside have adopted ordinances for storm drain pollution management to maintain discharge control and prevent illegal storm drain discharge. In accordance with state and federal law, these local storm water ordinances prohibit the discharge of pollutants into the storm drain system or local surface waters. The Only Rain in the Storm Drain Pollution Program informs residents and businesses of storm drain pollution prevention activities such as those described in this brochure.



PLEASE NOTE: The discharge of pollutants into the street, gutters, storm drain system, or waterways – without a Regional Water Quality Control board permit or waiver – is strictly prohibited by local ordinances and state and federal law.

Do Your Part to Protect Our Waterways!

Use These Guidelines For Proper Draining of Your Swimming Pool, Jacuzzi and Fountain Water

Discharge Regulations



Requirements for pool draining may differ from city to city. Check with your water agency to see if disposal to the sanitary sewer line is allowed for pool discharges (see reverse side for Riverside County water purveyors).

If sewer discharge is allowed, a hose can be run from your swimming pool pump to the washing machine drain or a sink or bathtub. If sewer discharge is not allowed, or if your house is served by a septic tank, review the options presented below.

Discharge Options

If your local sewer agency will not accept pool water into their system, or if you are on a septic tank system, follow these guidelines:

1. Reduce or eliminate solids (e.g., debris, leaves or dirt) in the pool water.
2. Allow the chemicals in the pool water to dissipate. This could take up to seven (7) days depending on the time of year. Create a co-op; let your neighbor share your pool while theirs is being prepared for draining, then use their pool while yours is being drained. Chlorinated water should not be discharged into the storm drain or surface waters. This includes large pools such as community swimming pools or spas.
3. When the pool water is free of all chemicals (verify by a home pool water test kit) drain pool water to landscaped areas, lawns, yards, or any areas that will absorb the water.
4. You may have to drain the pool water over a period of a few days to allow the landscape areas to absorb most of the water.
5. Control the flow of the draining pool water to prevent soil erosion. Do not allow sediment to enter the street, gutter or storm drain.
6. Avoid discharging pool water into the street and storm drain system. Water runoff that enters the street can pick up motor oil, pet waste, trash and other pollutants, eventually carrying them into the storm drain system and local surface waters.

Refinishing Pool Surfaces

If you are resurfacing your pool, or resurfacing the pool patio area, be sure to hose down mixers, tools and trailers in a dirt area where rinse water won't flow into the street, gutter or storm drain. Local storm water ordinances strictly prohibit the discharge of pollutants into the storm drain system.

Residues from acid washing and similar activities require special handling. Never discharge low or high pH wastewater into the street, gutter or storm drain.



Cleaning Filters

Discharge of pool filter rinse water and backflush to a stream, ditch, or storm drain is prohibited. Backflush from pool filters must be discharged to the sanitary sewer, on-site septic tank and drainfield system (if properly designed and adequately sized), or a seepage pit. Alternatively, pool filter rinse water and backwash may be diverted to dirt or landscaped areas. Filter media and other solids should be picked up and disposed of in the trash.

Algaecides



Avoid using copper-based algaecides unless absolutely necessary. Control algae with chlorine, organic polymers or other alternatives to copper-based pool chemicals. Copper is a heavy metal that can be toxic to aquatic life.

Chemical Storage and Handling



- Use only the amount indicated on product labels.
- Store chlorine and other chemicals in a covered area to prevent runoff. Keep out of reach of children and pets.
- Chlorine kits, available at retail swimming pool equipment and supply stores, should be used to monitor the chlorine and pH levels.
- Chlorine and other pool chemicals should never be allowed to flow into the gutter or the storm drain system.

Proper Disposal of Pool Chemicals

If you need to dispose of unwanted pool chemicals, first try giving them to a neighbor with a pool. If that doesn't work, bring unwanted pool chemicals to a Household Hazardous Waste (HHW) Collection Event. There's no cost for bringing HHW items to collection events - it's FREE! Call **1-800-506-2555** for a schedule of HHW events in your community.

NEVER put unused chemicals into the trash, onto the ground or down a storm drain.

Site Design & Landscape Planning SD-10



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.

- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.

- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.

- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.

- Promote natural vegetation by using parking lot islands and other landscaped areas.

- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.

- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

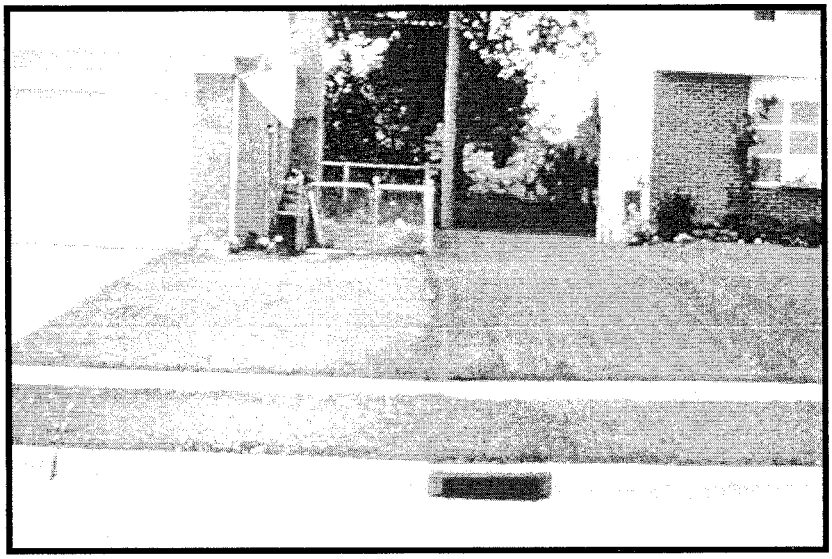
Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Efficient Irrigation SD-12



Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

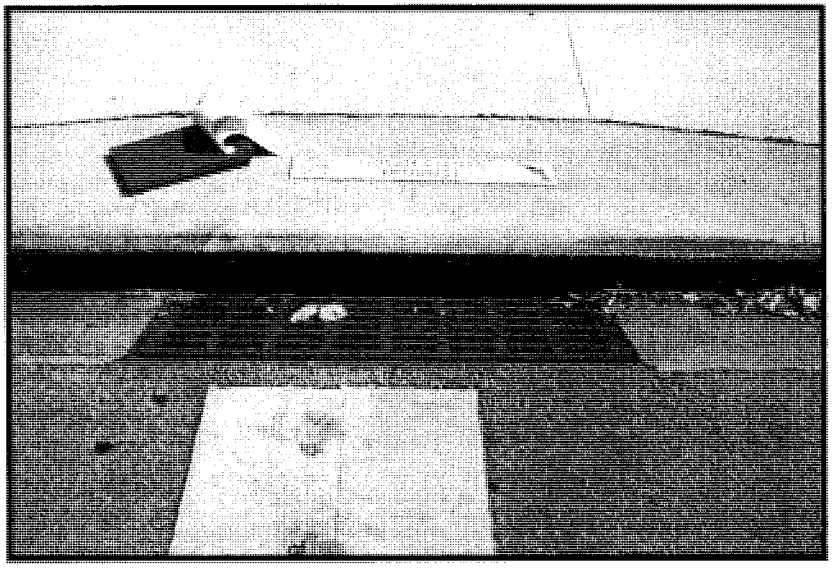
A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13



Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

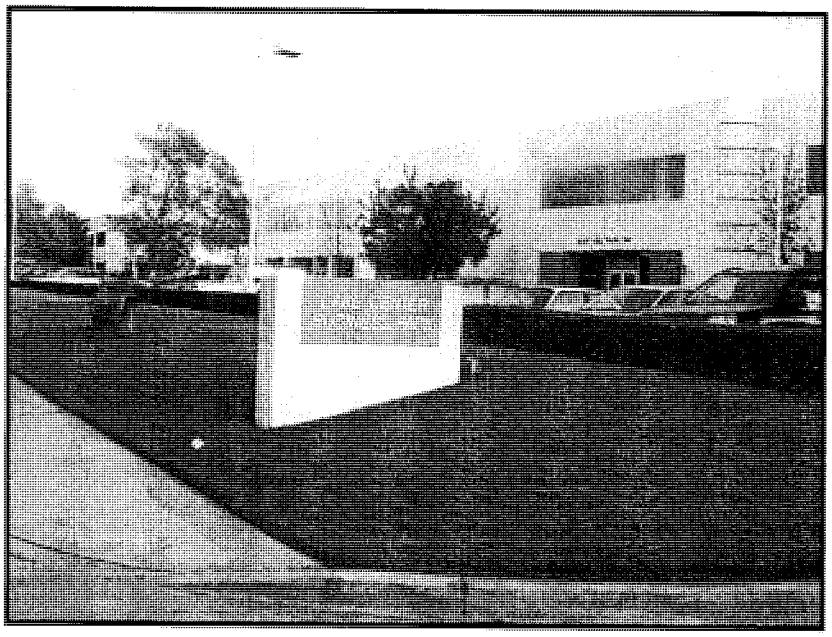
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Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Building & Grounds Maintenance SC-41



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

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- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

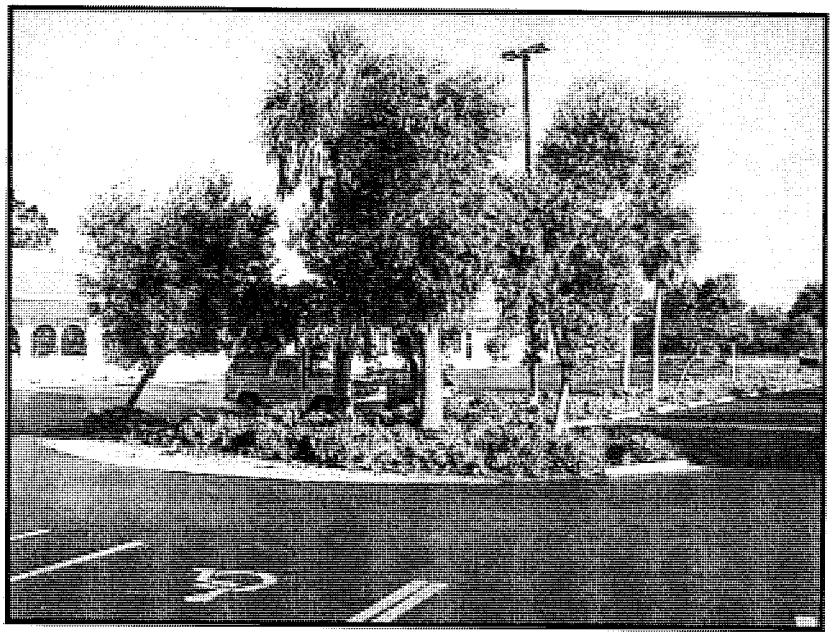
Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)

- Keep accurate maintenance logs to evaluate BMP implementation.

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Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

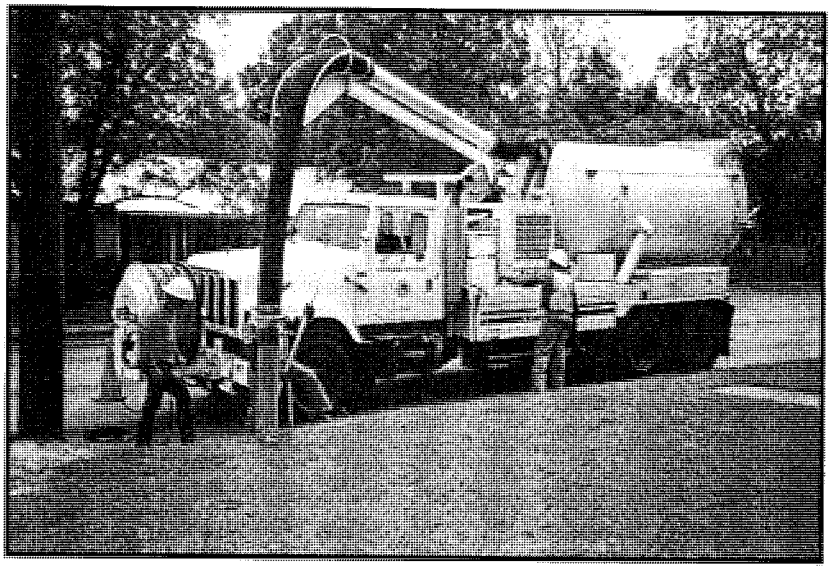
Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44



Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

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- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).

- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:

  - Purchase and installation of signs.
  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

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Non-Stormwater Discharges SC-10

Description

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain if local regulations allow. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include: potable water sources, fire hydrant flushing, air conditioner condensate, landscape irrigation drainage and landscape watering, emergency firefighting, etc. as discussed in Section 2.

However there are certain non-stormwater discharges that pose an environmental concern. These discharges may originate from illegal dumping of industrial material or wastes and illegal connections such as internal floor drains, appliances, industrial processes, sinks, and toilets that are illegally connected to the nearby storm drainage system through on-site drainage and piping. These unauthorized discharges (examples of which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains.

Non-stormwater discharges will need to be addressed through a combination of detection and elimination. The ultimate goal is to effectively eliminate unauthorized non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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pollutants on streets and into the storm drain system and downstream water bodies.

Approach

Initially the Discharger must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is the elimination of unauthorized non-stormwater discharges. See other BMP Fact Sheets for activity-specific pollution prevention procedures.

General Pollution Prevention Protocols

- Implement waste management controls described in SC-34 Waste Handling and Disposal.

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" or similar stenciled or demarcated next to them to warn against ignorant or unintentional dumping of pollutants into the storm drainage system.

- Manage and control sources of water such as hose bibs, faucets, wash racks, irrigation heads, etc. Identify hoses and faucets in the SWPPP, and post signage for appropriate use.

Non-Stormwater Discharge Investigation Protocols

Identifying the sources of non-stormwater discharges requires the Discharger to conduct an investigation of the facility at regular intervals. There are several categories of non-stormwater discharges:

- Visible, easily identifiable discharges, typically generated as surface runoff, such as uncontained surface runoff from vehicle or equipment washing; and

- Non-visible, (e.g., subsurface) discharges into the site drainage system through a variety of pathways that are not obvious.

The approach to detecting and eliminating non-stormwater discharges will vary considerably, as discussed below:

Visible and identifiable discharges

- Conduct routine inspections of the facilities and of each major activity area and identify visible evidence of unauthorized non-stormwater discharges. This may include:

  - ✓ Visual observations of actual discharges occurring;

- ✓ Evidence of surface staining, discoloring etc. that indicates that discharges have occurred;
- ✓ Pools of water in low lying areas when a rain event has not occurred; and
- ✓ Discussions with operations personnel to understand practices that may lead to unauthorized discharges.

- ☐ If evidence of non-stormwater discharges is discovered:
  - ✓ Document the location and circumstances using Worksheets 5 and 6 (Section 2 of the manual), including digital photos;
  - ✓ Identify and implement any quick remedy or corrective action (e.g., moving uncovered containers inside or to a proper location); and
  - ✓ Develop a plan to eliminate the discharge. Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge.
- ☐ Consult the appropriate activity-specific BMP Fact Sheet for alternative approaches to manage and eliminate the discharge. Make sure the facility SWPPP is up-to-date and includes applicable BMPs to address the non-stormwater discharge.

Other Illegal Discharges (Non visible)

Illicit Connections

- ☐ Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- ☐ Isolate problem areas and plug illicit discharge points.
- ☐ Locate and evaluate discharges to the storm drain system.
- ☐ Visual Inspection and Inventory:
  - ✓ Inventory and inspect each discharge point during dry weather.
  - ✓ Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system.
  - ✓ Non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- ☐ A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.

- Inspect the path of loading/unloading area drain inlets and floor drains in older buildings.

- Never assume storm drains are connected to the sanitary sewer system.

Monitoring for investigation/detection of illegal discharges

- If a suspected illegal or unknown discharge is detected, monitoring of the discharge may help identify the content and/or suggest the source. This may be done with a field screening analysis, flow meter measurements, or by collecting a sample for laboratory analysis. Section 5 and Appendix D describe the necessary field equipment and procedures for field investigations.

- Investigative monitoring may be conducted over time. For example if, a discharge is intermittent, then monitoring might be conducted to determine the timing of the discharge to determine the source.

- Investigative monitoring may be conducted over a spatial area. For example, if a discharge is observed in a pipe, then monitoring might be conducted at accessible upstream locations in order to pinpoint the source of the discharge.

- Generally, investigative monitoring requiring collection of samples and submittal for lab analysis requires proper planning and specially trained staff.

Smoke Testing

Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two piping systems. Smoke testing is generally performed at a downstream location and the smoke is forced upstream using blowers to create positive pressure. The advantage to smoke testing is that it can potentially identify multiple potential discharge sources at once.

- Smoke testing uses a harmless, non-toxic smoke cartridges developed specifically for this purpose.

- Smoke testing requires specialized equipment (e.g., cartridges, blowers) and is generally only appropriate for specially trained staff.

- A Standard Operating Procedure (SOP) for smoke testing is highly desirable. The SOP should address the following elements:

  - ✓ Proper planning and notification of nearby residents and emergency services is necessary since introducing smoke into the system may result in false alarms;

  - ✓ During dry weather, the stormwater collection system is filled with smoke and then traced back to sources;

- ✓ Temporary isolation of segments of pipe using sand bags is often needed to force the smoke into leaking pipes; and
- ✓ The appearance of smoke in a waste vent pipe, at a sewer manhole, or even the base of a toilet indicates that there may be a connection between the sanitary and storm water systems.

- Most municipal wastewater agencies will have necessary staff and equipment to conduct smoke testing and they should be contacted if cross connections with the sanitary sewer are suspected. See SC-44 Drainage System Maintenance for more information.

Dye Testing

- Dye testing is typically performed when there is a suspected specific pollutant source and location (i.e., leaking sanitary sewer) and there is evidence of dry weather flows in the stormwater collection system.
- Dye is released at a probable upstream source location, either the facility's sanitary or process wastewater system. The dye must be released with a sufficient volume of water to flush the system.
- Operators then visually examine the downstream discharge points from the stormwater collection system for the presence of the dye.
- Dye testing can be performed informally using commercially available products in order to conduct an initial investigation for fairly obvious cross-connections.
- More detailed dye testing should be performed by properly trained staff and follow SOPs. Specialized equipment such as fluorometers may be necessary to detect low concentrations of dye.
- Most municipal wastewater agencies will have necessary staff and equipment to conduct dye testing and they should be contacted if cross connections with the sanitary sewer are suspected.

TV Inspection of Drainage System

- Closed Circuit Television (CCTV) can be employed to visually identify illicit connections to the industrial storm drainage system. Two types of CCTV systems are available: (1) a small specially designed camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping, or (2) a larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe.
- CCTV systems often include a high-pressure water jet and camera on a flexible cable. The water jet cleans debris and biofilm off the inside of pipes so the camera can take video images of the pipe condition.

- CCTV units can detect large cracks and other defects such as offsets in pipe ends caused by root intrusions or shifting substrate.
- CCTV can also be used to detect dye introduced into the sanitary sewer.
- CCTV inspections require specialized equipment and properly trained staff and are generally best left to specialized contractors or municipal public works staff.

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks may include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. These wastes can cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Illegal dumping hot spots;
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ An anonymous tip/reporting mechanism; and
  - ✓ Evidence of responsible parties (e.g., tagging, encampments, etc.).
- One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.



Spill and Leak Prevention and Response

- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.
- See SC-11 Spill Prevention Control and Cleanup.



Employee Training Program

- Training of technical staff in identifying and documenting illegal dumping incidents is required. The frequency of training must be presented in the SWPPP, and depends on site-specific industrial materials and activities.
- Consider posting a quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.
- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan. Employees should be able to identify work/jobs with high potential for spills and suggest methods to reduce possibility.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.

- Conduct spill response drills annually (if no events occurred) in order to evaluate the effectiveness of the plan.
- When a responsible party is identified, educate the party on the impacts of his or her actions.



Quality Assurance and Record Keeping

Performance Evaluation

- Annually review internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.
- Develop document and data management procedures.
- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Annually document and report the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.
- Document training activities.

Potential Limitations and Work-Arounds

Some facilities may have space constraints, limited staffing and time limitations that may preclude implementation of BMPs. Provided below are typical limitations and recommended "work-arounds."

- Many facilities do not have accurate, up-to-date 'as-built' plans or drawings which may be necessary in order to conduct non-stormwater discharge assessments.
  - ✓ Online tools such as Google Earth™ can provide an aerial view of the facility and may be useful in understanding drainage patterns and potential sources of non-stormwater discharges
  - ✓ Local municipal jurisdictions may have useful drainage systems maps.

- Video surveillance cameras are commonly used to secure the perimeter of industrial facilities against break-ins and theft. These surveillance systems may also be useful for capturing illegal dumping activities. Minor, temporary adjustments to the field of view of existing surveillance camera systems to target known or suspected problem areas may be a cost-effective way of capturing illegal dumping activities and identifying the perpetrators.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital facility cost requirements may be minimal unless cross-connections to storm drains are detected.
- Indoor floor drains may require re-plumbing if cross-connections are detected.
- Leaky sanitary sewers will require repair or replacement which can have significant costs depending on the size and industrial activity at the facility.

Maintenance (including administrative and staffing)

- The primary effort is for staff time and depends on how aggressively a program is implemented.
- Costs for containment, and disposal of any leak or discharge is borne by the Discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Permit Requirements

The IGP authorizes certain Non-Storm Water Discharges (NSWDs) provided BMPs are included in the SWPPP and implemented to:

- Reduce or prevent the contact of authorized NSWDs with materials or equipment that are potential sources of pollutants;
- Reduce, to the extent practicable, the flow or volume of authorized NSWDs;
- Ensure that authorized NSWDs do not contain quantities of pollutants that cause or contribute to an exceedance of a water quality standards (WQS); and,

- Reduce or prevent discharges of pollutants in authorized NSWDs in a manner that reflects best industry practice considering technological availability and economic practicability and achievability."

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Spill Prevention, Control & Cleanup SC-11

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental spills. Preparation for accidental spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify hazardous material storage areas, specify material handling procedures, describe spill response procedures, and provide locations of spill clean-up equipment and materials. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills. An adequate supply of spill clean-up materials must be maintained onsite.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	
Preventative Maintenance	
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

Approach

General Pollution Prevention Protocols

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems.
- ☐ Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- ☐ Establish procedures and/or controls to minimize spills and leaks. The procedures should address:
  - ✓ Description of the facility, owner and address, activities, chemicals, and quantities present;

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- ✓ Facility map of the locations of industrial materials;
- ✓ Notification and evacuation procedures;
- ✓ Cleanup instructions;
- ✓ Identification of responsible departments; and
- ✓ Identify key spill response personnel.

- ☐ Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.



Spill and Leak Prevention and Response

Spill Prevention

- ☐ Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- ☐ If illegal dumping is observed at the facility:
  - ✓ Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - ✓ Landscaping and beautification efforts may also discourage illegal dumping.
  - ✓ Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- ☐ Store and contain liquid materials in such a manner that if the container is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- ☐ If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.



Preventative Maintenance

- ☐ Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.

- ☐ Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.

- ☐ Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain.*

- ☐ Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- ☐ Label all containers according to their contents (e.g., solvent, gasoline).

- ☐ Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).

- ☐ Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).

- ☐ Identify key spill response personnel.

Spill Response

- ☐ Clean up leaks and spills immediately.

- ☐ Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).

- ☐ On paved surfaces, clean up spills with as little water as possible.

  - ✓ Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills.

  - ✓ If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

  - ✓ If possible use physical methods for the cleanup of dry chemicals (e.g., brooms, shovels, sweepers, or vacuums).

- ☐ Never hose down or bury dry material spills. Sweep up the material and dispose of properly.

- ☐ Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.

- ☐ For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board or local authority as location regulations dictate.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to 911 for dispatch and clean-up assistance when needed. Do not contact fire agencies directly.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - ✓ Types and quantities (in some cases) of wastes;
  - ✓ Patterns in time of occurrence (time of day/night, month, or year);
  - ✓ Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills);
  - ✓ Clean-up procedures; and
  - ✓ Responsible parties.



Employee Training Program

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
  - ✓ The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur; and
  - ✓ Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- Develop spill prevention and control plan, provide and document training, conduct inspections of material storage areas, and supply spill kits.
- Extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident;
- Weather conditions;
- Duration of the spill/leak/discharge;

- Cause of the spill/leak/discharge;
- Response procedures implemented;
- Persons notified; and
- Environmental problems associated with the spill/leak/discharge.

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- Date and time the inspection was performed;
- Name of the inspector;
- Items inspected;
- Problems noted;
- Corrective action required; and
- Date corrective action was taken.

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems;
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves);
- External corrosion and structural failure;
- Spills and overfills due to operator error; and
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa.

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanges, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.
- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.

- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use absorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:

  Cover fueling area if possible.

  Use a perimeter drain or slope pavement inward with drainage to a sump.

  Pave fueling area with concrete rather than asphalt.

- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use absorbent materials on small spills and general cleaning rather than hosing down the area. Remove the absorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities.

The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department).
- Develop procedures to prevent/mitigate spills to storm drain systems.
- Identify responsible departments.

- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.
- Address spills at municipal facilities, as well as public areas.
- Provide training concerning spill prevention, response and cleanup to all appropriate personnel.

References and Resources

California's Nonpoint Source Program Plan. http://www.swrcb.ca.gov/nps/index.html.

Clark County Storm Water Pollution Control Manual. Available online at: http://www.co.clark.wa.us/pubworks/bmpman.pdf.

King County Storm Water Pollution Control Manual. Available online at: http://dnr.metrokc.gov/wlr/dss/spcm.htm.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp.org.

The Stormwater Managers Resource Center. http://www.stormwatercenter.net/.

Waste Handling & Disposal SC-34

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

General Pollution Prevention Protocols

- ☐ Accomplish reduction in the amount of waste generated using the following source controls:
  - ✓ Production planning and sequencing;
  - ✓ Process or equipment modification;
  - ✓ Raw material substitution or elimination;
  - ✓ Loss prevention and housekeeping;
  - ✓ Waste segregation and separation; and
  - ✓ Close loop recycling.
- ☐ Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- ☐ Recycle materials whenever possible.

Objectives
■ *Cover*
■ *Contain*
■ *Educate*
■ *Reduce/Minimize*
■ *Product Substitution*

Targeted Constituents	
Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Minimum BMPs Covered	
Good Housekeeping	✓
Preventative Maintenance	✓
Spill and Leak Prevention and Response	✓
Material Handling & Waste Management	✓
Erosion and Sediment Controls	
Employee Training Program	✓
Quality Assurance Record Keeping	✓

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CALIFORNIA STORMWATER QUALITY ASSOCIATION®

- Use the entire product before disposing of the container.
- To the extent possible, store wastes under cover or indoors after ensuring all safety concerns such as fire hazard and ventilation are addressed.
- Provide containers for each waste stream at each work station. Allow time after shift to clean area.



Good Housekeeping

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain. Clean in a designated wash area that drains to a clarifier.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- If possible, move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.



Preventative Maintenance

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.

- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, vacuuming, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.



Spill Response and Prevention Procedures

- Keep your spill prevention and plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - ✓ Vehicles equipped with baffles for liquid waste; and
  - ✓ Trucks with sealed gates and spill guards for solid waste.



Material Handling and Waste Management

Litter Control

- Post “No Littering” signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.

- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal. Affix labels to all waste containers.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.



Employee Training Program

- Educate employees about pollution prevention measures and goals.
- Train employees how to properly handle and dispose of waste using the source control BMPs described above.
- Train employees and subcontractors in proper hazardous waste management.
- Use a training log or similar method to document training.
- Ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.



Quality Assurance and Record Keeping

- Keep accurate maintenance logs that document minimum BMP activities performed for waste handling and disposal, types and quantities of waste disposed of, and any improvement actions.
- Keep accurate logs of spill response actions that document what was spilled, how it was cleaned up, and how the waste was disposed.

- Establish procedures to complete logs and file them in the central office.

Potential Capital Facility Costs and Operation & Maintenance Requirements

Facilities

- Capital costs will vary substantially depending on the size of the facility and the types of waste handled. Significant capital costs may be associated with reducing wastes by modifying processes or implementing closed-loop recycling.
- Many facilities will already have indoor covered areas where waste materials will be stored and will require no additional capital expenditures for providing cover.
- If outdoor storage of wastes is required, construction of berms or other means to prevent stormwater run-on and runoff may require appropriate constructed systems for containment.
- Capital investments will likely be required at some sites if adequate cover and containment facilities do not exist and can vary significantly depending upon site conditions.

Maintenance

- Check waste containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the waste management area regularly. Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.
- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

References and Resources

Minnesota Pollution Control Agency, *Industrial Stormwater Best Management Practices Guidebook*. Available online at: http://www.pca.state.mn.us/index.php/view-document.html?gid=10557.

New Jersey Department of Environmental Protection, 2013. *Basic Industrial Stormwater General Permit Guidance Document NJPDES General Permit No NJ0088315,* Revised. Available online at: http://www.nj.gov/dep/dwq/pdf/5G2_guidance_color.pdf.

Orange County Stormwater Program, Best Management Practices for Industrial/Commercial Business Activities. Available online at: http://ocwatersheds.com/documents/bmp/industrialcommercialbusinessesactivities

Oregon Department of Environmental Quality, 2013. *Industrial Stormwater Best Management Practices Manual- BMP 26 Fueling and Liquid Loading/Unloading Operations*. Available online at: http://www.deq.state.or.us/wq/wqpermit/docs/IndBMP021413.pdf.

Sacramento Stormwater Management Program. *Best Management Practices for Industrial Storm Water Pollution Control*. Available online at: http://www.msa.saccounty.net/sactostormwater/documents/guides/industrial-BMP-manual.pdf.

Sacramento County Environmental Management Stormwater Program: Best Management Practices. Available online at: http://www.emd.saccounty.net/EnvHealth/Stormwater/Stormwater-BMPs.html.

Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com/

US EPA. National Pollutant Discharge Elimination System – Industrial Fact Sheet Series for Activities Covered by EPA's Multi Sector General Permit. Available online at: http://cfpub.epa.gov/npdes/stormwater/swsectors.cfm.

Appendix E

Soils Report

Sladden Engineering

45090 Golf Center Parkway, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite C, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
www.Sladdenengineering.com

December 7, 2022

Project No. 544-22493
22-12-717

Evangelos Pistiolis
40-315 Cholla Lane
Rancho Mirage, California 92270

Project: Proposed Residential Subdivision
APN's 689-130-005, 014,017,018
APN's 689-090-003 & 689-140-022
Peterson Road
Rancho Mirage, California

Subject: Geotechnical Update

Ref: Geotechnical Investigation report prepared by Sladden Engineering dated October 19, 2010; Project No. 544-10159, Report No. 10-10-237

In accordance with your request, we have reviewed the above referenced Geotechnical Investigation report as it relates to the design and construction of the residential subdivision proposed for the approximately 20-acre site (identified as APN's 689-130-005, 014,017,018, 689-090-003 & 689-140-022) located on Peterson Road in the City of Rancho Mirage, California. It is our understanding that the proposed residential structures will be of relatively lightweight wood-frame or light gauge steel-frame construction and will be supported by conventional shallow spread footings and concrete slabs on grade.

The referenced report includes recommendations pertaining to the construction of residential structure foundations. Based upon our review of the referenced report, our previous experience of the project site and our understanding of the proposed construction, it is our opinion that the structural values and remedial grading recommendations included in this report remain applicable for the design and construction of the residential subdivision development.

The proposed residential buildings may be supported upon conventional shallow spread footings. Conventional shallow spread footings should be bottomed into properly compacted engineered fill material a minimum of 12 inches below lowest adjacent grade. Continuous footings should be at least 12 inches wide and isolated pad footings should be at least 2 feet wide. Continuous footings and isolated pad footings should be designed utilizing allowable bearing pressures of 1800 psf and 2000 psf, respectively. Allowable increases of 250 psf for each additional 1 foot of width and 250 psf for each additional 6 inches of depth may be utilized, if desired. The maximum allowable bearing pressure should be 2500 psf. The recommended allowable bearing pressures may be increased by one-third for wind and seismic loading.

Static settlement resulting from the anticipated foundation loads should be tolerable provided that the recommendations included in this report are considered in foundation design and construction. The ultimate static settlement is expected to be less than 1.0 inch when using the recommended allowable foundation bearing pressures. As a practical matter, differential static settlement between footings can be assumed as one-half of the total static settlement.

Lateral forces may be resisted by friction along the base of the foundations and passive resistance along the sides of the footings. A friction coefficient of 0.45 times the normal dead load forces is recommended for use in design. Passive resistance may be estimated using an equivalent fluid weight of 300 pcf. If used in combination with the passive resistance, the frictional resistance should be reduced by one third.

The bearing soil is non-expansive and falls within the "very low" expansion category in accordance with 2019 California Building Code (CBC) classification criteria. Slab thickness and reinforcement should be determined by the structural engineer. We recommend a minimum floor slab thickness of 4.0 inches and minimum reinforcement of #3 bars at 24 inches on center in both directions. All slab reinforcement should be supported on concrete chairs to ensure that reinforcement is placed at slab mid-height.

Slabs with moisture sensitive surfaces should be underlain with a moisture vapor retarder consisting of a polyvinyl chloride membrane such as 10-mil Visqueen, or equivalent. All laps within the membrane should be sealed and at least 2 inches of clean sand should be placed over the membrane to promote uniform curing of the concrete. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface cannot be achieved by grading, consideration should be given to placing a 1-inch thick leveling course of sand across the pad surface prior to placement of the membrane.

Minor retaining walls may be necessary to accomplish the proposed construction. Lateral pressures for use in retaining wall design may be estimated using an equivalent fluid weight of 35 pcf for level drained native backfill conditions. For walls that are to be restrained at the top, the equivalent fluid weight should be increased to 55 pcf for level drained native backfill conditions. Back drains should be provided for the full height of the walls. Seismic pressures should be incorporated into any retaining walls greater than 6 feet in height. Seismic deign pressures may be provided once specific wall heights and locations are known.

The seismic design category for a structure may be determined in accordance with Section 1613 of the 2019 CBC or ASCE7-16. According to the 2019 CBC, Site Class D may be used to estimate design seismic loading for the proposed structures. The 2019 CBC Site Specific Seismic Hazard Analyses are attached. The project Structural Engineer should verify that all design parameters provided are applicable for the subject project.

In order to provide for firm and uniform foundation bearing conditions, the primary foundation bearing soil should be over-excavated and recompacted. Over-excavation should extend to a minimum depth of 5 feet below existing grade or 5 feet below the bottom of the footings, whichever is deeper. Once adequate removals have been verified, the exposed native soil should be moisture conditioned to near optimum moisture content and compacted to at least 90 percent relative compaction. The previously removed material may then be placed in thin lifts at near optimum moisture content and compacted to at least 90 percent relative compaction compacted engineered fill. Removals should extend at least 5 feet laterally beyond the footing limits.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this letter or the referenced report, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING

Brett L. Anderson
Principal Engineer

SER/cg

REGISTERED PROFESSIONAL ENGINEER
BRETT L. ANDERSON
No. C 75389
CIVIL ENGINEERING
STATE OF CALIFORNIA

Matthew J. Cohrt
Principal Geologist

CERTIFIED ENGINEERING GEOLOGIST
MATTHEW J. COHRT
2634
STATE OF CALIFORNIA

Copies: pdf/ Addressee

Project: Peterson Road, Rancho Mirage
Project Number: 544-22493
Client: Evangelos Pistiolis
Site Lat/Long: 33.7690/-116.4391
Controlling Seismic Source: San Andreas

REFERENCE	NOTATION	VALUE
Site Class	C, D, D default, or E	D measured
Site Class D - Table 11.4-1	F_a	1.0
Site Class D - 21.3(ii)	F_v	2.5
$0.2*(S_{D1}/S_{DS})$	T_0	0.140
S_{D1}/S_{DS}	T_S	0.698
Fundamental Period (12.8.2)	T	Period
Seismic Design Maps or Fig 22-14	T_L	8
Equation 11.4-4 - $2/3*S_{M1}$	S_{D1}	0.7095*
Equation 11.4-2 - F_v*S_1	S_{M1}	1.0642*

REFERENCE	NOTATION	VALUE
Fv (Table 11.4-2)[Used for General Spectrum]	F_v	1.7
Design Maps	S_s	1.524
Design Maps	S_1	0.626
Equation 11.4-1 - F_A*S_S	S_{MS}	1.524*
Equation 11.4-3 - $2/3*S_{MS}$	S_{DS}	1.016*
Design Maps	PGA	0.668
Table 11.8-1	F_{PGA}	1.1
Equation 11.8-1 - $F_{PGA}*PGA$	PGA_M	0.735*
Section 21.5.3	80% of PGA_M	0.588
Design Maps	C_{RS}	0.913
Design Maps	C_{R1}	0.894

RISK COEFFICIENT

Cr - At Perods <=0.2, Cr=C_{RS}	C_{RS}	0.913
Cr - At Periods >=1.0, Cr=C_{R1}	C_{R1}	0.894

Cr - At Periods between 0.2 and 1.0 use trendline formula to complete

Period	Cr
0.200	0.913
0.300	0.911
0.400	0.908
0.500	0.906
0.600	0.904
0.680	0.902
1.000	0.894

* **Code based design value.** See accompanying data for Site Specific Design values.

Mapped values from https://seismicmaps.org/

Sladden Engineering

PROBABILISTIC SPECTRA[1]
2% in 50 year Exceedence

Project No: 544-22493

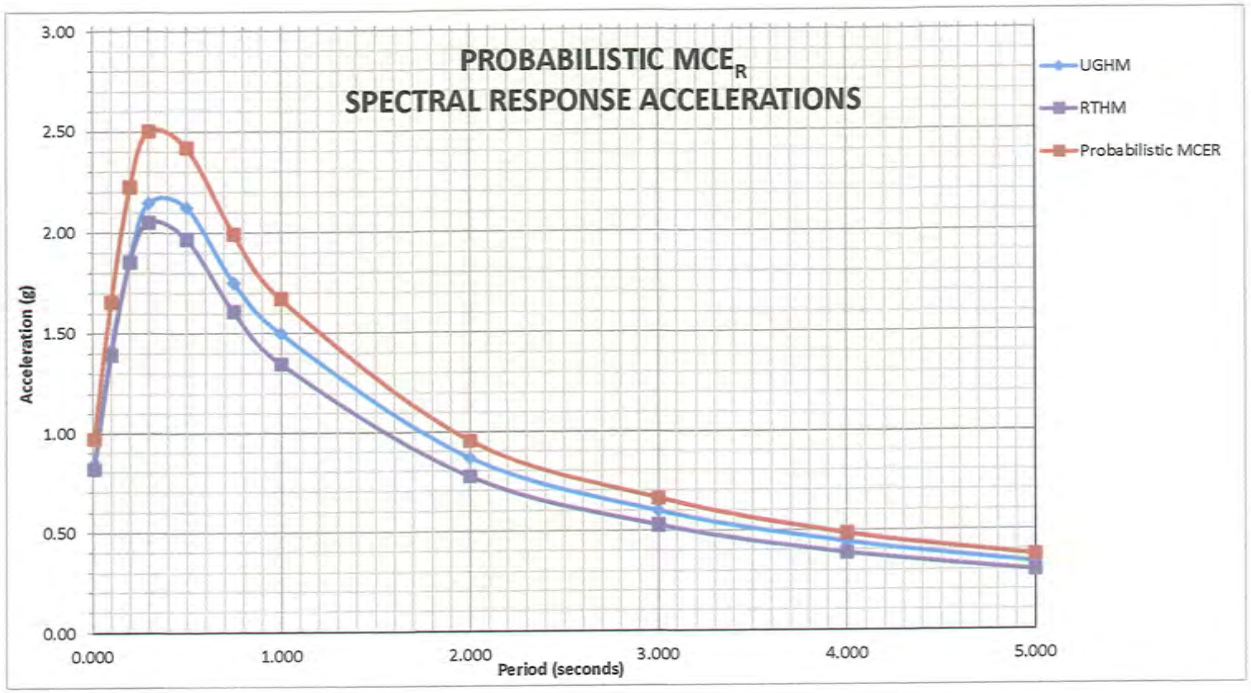
Period	UGHM	RTHM	Max Directional Scale Factor[2]	Probabilistic MCE
0.010	0.844	0.816	1.19	0.971
0.100	1.418	1.392	1.19	1.656
0.200	1.868	1.853	1.20	2.224
0.300	2.145	2.050	1.22	2.501
0.500	2.123	1.967	1.23	2.419
0.750	1.750	1.606	1.24	1.991
1.000	1.497	1.346	1.24	1.669
2.000	0.867	0.770	1.24	0.955
3.000	0.597	0.527	1.25	0.659
4.000	0.441	0.386	1.25	0.483
5.000	0.337	0.297	1.26	0.374

Probabilistic PGA: 0.844

Is Probabilistic $Sa_{(max)}$<1.2F_a? NO

[1] Data Sources:
https://earthquake.usgs.gov/hazards/interactive/
https://earthquake.usgs.gov/designmaps/rtgm/

[2] Shahi-Baker RotD100/RotD50 Factors (2014)



Sladden Engineering

DETERMINISTIC SPECTRUM

Largest Amplitudes of Ground Motions Considering All Sources Calculated using Weighted Mean of Attenuation Equations[1]

Controlling Source: San Andreas

Is Probabilistic $Sa_{(max)}$<1.2Fa? NO

Project No: 544-22493

Period	Deterministic PSa Median + 1.σ for 5% Damping	Max Directional Scale Factor[2]	Deterministic MCE	Section 21.2.2 Scaling Factor Applied
0.010	0.649	1.19	0.772	0.772
0.020	0.650	1.19	0.773	0.773
0.030	0.660	1.19	0.785	0.785
0.050	0.704	1.19	0.837	0.837
0.075	0.846	1.19	1.007	1.007
0.100	1.006	1.19	1.197	1.197
0.150	1.241	1.20	1.490	1.490
0.200	1.391	1.20	1.669	1.669
0.250	1.491	1.21	1.804	1.804
0.300	1.543	1.22	1.882	1.882
0.400	1.550	1.23	1.907	1.907
0.500	1.496	1.23	1.840	1.840
0.750	1.206	1.24	1.495	1.495
1.000	1.010	1.24	1.252	1.252
1.500	0.727	1.24	0.901	0.901
2.000	0.555	1.24	0.688	0.688
3.000	0.381	1.25	0.476	0.476
4.000	0.270	1.25	0.337	0.337
5.000	0.201	1.26	0.253	0.253

Is Determinstic $Sa_{(max)}$<1.5*Fa? NO

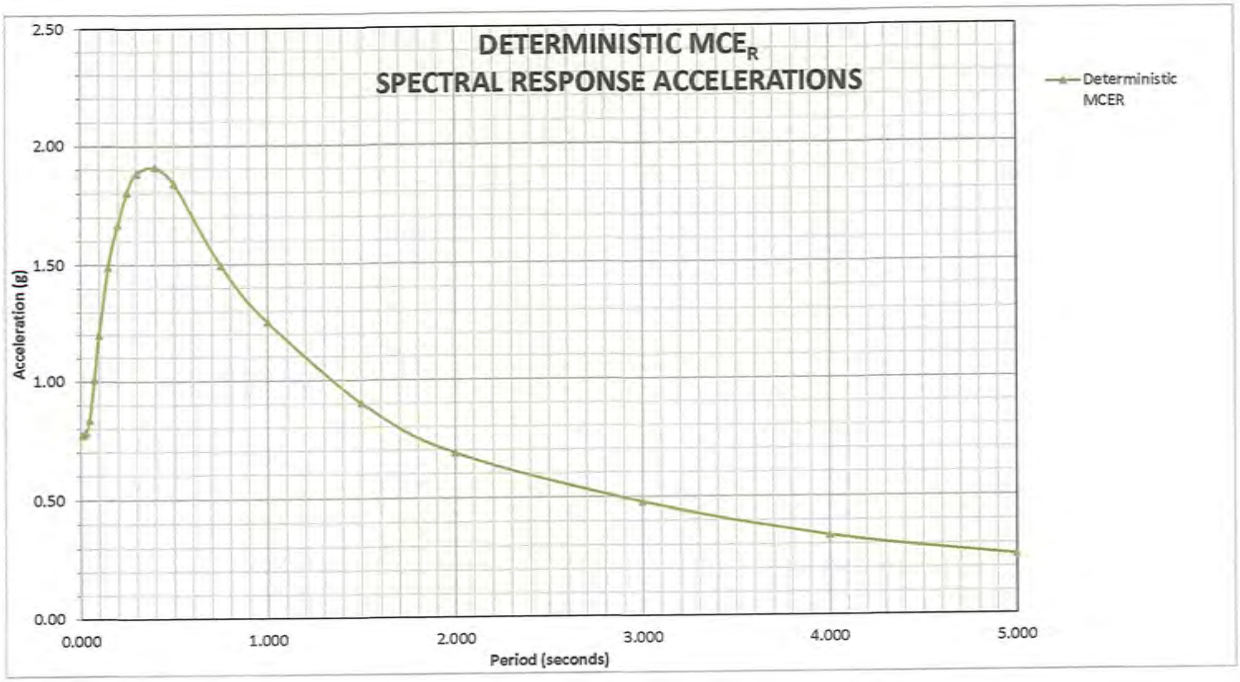
Section 21.2.2 Scaling Factor: N/A

Deterministic PGA: 0.649

Is Deterministic PGA >=F_{PGA}*0.5? YES

[1] NGAWest 2 GMPE worksheet and Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) - Time Dependent Model

[2] Shahi-Baker RotD100/RotD50 Factors (2014)



Sladden Engineering

SITE SPECIFIC SPECTRA

Period	Probabilistic MCE	Deterministic MCE	Site-Specific MCE	Design Response Spectrum (Sa)
0.010	0.971	0.772	0.772	0.515
0.100	1.656	1.197	1.197	0.798
0.200	2.224	1.669	1.669	1.113
0.300	2.501	1.882	1.882	1.255
0.500	2.419	1.840	1.840	1.226
0.750	1.991	1.495	1.495	0.997
1.000	1.669	1.252	1.252	0.835
2.000	0.955	0.688	0.688	0.459
3.000	0.659	0.476	0.476	0.317
4.000	0.483	0.337	0.337	0.225
5.000	0.374	0.253	0.253	0.169

ASCE 7-16: Section 21.4

Site Specific

	Calculated Value	Design Value
SDS:	1.129	1.129
SD1:	0.952	0.952
SMS:	1.694	1.694
SM1:	1.429	1.429
Site Specific PGAm:	0.649	0.649
Site Class:	D measured	

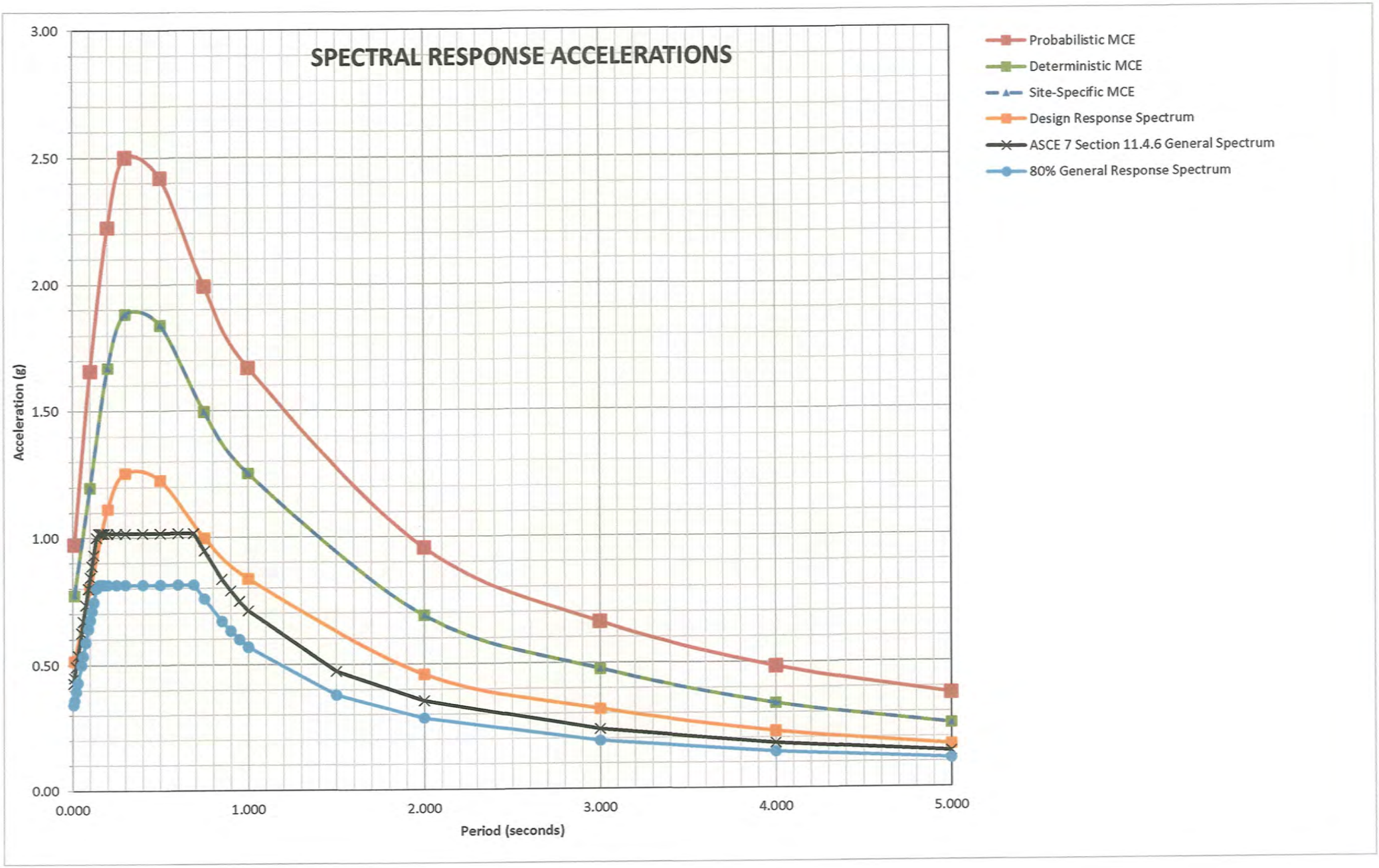
Seismic Design Category - Short* D

Seismic Design Category - 1s* D

* Risk Categories I, II, or III

Period	ASCE 7 SECTION 11.4.6 General Spectrum	80% General Response Spectrum
0.005	0.428	0.343
0.010	0.450	0.360
0.020	0.494	0.395
0.030	0.537	0.430
0.050	0.625	0.500
0.060	0.668	0.535
0.075	0.734	0.587
0.090	0.799	0.639
0.100	0.843	0.674
0.110	0.887	0.709
0.120	0.930	0.744
0.136	1.000	0.800
0.150	1.016	0.813
0.160	1.016	0.813
0.170	1.016	0.813
0.180	1.016	0.813
0.200	1.016	0.813
0.250	1.016	0.813
0.300	1.016	0.813
0.400	1.016	0.813
0.500	1.016	0.813
0.600	1.016	0.813
0.690	1.016	0.813
0.750	0.946	0.757
0.850	0.835	0.668
0.900	0.788	0.631
0.950	0.747	0.597
1.000	0.709	0.568
1.500	0.473	0.378
2.000	0.355	0.284
3.000	0.236	0.189
4.000	0.177	0.142
5.000	0.142	0.114

Project No: 544-22493


SPECTRAL RESPONSE ACCELERATIONS
Probabilistic MCE
Deterministic MCE
Site-Specific MCE
Design Response Spectrum
ASCE 7 Section 11.4.6 General Spectrum
80% General Response Spectrum
Acceleration (g)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.000
1.000
2.000
3.000
4.000
5.000
Period (seconds)

Appendix F

Hydrology Report, Structural BMP and/or Retention Facility Sizing Calculations and Design Details

PRELIMINARY HYDROLOGY STUDY
for
TENTATIVE TRACT MAP 38971
RANCHO MIRAGE, CALIFORNIA

Prepared for:
Horti Caesaris LLC
9401 Wilshire Blvd., 12th Floor
Beverly Hills, CA 90212-2928

Prepared by:

FOMOTOR ENGINEERING

225 S. Civic Drive, Suite 1-5
Palm Springs, California 92262
Phone (760)323-1842
Fax (760)323-1742



July 9, 2024

Table of Contents

I. Report

II. Reference Material

a. Vicinity Map
b. Flood Insurance Rate Map (U.S. Department of Homeland Security Federal Emergency Management Act Map Service Center)
c. Hydrologic Soils Group Maps (From US Department of Agriculture Soil Conservation Service)
d. Point Precipitation Frequency (National Oceanic and Atmospheric Administration's Precipitation Frequency Data Server)
e. City of Rancho Mirage Retention Basin Standard Detail 310.
f. Impervious Cover for Developed Areas – Plate D-5.6 (RCFC&WCD Hydrology Manual).
g. Runoff Index– Plate D-5.5-Pg 1 (RCFC&WCD Hydrology Manual).
h. Pervious Area Loss Rate – Plate E-6.2 (RCFC&WCD Hydrology Manual).
i. SUH Shortcut Method Basin and Runoff Calculation Spreadsheet

VI. Exhibit

i. Preliminary Hydrology Exhibit

PRELIMINARY HYDROLOGY STUDY FOR TENTATIVE TRACT MAP 38971

PROJECT SITE LOCATION

The 20.05-acre 16 lot proposed Tentative Tract Map site is located on Peterson Road, west of Mirage Cove Drive, in the City of Rancho Mirage, County of Riverside, California. The proposed development site lies in Section 2, T5S, R5E, and SBBM, with APNs: 689-090-003, 689-130-004, -005, -013, -014, -017, -018 and 689-140-022.

PROJECT SITE DESCRIPTION

The project site is presently vacant. Existing elevations vary from 264 down to 257 with a slight slope. The site is entirely composed of Hydrologic Soil Type "A". A Tentative Tract Map is proposed on this site. The project site area is in shaded Zone X, which is described as: "2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile". (See Riverside County Flood Insurance Rate Map numbers 06065C1589G and 06065C1595G, Effective August 28, 2008, in Reference Materials).

PURPOSE

Each proposed lot within the project site was separately analyzed for proposed condition basin capacity using Synthetic Unit Hydrograph Shortcut Method for the 1, 3, 6, and 24-hour duration 100-year storm event to determine the worst-case contributing runoff volume. This computed runoff volume was used to size a proposed retention basin for each lot as per City of Rancho Mirage Standard Detail 310 for Retention Basins. The runoff from each proposed onsite area would be directed via swale system to the proposed retention basin. Adjacent half street frontage was added to the runoff area of each lot.

METHODOLOGY

The materials included with this study are presented to satisfy the criteria set forth in the Riverside County Flood Control & Water Conservation District (RCFC & WCD) Hydrology Manual. The onsite/offsite post-developed condition design runoff volume was determined using the worst of the 1, 3, 6, and 24-hour duration storm for the 100-year event. Peak discharges of the 100-year storm event will be determined with the Rational Formula. Synthetic Unit Hydrograph (SUH) calculations were performed in accordance with RCFC & WCD criteria. The Hydrologic Soil Group area was determined with the Natural Resources Conservation Service's National Cooperative Soil Survey (See Reference Material). Point precipitation frequency data was obtained with the National Oceanic and Atmospheric Administration's (NOAA) Precipitation Frequency Data Server from Atlas 14 (See Reference Material.). The NOAA point precipitation data of the 100-year event will be plotted on a log-log plot to obtain the slope of intensity duration curve which will be used in the Rational Method analysis. Any necessary storm drains will be modeled with the computer modeling software, Hydraflow Storm Sewers Extensions for AutoCAD Civil3D 2024, by Autodesk, Inc. Any necessary storm drain inlets will be sized as per AutoCAD Hydraflow Express Extension, Version 12.

RESULT OF SYNTHETIC UNIT HYDROGRAPH ANALYSIS

Summary of results of the Synthetic Unit Hydrograph (SUH) analysis are as follows:
Please refer to the attached Hydrology Plan, and SUH Calculation Spreadsheets in the Reference Materials

Proposed Onsite and Offsite Area Runoff to Basins

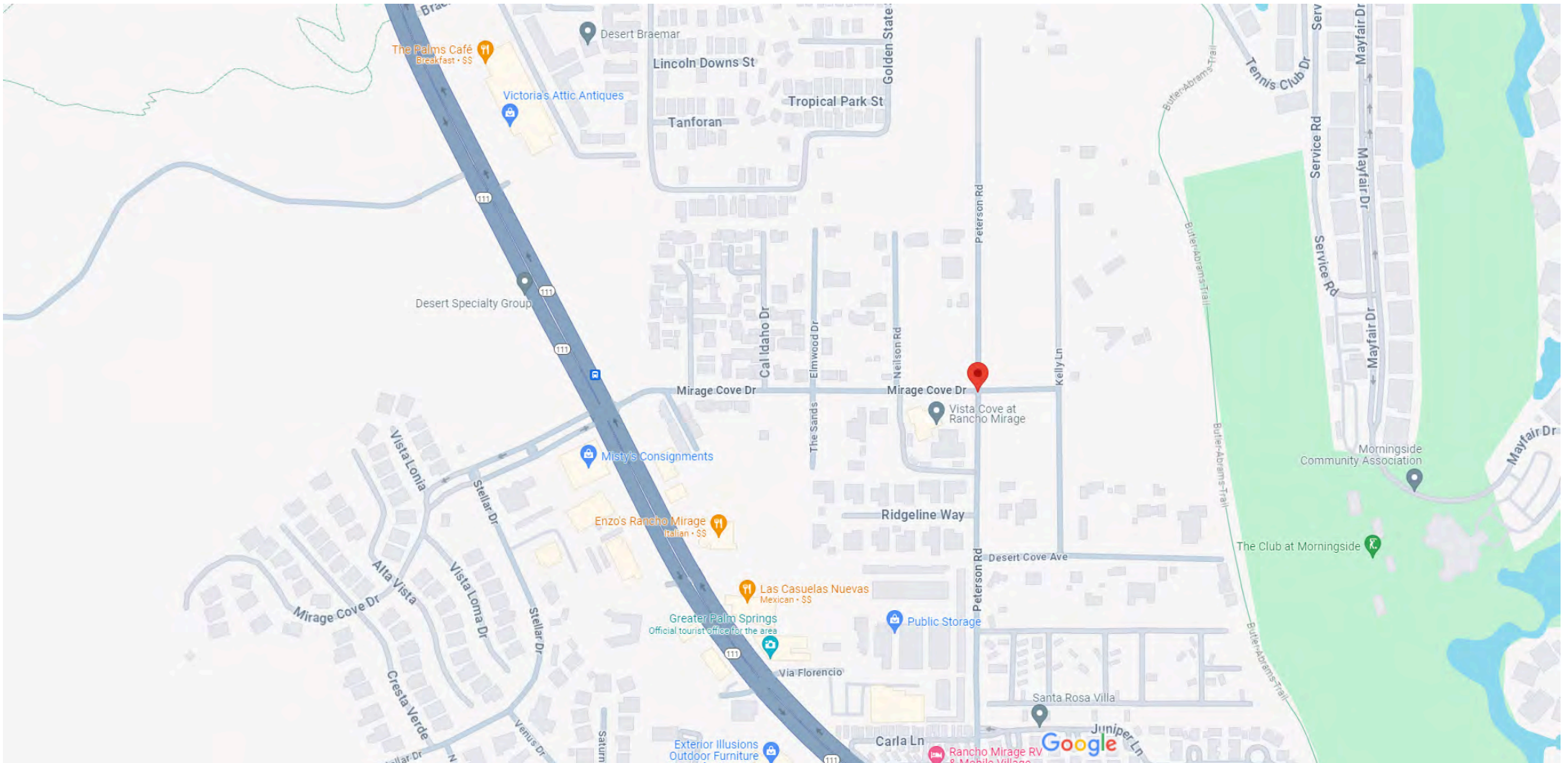
BASIN ID	*CONTRIBUTING AREA (ACRES) (STREET OFFSITE FRONTAGE 0.09AC)*	*STORM FREQUENCY (YEAR)*	*DURATION (HOUR)*	*PEAK RUNOFF STORAGE VOLUME VS INFILTRATION (CU-FT) -POST DEV*	*BASIN CAPACITY (CU-FT)*	*BASIN DEPTH (FT)*	*PEAK BASIN WATER DEPTH (FT)*
LOT 1	***1.09(1.00+0.09)***	***100***	***1***	***7,307***	***8,996***	***4***	***3.25***
LOT 2	***1.16(1.07+0.09)***	***100***	***1***	***7,777***	***8,239***	***4***	***3.78***
LOT 3	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 4	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 5	***1.18(1.09+0.09)***	***100***	***1***	***7,911***	***8,239***	***4***	***3.84***
LOT 6	***1.25(1.16+0.09)***	***100***	***1***	***8,380***	***8,471***	***4***	***3.96***
LOT 7	***1.25(1.16+0.09)***	***100***	***1***	***8,380***	***8,471***	***4***	***3.96***
LOT 8	***1.07(0.98+0.09)***	***100***	***1***	***7,173***	***8,239***	***4***	***3.48***
LOT 9	***1.07(0.98+0.09)***	***100***	***1***	***7,173***	***8,239***	***4***	***3.48***
LOT 10	***1.23(1.14+0.09)***	***100***	***1***	***8,246***	***8,331***	***5***	***4.95***
LOT 11	***1.45(1.36+0.09)***	***100***	***1***	***9,721***	***9,830***	***5***	***4.94***
LOT 12	***1.64(1.55+0.09)***	***100***	***1***	***10,995***	***11,159***	***5***	***4.93***
LOT 13	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 14	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 15	***1.12(1.03+0.09)***	***100***	***1***	***7,508***	***8,239***	***4***	***3.65***
LOT 16	***1.11(1.02+0.09)***	***100***	***1***	***7,441***	***8,239***	***4***	***3.61***

DISCUSSION

Basin infiltration was not used to size the retention basins. A percolation test will be performed in the future. The 1-hour storm was determined to be the worst case of the 1, 3, 6, and 24-hour duration 100-year storm events for the Synthetic Unit Hydrograph analysis. In general, each lot will have an independent retention basin sized to contain the 100-year 1-hour runoff from each respective lot as well as the adjacent half-street frontage. Each basin will be four to five feet deep with 3 to 1 side slopes and receive runoff from swale flow (See SUH Shortcut Calculations and Preliminary Hydrology Plan in the Reference Materials). The impermeable area used for calculations was based on a 1-acre residential lot from Plate D-5.6 of the RCFC&WCD Hydrology Manual and the adjacent half-street frontage was added. The Runoff Index was selected from Plate D-5.5 (1 of 2) of the RCFC&WCD Hydrology Manual.

REFERENCE MATERIAL

Google Maps Peterson Rd & Mirage Cove Dr

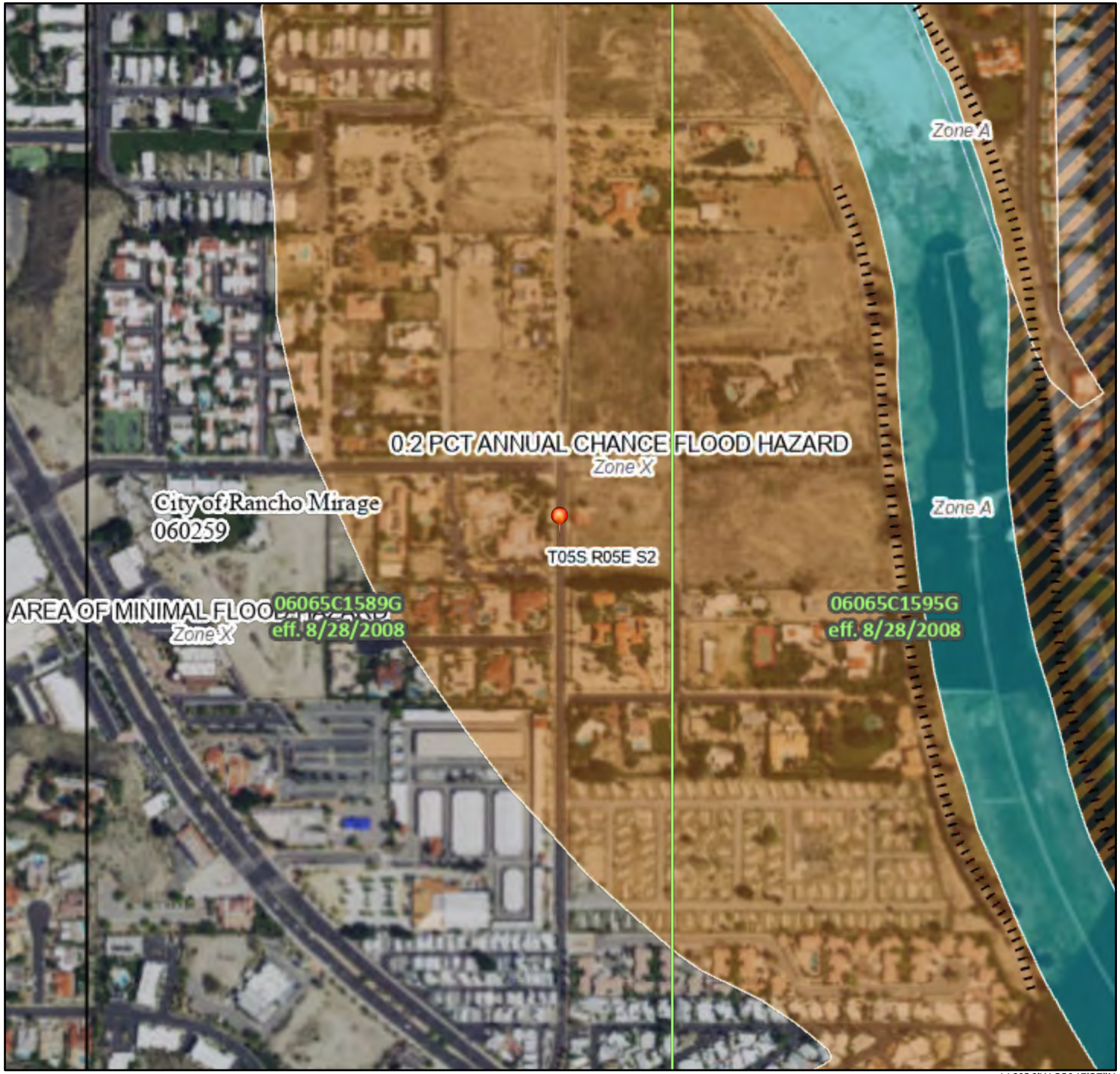


Map data ©2024 Google 200 ft

National Flood Hazard Layer FIRMette

FEMA

116°26'38"W 33°46'7"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

116°26'W 33°45'37"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/11/2024 at 4:17 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—Riverside County, Coachella Valley Area, California
(North Area)



Map Scale: 1:2,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 35 70 140 210

Feet
0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2022—May 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CpA	Coachella fine sand, 0 to 2 percent slopes	A	13.0	100.0%
Totals for Area of Interest			**13.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

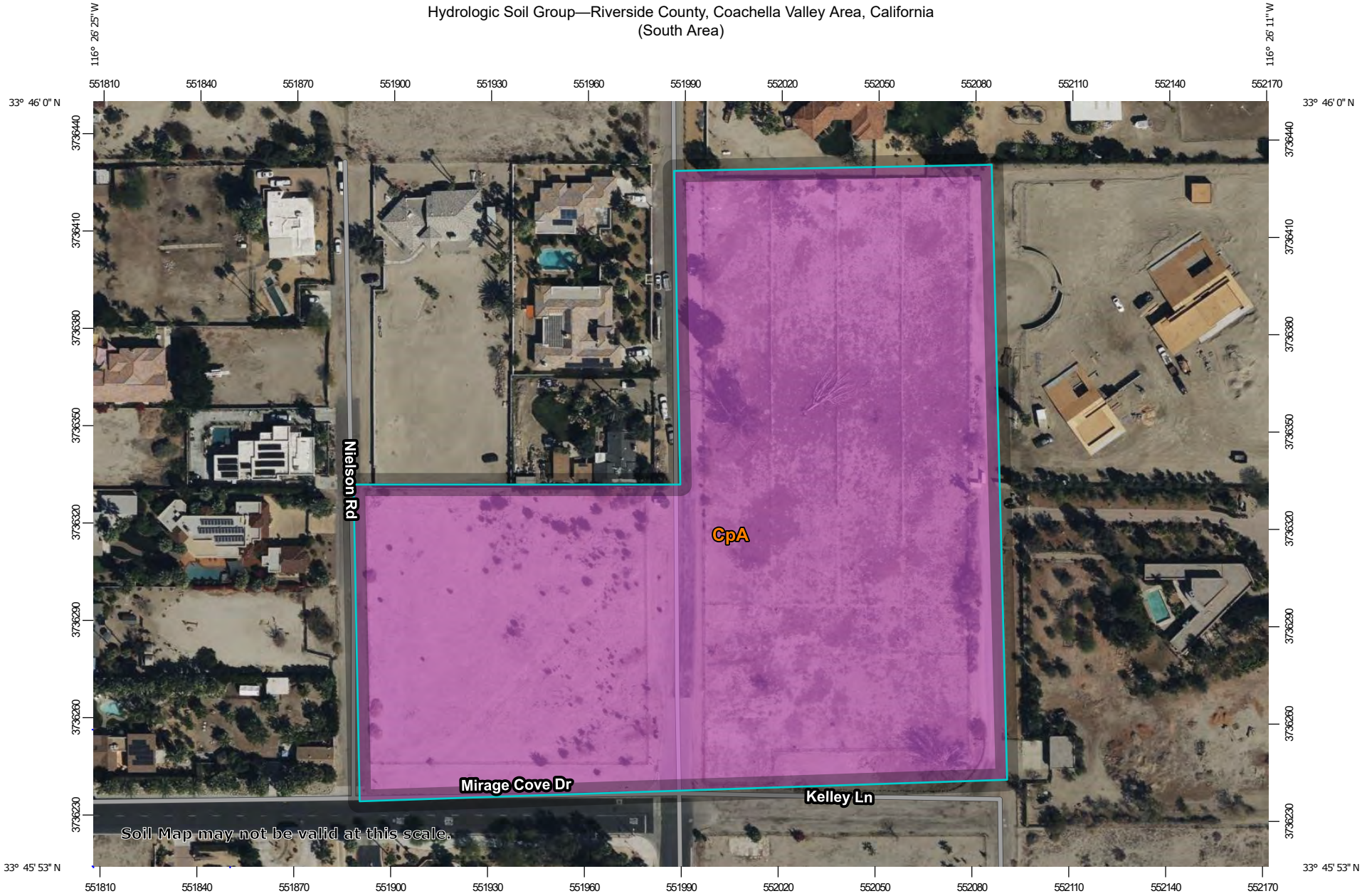
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Hydrologic Soil Group—Riverside County, Coachella Valley Area, California
(South Area)



Map Scale: 1:1,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Riverside County, Coachella Valley Area, California
Survey Area Data: Version 15, Aug 30, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 15, 2022—May 28, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CpA	Coachella fine sand, 0 to 2 percent slopes	A	7.1	100.0%
Totals for Area of Interest			**7.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

NOAA Atlas 14, Volume 6, Version 2
Location name: Rancho Mirage, California, USA*
Latitude: 33.767°, Longitude: -116.4389°
Elevation: 260 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.072 (0.060-0.087)	0.117 (0.097-0.142)	0.190 (0.157-0.231)	0.260 (0.214-0.319)	0.378 (0.301-0.479)	0.488 (0.380-0.632)	0.620 (0.471-0.824)	0.800 (0.590-1.09)	1.27 (0.901-1.82)	1.81 (1.24-2.68)
10-min	0.103 (0.086-0.124)	0.168 (0.140-0.203)	0.272 (0.226-0.330)	0.373 (0.307-0.458)	0.541 (0.431-0.687)	0.699 (0.544-0.906)	0.888 (0.675-1.18)	1.15 (0.846-1.57)	1.83 (1.29-2.61)	2.60 (1.78-3.84)
15-min	0.124 (0.104-0.150)	0.203 (0.169-0.246)	0.329 (0.273-0.400)	0.451 (0.372-0.553)	0.655 (0.521-0.831)	0.845 (0.658-1.10)	1.07 (0.816-1.43)	1.39 (1.02-1.90)	2.21 (1.56-3.15)	3.14 (2.15-4.65)
30-min	0.202 (0.169-0.245)	0.330 (0.275-0.400)	0.535 (0.444-0.650)	0.734 (0.605-0.900)	1.06 (0.848-1.35)	1.38 (1.07-1.78)	1.75 (1.33-2.32)	2.26 (1.66-3.09)	3.59 (2.54-5.13)	5.12 (3.49-7.56)
60-min	0.279 (0.233-0.338)	0.455 (0.379-0.552)	0.738 (0.613-0.898)	1.01 (0.835-1.24)	1.47 (1.17-1.87)	1.90 (1.48-2.46)	2.41 (1.83-3.21)	3.12 (2.30-4.26)	4.96 (3.51-7.08)	7.06 (4.83-10.4)
2-hr	0.374 (0.312-0.453)	0.611 (0.509-0.741)	0.969 (0.805-1.18)	1.30 (1.07-1.60)	1.82 (1.45-2.31)	2.28 (1.77-2.95)	2.80 (2.13-3.72)	3.40 (2.51-4.66)	5.01 (3.55-7.15)	7.14 (4.87-10.6)
3-hr	0.443 (0.369-0.536)	0.721 (0.601-0.875)	1.13 (0.940-1.38)	1.50 (1.24-1.84)	2.07 (1.65-2.62)	2.56 (1.99-3.31)	3.10 (2.36-4.12)	3.72 (2.75-5.09)	5.06 (3.58-7.22)	7.21 (4.92-10.7)
6-hr	0.593 (0.494-0.718)	0.953 (0.794-1.16)	1.47 (1.22-1.79)	1.93 (1.59-2.36)	2.60 (2.07-3.30)	3.17 (2.47-4.11)	3.79 (2.88-5.04)	4.48 (3.31-6.14)	5.51 (3.90-7.86)	7.28 (4.97-10.8)
12-hr	0.733 (0.611-0.888)	1.16 (0.969-1.41)	1.77 (1.47-2.15)	2.30 (1.90-2.82)	3.08 (2.45-3.91)	3.72 (2.90-4.83)	4.42 (3.36-5.88)	5.19 (3.83-7.10)	6.31 (4.46-9.00)	7.35 (5.02-10.9)
24-hr	0.867 (0.768-1.00)	1.36 (1.20-1.57)	2.06 (1.81-2.38)	2.66 (2.33-3.10)	3.54 (3.00-4.26)	4.27 (3.54-5.24)	5.05 (4.10-6.36)	5.91 (4.66-7.64)	7.16 (5.43-9.63)	8.20 (6.02-11.4)
2-day	0.996 (0.882-1.15)	1.54 (1.36-1.78)	2.32 (2.04-2.68)	2.99 (2.62-3.49)	3.98 (3.37-4.80)	4.80 (3.99-5.90)	5.69 (4.62-7.16)	6.67 (5.26-8.62)	8.09 (6.14-10.9)	9.28 (6.81-12.9)
3-day	1.06 (0.937-1.22)	1.63 (1.44-1.88)	2.44 (2.15-2.83)	3.16 (2.76-3.68)	4.21 (3.57-5.07)	5.09 (4.23-6.26)	6.05 (4.91-7.62)	7.11 (5.62-9.20)	8.67 (6.58-11.7)	9.99 (7.33-13.9)
4-day	1.09 (0.966-1.26)	1.67 (1.48-1.93)	2.51 (2.21-2.90)	3.24 (2.84-3.78)	4.33 (3.67-5.22)	5.24 (4.35-6.44)	6.24 (5.06-7.85)	7.34 (5.80-9.49)	8.97 (6.80-12.1)	10.4 (7.59-14.4)
7-day	1.19 (1.05-1.37)	1.82 (1.61-2.10)	2.73 (2.40-3.16)	3.52 (3.08-4.11)	4.71 (3.99-5.67)	5.70 (4.73-7.00)	6.78 (5.50-8.54)	7.98 (6.30-10.3)	9.76 (7.40-13.1)	11.3 (8.25-15.7)
10-day	1.26 (1.11-1.45)	1.93 (1.70-2.22)	2.89 (2.55-3.34)	3.74 (3.27-4.36)	5.00 (4.24-6.02)	6.06 (5.03-7.44)	7.21 (5.84-9.07)	8.48 (6.70-11.0)	10.4 (7.86-14.0)	12.0 (8.77-16.6)
20-day	1.38 (1.22-1.60)	2.14 (1.89-2.47)	3.23 (2.85-3.74)	4.20 (3.67-4.90)	5.65 (4.78-6.80)	6.86 (5.70-8.44)	8.20 (6.65-10.3)	9.68 (7.64-12.5)	11.9 (9.00-16.0)	13.7 (10.1-19.1)
30-day	1.55 (1.37-1.79)	2.42 (2.14-2.79)	3.68 (3.24-4.26)	4.80 (4.20-5.61)	6.49 (5.50-7.82)	7.92 (6.57-9.73)	9.48 (7.69-11.9)	11.2 (8.86-14.5)	13.8 (10.5-18.6)	16.0 (11.7-22.3)
45-day	1.70 (1.51-1.97)	2.69 (2.38-3.10)	4.12 (3.64-4.77)	5.41 (4.73-6.32)	7.36 (6.24-8.86)	9.02 (7.48-11.1)	10.8 (8.79-13.6)	12.9 (10.2-16.7)	15.9 (12.1-21.4)	18.5 (13.6-25.8)
60-day	1.83 (1.62-2.11)	2.91 (2.58-3.36)	4.50 (3.97-5.22)	5.94 (5.20-6.93)	8.12 (6.88-9.77)	9.98 (8.28-12.3)	12.0 (9.76-15.1)	14.3 (11.3-18.5)	17.8 (13.5-24.0)	20.8 (15.2-28.9)

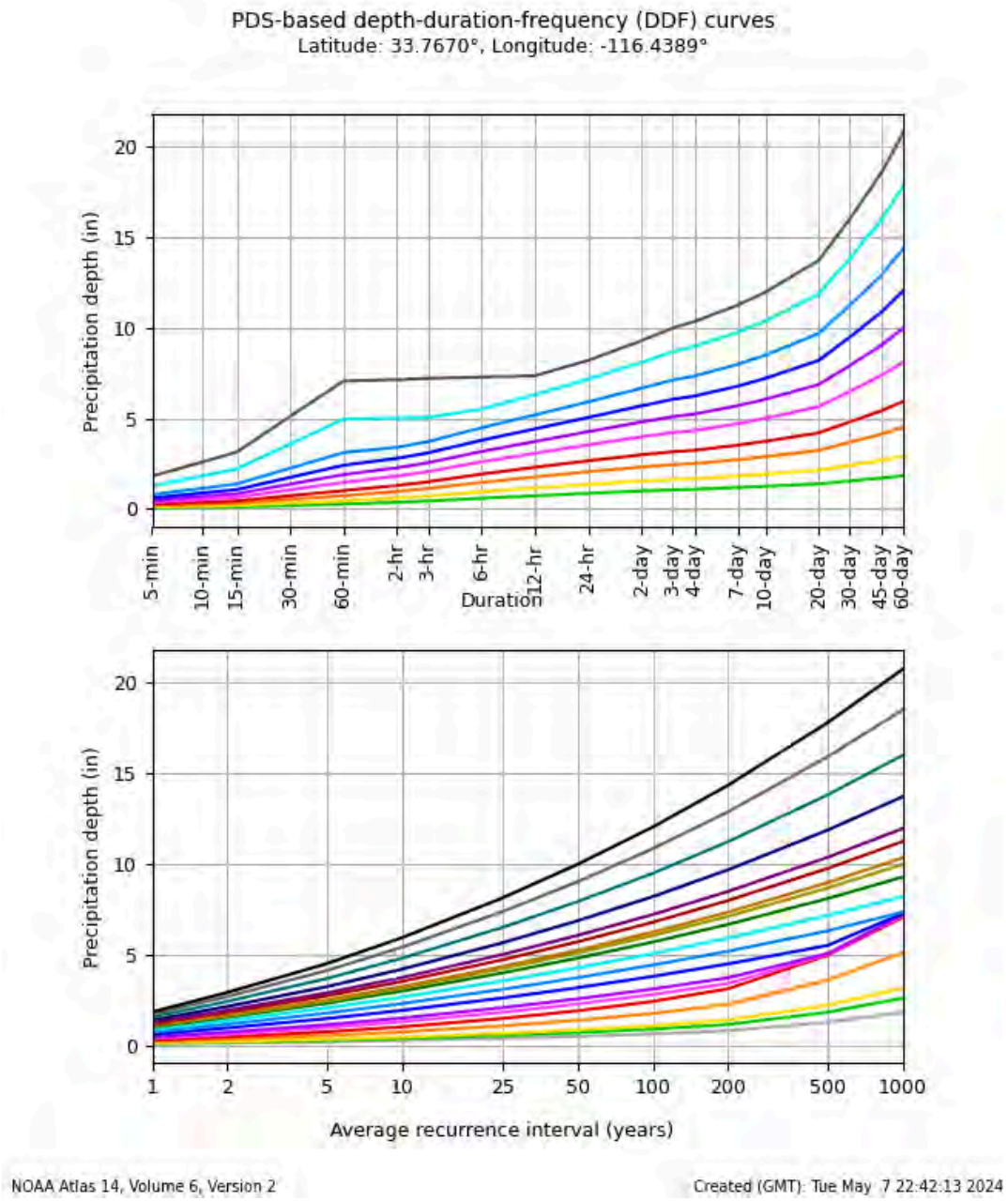
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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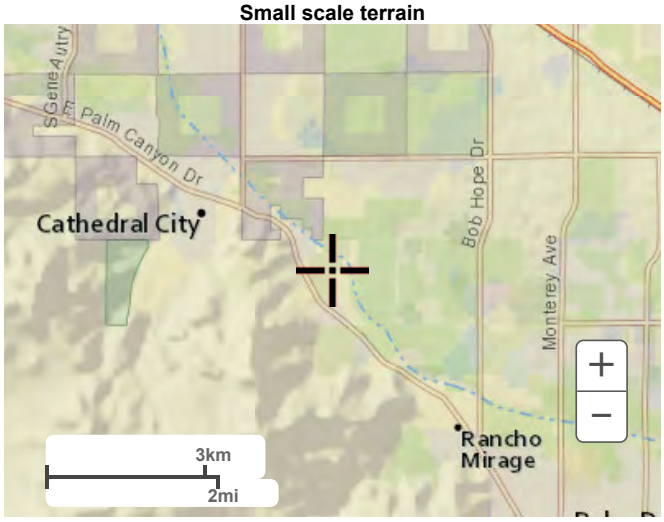
PF graphical



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Maps & aerials

Small scale terrain



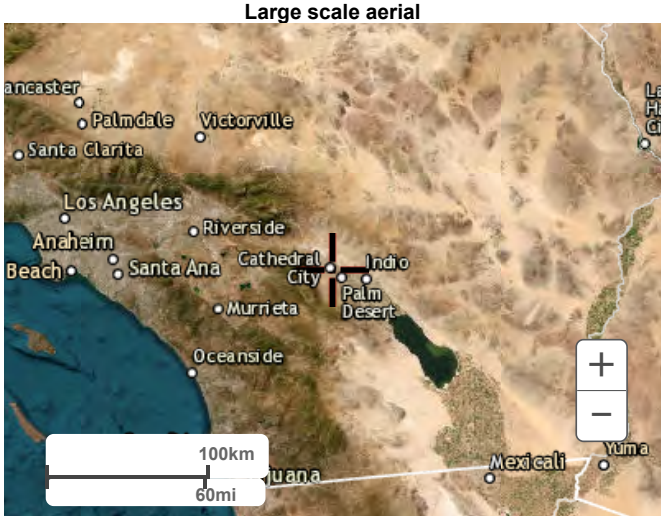
Large scale terrain



Large scale map



Large scale aerial

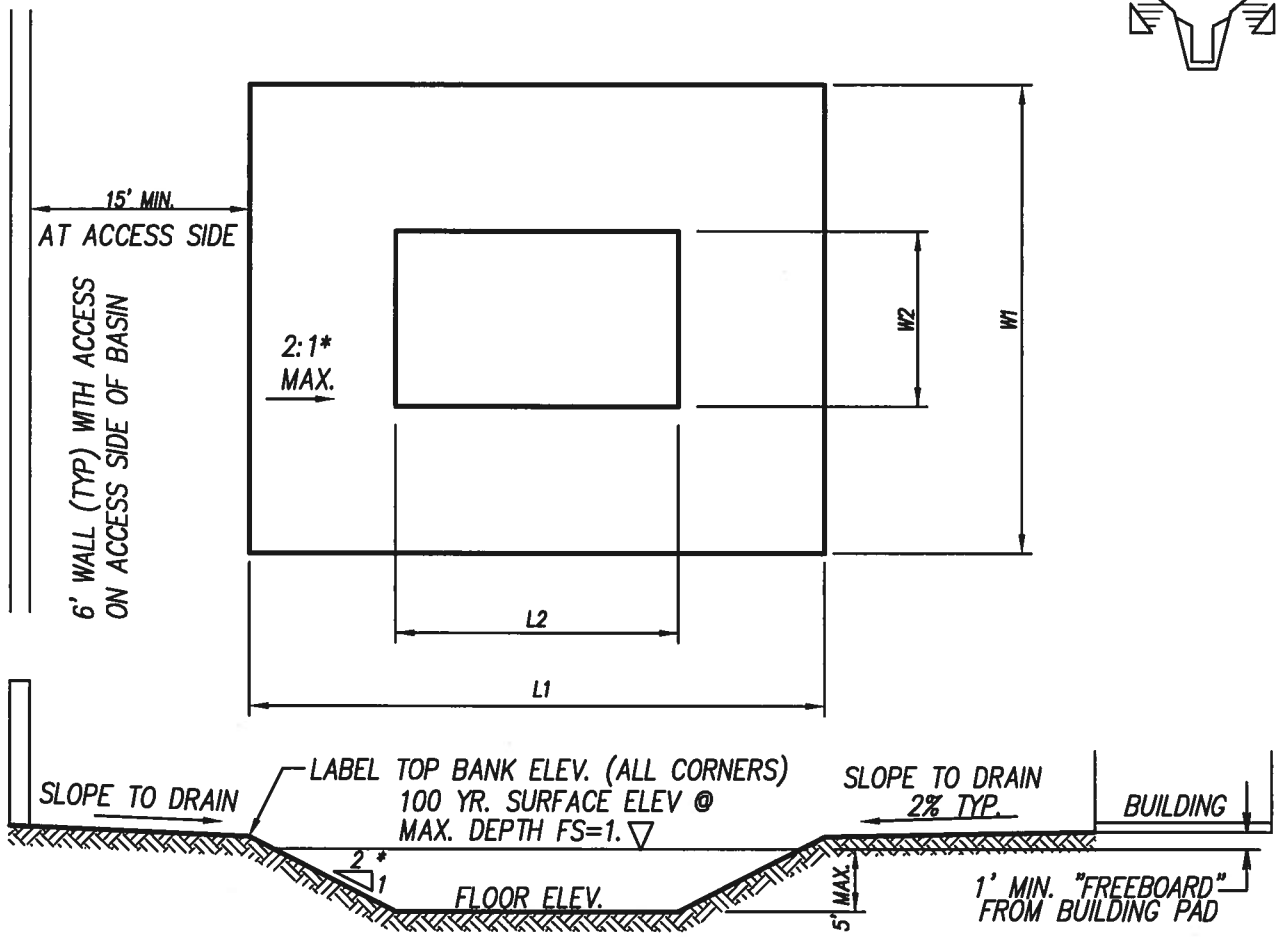


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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

CITY OF RANCHO MIRAGE



DESIGN CRITERIA

MAX. PERCOLATION RATE = 1"/HR.
MAX. DEPTH AT PEAK STORAGE = 5'
FACTOR OF SAFETY F.S. = 1.0 MINIMUM
ONE FOOT MINIMUM "FREEBOARD" BELOW LOWEST BUILDING PAD TO MAXIMIUM WATER LEVEL
THE BASIN SHALL BE DESIGNED TO RETAIN THE RUNOFF FROM THE WORST CASE OF THE 1 HR., 3 HR. 6 HR., OR 24 HR. DURATION, 100 YEAR FREQUENCY STORM.
SEE SHT. 2 OF 2 FOR MINIMUM PLAN REQUIREMENTS

* SLOPES STEEPER THAN 5:1 WILL REQUIRE EROSION CONTROL APPROVED BY THE CITY ENGINEER. (TYPICAL EROSION CONTROL CONSISTS OF CONTINUOUS GROUND COVER LIKE GRASS, OR WASHED ROCK WITH A DIAMETER OF 1" OR LARGER, PLACED TO A DEPTH OF 3" OVER WEED BARRIER CLOTH.)

CITY OF RANCHO MIRAGE		STANDARD
REVISIONS	RETENTION BASIN	DETAIL
* 7/5/2012		310
	7/12/12	
	APPROVED BY: CITY ENGINEER DATE	SHT. 1 OF 2

CITY OF RANCHO MIRAGE

AT A MINIMUM, PLANS SHALL INCLUDE THE FOLLOWING INFORMATION:

1. BOUNDARY (LOT LINES) INCLUDING BEARING AND DISTANCES
2. SLOPE SYMBOLS, OR FINISH CONTOURS, WITH SLOPE RATIOS OR PERCENTAGES
* 3. ELEVATION LABELS FOR: BOTTOM, WATER SURFACE AT VOL. MAX. FOR 100YR. STORM, AND TOP (HYDROLOGY CALCULATIONS SHALL BE SUBMITTED VERIFYING BASIN AREA, DEPTH, AND VOLUME.)
4. DIMENSIONS (LENGTH, WIDTH AND DEPTH) OR SCALED DRAWING.
5. FINISHED SURFACE ELEVATIONS FOR IDENTIFYING THE FLOW PATHS
6. RIP-RAP OR APPROPRIATE EROSION CONTROL IF SLOPES EXCEED 20% (5:1)
7. ANY STRUCTURES, PIPES, HEADWALLS, RIP-RAP, DRYWELLS, ETC. SHOWN WITH REFERENCE TO STREET PLANS, STORM DRAIN PLANS, OR GRADING PLANS (A DRYWELL IS RECOMMENDED FOR LARGER RETENTION BASINS AS A WAY OF INTERCEPTING "NUISANCE WATER' THAT MIGHT CAUSE A CONSTANT SWAMPY AREA TO DEVELOP IN THE RETENTION BASIN. FLOWS TO CVWD CHANNELS OR TO LAKES TYPICALLY REQUIRE A DRYWELL TO INTERCEPT STREET RUNOFF. MAINTENANCE IS EASIEST IF THE DRYWELL IS NEAR THE STREET SO VACUUM TRUCKS CAN ACCESS THEM. SEE STANDARD DRAWINGS 306 AND 311.)

CITY OF RANCHO MIRAGE		STANDARD
REVISIONS * 7/5/2012	RETENTION BASIN NOTES	DETAIL 310
	APPROVED BY: CITY ENGINEER 7/12/12 DATE	SHT. 2 OF 2

ACTUAL IMPERVIOUS COVER

Land Use (1)	Range-Percent	Recommended Value For Average Conditions-Percent(2)
Natural or Agriculture	0 - 10	0
Single Family Residential: (3)		
40,000 S. F. (1 Acre) Lots	10 - 25	20
20,000 S. F. (½ Acre) Lots	30 - 45	40
7,200 - 10,000 S. F. Lots	45 - 55	50
Multiple Family Residential:		
Condominiums	45 - 70	65
Apartments	65 - 90	80
Mobile Home Park	60 - 85	75
Commercial, Downtown Business or Industrial	80 -100	90

Notes:

1. Land use should be based on ultimate development of the watershed. Long range master plans for the County and incorporated cities should be reviewed to insure reasonable land use assumptions.

2. Recommended values are based on average conditions which may not apply to a particular study area. The percentage impervious may vary greatly even on comparable sized lots due to differences in dwelling size, improvements, etc. Landscape practices should also be considered as it is common in some areas to use ornamental gravels underlain by impervious plastic materials in place of lawns and shrubs. A field investigation of a study area should always be made, and a review of aerial photos, where available may assist in estimating the percentage of impervious cover in developed areas.

3. For typical horse ranch subdivisions increase impervious area 5 percent over the values recommended in the table above.

RCFC & WCD
HYDROLOGY MANUAL

IMPERVIOUS COVER FOR DEVELOPED AREAS

PLATE D-5.6

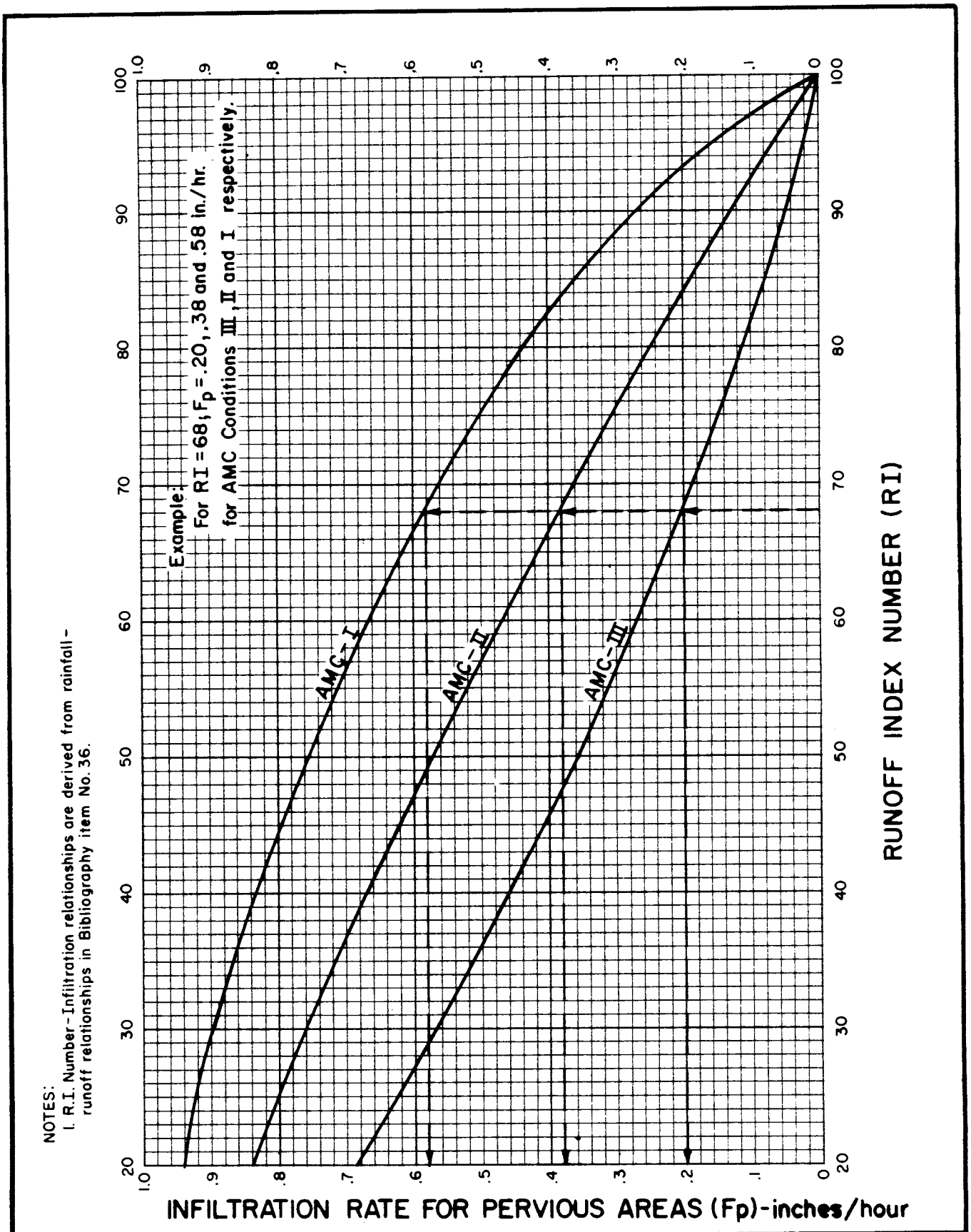
RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

Cover Type (3)	Quality of Cover (2)	Soil Group A	B	C	D
NATURAL COVERS -					
Barren (Rockland, eroded and graded land)		78	86	91	93
Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak)	Poor	53	70	80	85
	Fair	40	63	75	81
	Good	31	57	71	78
Chaparrel, Narrowleaf (Chamise and redshank)	Poor	71	82	88	91
	Fair	55	72	81	86
Grass, Annual or Perennial	Poor	67	78	86	89
	Fair	50	69	79	84
	Good	38	61	74	80
Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass)	Poor	63	77	85	88
	Fair	51	70	80	84
	Good	30	58	72	78
Open Brush (Soft wood shrubs - buckwheat, sage, etc.)	Poor	62	76	84	88
	Fair	46	66	77	83
	Good	41	63	75	81
Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent)	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	28	55	70	77
Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent)	Poor	57	73	82	86
	Fair	44	65	77	82
	Good	33	58	72	79
URBAN COVERS -					
Residential or Commercial Landscaping (Lawn, shrubs, etc.)	Good	32	56	69	75
Turf (Irrigated and mowed grass)	Poor	58	74	83	87
	Fair	44	65	77	82
	Good	33	58	72	79
AGRICULTURAL COVERS -					
Fallow (Land plowed but not tilled or seeded)		76	85	90	92

RCFC & WCD
HYDROLOGY MANUAL

RUNOFF INDEX NUMBERS FOR PERVIOUS AREA

PLATE D-5.5 (1 of 2)



NOTES:
1. R.I. Number-Infiltration relationships are derived from rainfall-runoff relationships in Bibliography item No. 36.

RCFC & WCD

HYDROLOGY MANUAL

INFILTRATION RATE FOR PERVIOUS AREAS VERSUS RUNOFF INDEX NUMBERS

PLATE E-6.2

HYDROLOGY CALCULATIONS -

program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2

Area=1.00ac+0.09ac typ street frontage=1.09ac
5/7/2024 LOT 1

Drainage Area (ac.)	1.0900	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3702 s.f. Bot. = 1062 s.f. Max. Depth (d)= 4 Max. storage= 8995.74 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5575	167.24	0.00	0.00	0.00	0.00	0.00	167.24	1062.00	0.07	167.16	0.07	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9071	272.13	0.00	0.00	0.00	0.00	0.00	272.13	1111.06	0.08	439.21	0.20	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0024	300.73	0.00	0.00	0.00	0.00	0.00	300.73	1190.90	0.08	739.86	0.33	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9389	281.66	0.00	0.00	0.00	0.00	0.00	281.66	1279.13	0.09	1021.44	0.45	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4792	443.77	0.00	0.00	0.00	0.00	0.00	443.77	1361.76	0.09	1465.11	0.65	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7017	510.52	0.00	0.00	0.00	0.00	0.00	510.52	1491.97	0.10	1975.53	0.88	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0514	615.41	0.00	0.00	0.00	0.00	0.00	615.41	1641.76	0.11	2590.82	1.15	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2421	672.62	0.00	0.00	0.00	0.00	0.00	672.62	1822.33	0.13	3263.32	1.45	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2910	987.30	0.00	0.00	0.00	0.00	0.00	987.30	2019.69	0.14	4250.48	1.89	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.9756	1492.69	0.00	0.00	0.00	0.00	0.00	1492.69	2309.40	0.16	5743.01	2.55	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4989	1349.66	0.00	0.00	0.00	0.00	0.00	1349.66	2747.41	0.19	7092.48	3.15	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7164	214.91	0.00	0.00	0.00	0.00	0.00	214.91	3143.44	0.22	7307.17	3.25	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.45	0.22	7306.95	3.25	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.39	0.22	7306.73	3.25	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3206.32	0.22	7306.50	3.25	0.00	0.00	
					Total volume (cf)			7308.64								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0532	15.95	0.00	0.00	0.00	0.00	0.00	15.95	1062.00	0.07	15.87	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0532	15.95	0.00	0.00	0.00	0.00	0.00	15.95	1066.66	0.07	31.74	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0450	13.49	0.00	0.00	0.00	0.00	0.00	13.49	1071.32	0.07	45.16	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1075.25	0.07	63.49	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1080.63	0.08	81.81	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1086.01	0.08	116.93	0.05	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1096.32	0.08	135.26	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1101.69	0.08	170.38	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1112.00	0.08	205.50	0.09	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0613	18.40	0.00	0.00	0.00	0.00	0.00	18.40	1122.31	0.08	223.82	0.10	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0654	19.63	0.00	0.00	0.00	0.00	0.00	19.63	1127.69	0.08	243.37	0.11	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	1133.42	0.08	278.49	0.12	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1143.73	0.08	362.68	0.16	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1168.44	0.08	446.86	0.20	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2809	84.26	0.00	0.00	0.00	0.00	0.00	84.26	1193.14	0.08	531.04	0.24	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1991	59.73	0.00	0.00	0.00	0.00	0.00	59.73	1217.84	0.08	590.68	0.26	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4444	133.33	0.00	0.00	0.00	0.00	0.00	133.33	1235.35	0.09	723.93	0.32	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4853	145.59	0.00	0.00	0.00	0.00	0.00	145.59	1274.45	0.09	869.43	0.39	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3626	108.79	0.00	0.00	0.00	0.00	0.00	108.79	1317.15	0.09	978.13	0.43	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4853	145.59	0.00	0.00	0.00	0.00	0.00	145.59	1349.05	0.09	1123.63	0.50	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7306	219.19	0.00	0.00	0.00	0.00	0.00	219.19	1391.75	0.10	1342.72	0.60	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6489	194.66	0.00	0.00	0.00	0.00	0.00	194.66	1456.05	0.10	1537.27	0.68	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5671	170.12	0.00	0.00	0.00	0.00	0.00	170.12	1513.15	0.11	1707.29	0.76	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6080	182.39	0.00	0.00	0.00	0.00	0.00	182.39	1563.04	0.11	1889.57	0.84	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6489	194.66	0.00	0.00	0.00	0.00	0.00	194.66	1616.54	0.11	2084.12	0.93	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0986	329.58	0.00	0.00	0.00	0.00	0.00	329.58	1673.63	0.12	2413.58	1.07	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4257	427.70	0.00	0.00	0.00	0.00	0.00	427.70	1770.32	0.12	2841.16	1.26	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8124	243.72	0.00	0.00	0.00	0.00	0.00	243.72	1895.80	0.13	3084.75	1.37	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1616	648.49	0.00	0.00	0.00	0.00	0.00	648.49	1967.29	0.14	3733.10	1.66	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3661	709.82	0.00	0.00	0.00	0.00	0.00	709.82	2157.56	0.15	4442.77	1.98	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.7340	820.21	0.00	0.00	0.00	0.00	0.00	820.21	2365.83	0.16	5262.81	2.34	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7937	538.10	0.00	0.00	0.00	0.00	0.00	538.10	2606.49	0.18	5800.73	2.58	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1991	59.73	0.00	0.00	0.00	0.00	0.00	59.73	2764.35	0.19	5860.27	2.61	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	2781.83	0.19	5895.27	2.62	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1173	35.20	0.00	0.00	0.00	0.00	0.00	35.20	2792.10	0.19	5930.28	2.64	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2802.37	0.19	5937.45	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.47	0.19	5937.25	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.42	0.19	5937.06	2.64	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.36	0.19	5936.86	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.30	0.19	5936.67	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.25	0.19	5936.47	2.64	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.19	0.19	5936.28	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.13	0.19	5936.08	2.64	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2804.07	0.19	5935.89	2.64	0.00	0.00
					Total volume (cf)		5941.35								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0250	7.50	0.00	0.00	0.00	0.00	0.00	7.50	1062.00	0.07	7.42	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1064.18	0.07	16.35	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1066.80	0.07	25.27	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1069.42	0.07	34.19	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	1072.04	0.07	43.12	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1074.65	0.07	53.54	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1077.71	0.07	63.96	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1080.77	0.08	74.38	0.03	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1083.83	0.08	84.81	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1086.89	0.08	95.23	0.04	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0350	10.50	0.00	0.00	0.00	0.00	0.00	10.50	1089.95	0.08	105.65	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1093.01	0.08	117.57	0.05	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1096.50	0.08	129.49	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1100.00	0.08	141.41	0.06	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1103.50	0.08	153.33	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1107.00	0.08	165.25	0.07	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1110.50	0.08	177.17	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1113.99	0.08	189.09	0.08	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1117.49	0.08	201.01	0.09	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1120.99	0.08	212.93	0.09	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1124.49	0.08	224.85	0.10	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1127.99	0.08	236.76	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1131.48	0.08	248.68	0.11	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1134.98	0.08	262.10	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0400	12.00	0.00	0.00	0.00	0.00	0.00	12.00	1138.92	0.08	274.02	0.12	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1142.42	0.08	287.44	0.13	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1146.35	0.08	300.85	0.13	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1150.29	0.08	314.27	0.14	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1154.23	0.08	327.68	0.15	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1158.17	0.08	341.10	0.15	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1162.10	0.08	354.52	0.16	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	1166.04	0.08	367.93	0.16	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1169.98	0.08	382.85	0.17	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1174.35	0.08	397.76	0.18	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1178.73	0.08	412.67	0.18	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1183.11	0.08	427.59	0.19	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0500	15.00	0.00	0.00	0.00	0.00	0.00	15.00	1187.49	0.08	442.50	0.20	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1191.86	0.08	458.91	0.20	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1196.68	0.08	475.33	0.21	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0550	16.50	0.00	0.00	0.00	0.00	0.00	16.50	1201.50	0.08	491.74	0.22	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0600	18.00	0.00	0.00	0.00	0.00	0.00	18.00	1206.31	0.08	509.65	0.23	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0650	19.49	0.00	0.00	0.00	0.00	0.00	19.49	1211.57	0.08	529.06	0.24	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0812	24.36	0.00	0.00	0.00	0.00	0.00	24.36	1217.26	0.08	553.33	0.25	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0812	24.36	0.00	0.00	0.00	0.00	0.00	24.36	1224.39	0.09	577.61	0.26	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1312	39.35	0.00	0.00	0.00	0.00	0.00	39.35	1231.51	0.09	616.88	0.27	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1312	39.35	0.00	0.00	0.00	0.00	0.00	39.35	1243.04	0.09	656.15	0.29	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1812	54.35	0.00	0.00	0.00	0.00	0.00	54.35	1254.56	0.09	710.41	0.32	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1812	54.35	0.00	0.00	0.00	0.00	0.00	54.35	1270.49	0.09	764.67	0.34	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2312	69.35	0.00	0.00	0.00	0.00	0.00	69.35	1286.41	0.09	833.93	0.37	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2811	84.34	0.00	0.00	0.00	0.00	0.00	84.34	1306.73	0.09	918.18	0.41	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3311	99.34	0.00	0.00	0.00	0.00	0.00	99.34	1331.46	0.09	1017.43	0.45	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3811	114.33	0.00	0.00	0.00	0.00	0.00	114.33	1360.59	0.09	1131.67	0.50	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4311	129.33	0.00	0.00	0.00	0.00	0.00	129.33	1394.11	0.10	1260.90	0.56	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4311	129.33	0.00	0.00	0.00	0.00	0.00	129.33	1432.04	0.10	1390.13	0.62	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1469.96	0.10	1534.35	0.68	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5311	159.32	0.00	0.00	0.00	0.00	0.00	159.32	1512.29	0.11	1693.57	0.75	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5811	174.32	0.00	0.00	0.00	0.00	0.00	174.32	1559.02	0.11	1867.78	0.83	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5811	174.32	0.00	0.00	0.00	0.00	0.00	174.32	1610.14	0.11	2041.99	0.91	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6310	189.31	0.00	0.00	0.00	0.00	0.00	189.31	1661.27	0.12	2231.18	0.99	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6810	204.31	0.00	0.00	0.00	0.00	0.00	204.31	1716.79	0.12	2435.37	1.08	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9310	279.29	0.00	0.00	0.00	0.00	0.00	279.29	1776.71	0.12	2714.54	1.21	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1809	354.27	0.00	0.00	0.00	0.00	0.00	354.27	1858.64	0.13	3068.68	1.36	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3309	399.26	0.00	0.00	0.00	0.00	0.00	399.26	1962.57	0.14	3467.80	1.54	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4808	444.24	0.00	0.00	0.00	0.00	0.00	444.24	2079.70	0.14	3911.90	1.74	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7307	519.22	0.00	0.00	0.00	0.00	0.00	519.22	2210.03	0.15	4430.97	1.97	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1806	654.19	0.00	0.00	0.00	0.00	0.00	654.19	2362.37	0.16	5084.99	2.26	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3311	99.34	0.00	0.00	0.00	0.00	0.00	99.34	2554.30	0.18	5184.15	2.31	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0450	13.50	0.00	0.00	0.00	0.00	0.00	13.50	2583.40	0.18	5197.47	2.31	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	2587.31	0.18	5206.29	2.31	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0250	7.50	0.00	0.00	0.00	0.00	0.00	7.50	2589.90	0.18	5213.60	2.32	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0150	4.50	0.00	0.00	0.00	0.00	0.00	4.50	2592.05	0.18	5217.92	2.32	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0100	3.00	0.00	0.00	0.00	0.00	0.00	3.00	2593.31	0.18	5220.74	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.14	0.18	5220.56	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.09	0.18	5220.38	2.32	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2594.04	0.18	5220.20	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.98	0.18	5220.02	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.93	0.18	5219.84	2.32	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.88	0.18	5219.66	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.83	0.18	5219.48	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.77	0.18	5219.30	2.32	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.72	0.18	5219.12	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.67	0.18	5218.94	2.32	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.61	0.18	5218.76	2.32	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2593.56	0.18	5218.58	2.32	0.00	0.00
					Total volume (cf)			5227.70								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1062.00	0.22	3.78	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1063.11	0.22	9.55	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1064.80	0.22	15.32	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1066.50	0.22	23.09	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1068.78	0.22	28.86	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1070.47	0.22	34.63	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1072.16	0.22	40.41	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1073.86	0.22	48.17	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1076.14	0.22	55.94	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1078.42	0.22	63.71	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1080.70	0.23	73.48	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1083.56	0.23	83.24	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1086.43	0.23	93.00	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1089.29	0.23	102.77	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1092.16	0.23	112.53	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1095.02	0.23	124.29	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1098.48	0.23	136.05	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1101.93	0.23	149.81	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1105.96	0.23	163.57	0.07	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1110.00	0.23	179.32	0.08	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0133	11.99	0.00	0.00	0.00	0.00	0.00	11.99	1114.63	0.23	191.08	0.08	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0155	13.99	0.00	0.00	0.00	0.00	0.00	13.99	1118.08	0.23	204.83	0.09	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1122.11	0.23	220.58	0.10	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0178	15.99	0.00	0.00	0.00	0.00	0.00	15.99	1126.73	0.23	236.33	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0200	17.98	0.00	0.00	0.00	0.00	0.00	17.98	1131.36	0.24	254.08	0.11	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0200	17.98	0.00	0.00	0.00	0.00	0.00	17.98	1136.57	0.24	271.83	0.12	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1141.77	0.24	291.57	0.13	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1147.57	0.24	311.31	0.14	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0222	19.98	0.00	0.00	0.00	0.00	0.00	19.98	1153.36	0.24	331.05	0.15	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0244	21.98	0.00	0.00	0.00	0.00	0.00	21.98	1159.15	0.24	352.79	0.16	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0266	23.98	0.00	0.00	0.00	0.00	0.00	23.98	1165.53	0.24	376.53	0.17	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0289	25.98	0.00	0.00	0.00	0.00	0.00	25.98	1172.50	0.24	402.26	0.18	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1180.05	0.25	431.98	0.19	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1188.78	0.25	461.71	0.21	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0355	31.97	0.00	0.00	0.00	0.00	0.00	31.97	1197.50	0.25	493.43	0.22	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0377	33.97	0.00	0.00	0.00	0.00	0.00	33.97	1206.81	0.25	527.15	0.23	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1216.70	0.25	564.86	0.25	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1227.77	0.26	604.56	0.27	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0466	41.96	0.00	0.00	0.00	0.00	0.00	41.96	1239.42	0.26	646.27	0.29	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0488	43.96	0.00	0.00	0.00	0.00	0.00	43.96	1251.66	0.26	689.96	0.31	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1264.49	0.26	719.67	0.32	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0333	29.97	0.00	0.00	0.00	0.00	0.00	29.97	1273.20	0.27	749.38	0.33	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1281.92	0.27	789.07	0.35	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0444	39.96	0.00	0.00	0.00	0.00	0.00	39.96	1293.57	0.27	828.77	0.37	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1305.22	0.27	866.46	0.39	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1316.28	0.27	904.15	0.40	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0377	33.97	0.00	0.00	0.00	0.00	0.00	33.97	1327.34	0.28	937.84	0.42	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0400	35.97	0.00	0.00	0.00	0.00	0.00	35.97	1337.23	0.28	973.53	0.43	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0555	49.95	0.00	0.00	0.00	0.00	0.00	49.95	1347.70	0.28	1023.20	0.45	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0577	51.95	0.00	0.00	0.00	0.00	0.00	51.95	1362.28	0.28	1074.87	0.48	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0684	61.56	0.00	0.00	0.00	0.00	0.00	61.56	1377.44	0.29	1136.14	0.51	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.0989	89.05	0.00	0.00	0.00	0.00	0.00	89.05	1395.43	0.29	1224.90	0.54	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2182	196.38	0.00	0.00	0.00	0.00	0.00	196.38	1421.48	0.30	1420.99	0.63	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2263	203.71	0.00	0.00	0.00	0.00	0.00	203.71	1479.02	0.31	1624.39	0.72	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1538.71	0.32	1670.03	0.74	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1552.11	0.32	1715.66	0.76	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0947	85.25	0.00	0.00	0.00	0.00	0.00	85.25	1565.50	0.33	1800.59	0.80	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0802	72.21	0.00	0.00	0.00	0.00	0.00	72.21	1590.42	0.33	1872.46	0.83	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0878	79.05	0.00	0.00	0.00	0.00	0.00	79.05	1611.52	0.34	1951.18	0.87	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0731	65.81	0.00	0.00	0.00	0.00	0.00	65.81	1634.62	0.34	2016.64	0.90	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0583	52.46	0.00	0.00	0.00	0.00	0.00	52.46	1653.83	0.34	2068.76	0.92	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0511	45.96	0.00	0.00	0.00	0.00	0.00	45.96	1669.12	0.35	2114.37	0.94	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1682.51	0.35	2151.98	0.96	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0422	37.96	0.00	0.00	0.00	0.00	0.00	37.96	1693.55	0.35	2189.60	0.97	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1704.59	0.36	2197.23	0.98	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1706.83	0.36	2204.87	0.98	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1709.07	0.36	2210.51	0.98	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1710.72	0.36	2216.15	0.99	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1712.38	0.36	2225.78	0.99	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1715.20	0.36	2235.41	0.99	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0111	9.99	0.00	0.00	0.00	0.00	0.00	9.99	1718.03	0.36	2245.05	1.00	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1720.86	0.36	2252.68	1.00	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1723.10	0.36	2260.31	1.01	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1725.34	0.36	2267.95	1.01	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1727.58	0.36	2273.58	1.01	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1729.23	0.36	2277.22	1.01	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1730.30	0.36	2282.85	1.02	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0089	7.99	0.00	0.00	0.00	0.00	0.00	7.99	1731.95	0.36	2290.48	1.02	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1734.19	0.36	2296.12	1.02	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1735.85	0.36	2299.75	1.02	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1736.91	0.36	2305.38	1.03	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1738.57	0.36	2311.02	1.03	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1740.22	0.36	2316.65	1.03	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1741.87	0.36	2320.28	1.03	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1742.94	0.36	2325.91	1.03	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1744.59	0.36	2329.55	1.04	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1745.66	0.36	2335.18	1.04	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1747.31	0.36	2338.81	1.04	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0067	5.99	0.00	0.00	0.00	0.00	0.00	5.99	1748.38	0.36	2344.44	1.04	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1750.03	0.36	2348.07	1.04	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1751.09	0.36	2351.70	1.05	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1752.16	0.37	2355.33	1.05	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1753.22	0.37	2358.96	1.05	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1754.29	0.37	2362.59	1.05	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1755.36	0.37	2366.23	1.05	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0044	4.00	0.00	0.00	0.00	0.00	0.00	4.00	1756.42	0.37	2369.86	1.05	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1757.49	0.37	2369.49	1.05	0.00	0.00
					Total volume (cf)		2398.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.07ac+0.09ac typ street frontage=1.16ac

5/7/2024 LOT 2

Drainage Area (ac.)	1.1600	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5933	177.98	0.00	0.00	0.00	0.00	0.00	177.98	1078.00	0.07	177.90	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9653	289.60	0.00	0.00	0.00	0.00	0.00	289.60	1124.55	0.08	467.43	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0668	320.05	0.00	0.00	0.00	0.00	0.00	320.05	1200.32	0.08	787.39	0.38	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9992	299.75	0.00	0.00	0.00	0.00	0.00	299.75	1284.05	0.09	1087.05	0.53	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5742	472.27	0.00	0.00	0.00	0.00	0.00	472.27	1362.47	0.09	1559.23	0.76	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8110	543.30	0.00	0.00	0.00	0.00	0.00	543.30	1486.03	0.10	2102.43	1.02	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1831	654.93	0.00	0.00	0.00	0.00	0.00	654.93	1628.18	0.11	2757.25	1.34	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3861	715.82	0.00	0.00	0.00	0.00	0.00	715.82	1799.53	0.12	3472.94	1.69	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5024	1050.71	0.00	0.00	0.00	0.00	0.00	1050.71	1986.82	0.14	4523.51	2.20	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.2952	1588.55	0.00	0.00	0.00	0.00	0.00	1588.55	2261.74	0.16	6111.90	2.97	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.7878	1436.33	0.00	0.00	0.00	0.00	0.00	1436.33	2677.40	0.19	7548.05	3.66	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7624	228.72	0.00	0.00	0.00	0.00	0.00	228.72	3053.22	0.21	7776.55	3.78	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3113.02	0.22	7776.33	3.78	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3112.96	0.22	7776.12	3.78	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3112.90	0.22	7775.90	3.78	0.00	0.00	
					Total volume (cf)			7778.00								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0566	16.97	0.00	0.00	0.00	0.00	0.00	16.97	1078.00	0.07	16.89	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0566	16.97	0.00	0.00	0.00	0.00	0.00	16.97	1082.42	0.08	33.79	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1086.84	0.08	48.07	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1090.58	0.08	67.58	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1095.68	0.08	87.08	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1100.79	0.08	124.47	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1110.57	0.08	143.97	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1115.67	0.08	181.35	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1125.46	0.08	218.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0653	19.58	0.00	0.00	0.00	0.00	0.00	19.58	1135.24	0.08	238.24	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0696	20.89	0.00	0.00	0.00	0.00	0.00	20.89	1140.34	0.08	259.04	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	1145.79	0.08	296.42	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1155.57	0.08	386.02	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1179.02	0.08	475.61	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2989	89.67	0.00	0.00	0.00	0.00	0.00	89.67	1202.46	0.08	565.20	0.27	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2119	63.57	0.00	0.00	0.00	0.00	0.00	63.57	1225.91	0.09	628.68	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4730	141.89	0.00	0.00	0.00	0.00	0.00	141.89	1242.52	0.09	770.49	0.37	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5165	154.94	0.00	0.00	0.00	0.00	0.00	154.94	1279.63	0.09	925.34	0.45	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3859	115.78	0.00	0.00	0.00	0.00	0.00	115.78	1320.15	0.09	1041.03	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5165	154.94	0.00	0.00	0.00	0.00	0.00	154.94	1350.42	0.09	1195.88	0.58	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7775	233.26	0.00	0.00	0.00	0.00	0.00	233.26	1390.94	0.10	1429.04	0.69	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6905	207.16	0.00	0.00	0.00	0.00	0.00	207.16	1451.96	0.10	1636.10	0.79	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6035	181.05	0.00	0.00	0.00	0.00	0.00	181.05	1506.14	0.10	1817.04	0.88	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6470	194.10	0.00	0.00	0.00	0.00	0.00	194.10	1553.50	0.11	2011.04	0.98	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6905	207.16	0.00	0.00	0.00	0.00	0.00	207.16	1604.26	0.11	2218.08	1.08	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1691	350.74	0.00	0.00	0.00	0.00	0.00	350.74	1658.44	0.12	2568.71	1.25	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5172	455.17	0.00	0.00	0.00	0.00	0.00	455.17	1750.20	0.12	3023.76	1.47	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8646	259.37	0.00	0.00	0.00	0.00	0.00	259.37	1869.28	0.13	3283.00	1.59	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3004	690.13	0.00	0.00	0.00	0.00	0.00	690.13	1937.12	0.13	3973.00	1.93	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5180	755.40	0.00	0.00	0.00	0.00	0.00	755.40	2117.68	0.15	4728.26	2.30	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9096	872.88	0.00	0.00	0.00	0.00	0.00	872.88	2315.32	0.16	5600.98	2.72	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9088	572.65	0.00	0.00	0.00	0.00	0.00	572.65	2543.70	0.18	6173.46	3.00	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2119	63.57	0.00	0.00	0.00	0.00	0.00	63.57	2693.51	0.19	6236.84	3.03	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	2710.10	0.19	6274.11	3.05	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1249	37.46	0.00	0.00	0.00	0.00	0.00	37.46	2719.85	0.19	6311.38	3.06	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0261	7.83	0.00	0.00	0.00	0.00	0.00	7.83	2729.60	0.19	6319.02	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.60	0.19	6318.83	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.55	0.19	6318.64	3.07	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.50	0.19	6318.45	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.45	0.19	6318.26	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.40	0.19	6318.07	3.07	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.35	0.19	6317.89	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.30	0.19	6317.70	3.07	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2731.26	0.19	6317.51	3.07	0.00	0.00
					Total volume (cf)		6322.90								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0266	7.98	0.00	0.00	0.00	0.00	0.00	7.98	1078.00	0.07	7.90	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1080.07	0.08	17.40	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1082.55	0.08	26.91	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1085.04	0.08	36.41	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	1087.53	0.08	45.90	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1090.01	0.08	57.00	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1092.92	0.08	68.10	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1095.82	0.08	79.19	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1098.72	0.08	90.29	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1101.63	0.08	101.38	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	1104.53	0.08	112.48	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1107.43	0.08	125.17	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1110.75	0.08	137.86	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1114.07	0.08	150.55	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1117.40	0.08	163.23	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1120.72	0.08	175.92	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1124.04	0.08	188.61	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1127.36	0.08	201.30	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1130.68	0.08	213.99	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1134.00	0.08	226.68	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1137.32	0.08	239.37	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1140.64	0.08	252.06	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1143.96	0.08	264.74	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1147.28	0.08	279.03	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0426	12.77	0.00	0.00	0.00	0.00	0.00	12.77	1151.02	0.08	291.71	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1154.34	0.08	306.00	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1158.08	0.08	320.28	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1161.81	0.08	334.56	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1165.55	0.08	348.84	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1169.29	0.08	363.13	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1173.02	0.08	377.41	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	1176.76	0.08	391.69	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1180.50	0.08	407.57	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1184.65	0.08	423.44	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1188.81	0.08	439.32	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1192.96	0.08	455.19	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0532	15.96	0.00	0.00	0.00	0.00	0.00	15.96	1197.12	0.08	471.07	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1201.27	0.08	488.54	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1205.84	0.08	506.01	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0585	17.55	0.00	0.00	0.00	0.00	0.00	17.55	1210.42	0.08	523.48	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0638	19.15	0.00	0.00	0.00	0.00	0.00	19.15	1214.99	0.08	542.55	0.26	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0692	20.75	0.00	0.00	0.00	0.00	0.00	20.75	1219.98	0.08	563.21	0.27	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0864	25.92	0.00	0.00	0.00	0.00	0.00	25.92	1225.38	0.09	589.05	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0864	25.92	0.00	0.00	0.00	0.00	0.00	25.92	1232.15	0.09	614.89	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1396	41.88	0.00	0.00	0.00	0.00	0.00	41.88	1238.91	0.09	656.68	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1396	41.88	0.00	0.00	0.00	0.00	0.00	41.88	1249.85	0.09	698.48	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1928	57.84	0.00	0.00	0.00	0.00	0.00	57.84	1260.78	0.09	756.23	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1928	57.84	0.00	0.00	0.00	0.00	0.00	57.84	1275.90	0.09	813.98	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2460	73.80	0.00	0.00	0.00	0.00	0.00	73.80	1291.01	0.09	887.69	0.43	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2992	89.76	0.00	0.00	0.00	0.00	0.00	89.76	1310.30	0.09	977.36	0.47	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3524	105.72	0.00	0.00	0.00	0.00	0.00	105.72	1333.76	0.09	1082.99	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4056	121.68	0.00	0.00	0.00	0.00	0.00	121.68	1361.40	0.09	1204.57	0.58	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4588	137.64	0.00	0.00	0.00	0.00	0.00	137.64	1393.22	0.10	1342.11	0.65	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4588	137.64	0.00	0.00	0.00	0.00	0.00	137.64	1429.21	0.10	1479.64	0.72	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5120	153.59	0.00	0.00	0.00	0.00	0.00	153.59	1465.20	0.10	1633.14	0.79	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5652	169.55	0.00	0.00	0.00	0.00	0.00	169.55	1505.37	0.10	1802.59	0.88	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6184	185.51	0.00	0.00	0.00	0.00	0.00	185.51	1549.71	0.11	1987.99	0.97	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6184	185.51	0.00	0.00	0.00	0.00	0.00	185.51	1598.23	0.11	2173.39	1.06	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6716	201.47	0.00	0.00	0.00	0.00	0.00	201.47	1646.75	0.11	2374.75	1.15	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7248	217.43	0.00	0.00	0.00	0.00	0.00	217.43	1699.44	0.12	2592.06	1.26	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9907	297.22	0.00	0.00	0.00	0.00	0.00	297.22	1756.31	0.12	2889.16	1.40	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2567	377.02	0.00	0.00	0.00	0.00	0.00	377.02	1834.06	0.13	3266.06	1.59	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4163	424.90	0.00	0.00	0.00	0.00	0.00	424.90	1932.68	0.13	3690.82	1.79	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5759	472.77	0.00	0.00	0.00	0.00	0.00	472.77	2043.84	0.14	4163.45	2.02	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8419	552.57	0.00	0.00	0.00	0.00	0.00	552.57	2167.52	0.15	4715.87	2.29	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3207	696.20	0.00	0.00	0.00	0.00	0.00	696.20	2312.08	0.16	5411.91	2.63	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3524	105.72	0.00	0.00	0.00	0.00	0.00	105.72	2494.22	0.17	5517.45	2.68	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0479	14.36	0.00	0.00	0.00	0.00	0.00	14.36	2521.84	0.18	5531.64	2.69	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0319	9.58	0.00	0.00	0.00	0.00	0.00	9.58	2525.55	0.18	5541.04	2.69	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0266	7.98	0.00	0.00	0.00	0.00	0.00	7.98	2528.01	0.18	5548.84	2.69	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0160	4.79	0.00	0.00	0.00	0.00	0.00	4.79	2530.06	0.18	5553.45	2.70	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0106	3.19	0.00	0.00	0.00	0.00	0.00	3.19	2531.26	0.18	5556.47	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2532.05	0.18	5556.29	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2532.01	0.18	5556.12	2.70	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.96	0.18	5555.94	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.91	0.18	5555.77	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.87	0.18	5555.59	2.70	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.82	0.18	5555.41	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.78	0.18	5555.24	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.73	0.18	5555.06	2.70	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.68	0.18	5554.89	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.64	0.18	5554.71	2.70	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.59	0.18	5554.54	2.70	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2531.55	0.18	5554.36	2.70	0.00	0.00
					Total volume (cf)			5563.43								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1078.00	0.22	4.03	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1079.05	0.22	10.18	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1080.66	0.23	16.34	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1082.28	0.23	24.62	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1084.44	0.23	30.77	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1086.05	0.23	36.92	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1087.66	0.23	43.08	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1089.27	0.23	51.36	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1091.44	0.23	59.63	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1093.61	0.23	67.91	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1095.77	0.23	78.32	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1098.49	0.23	88.72	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1101.22	0.23	99.12	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1103.94	0.23	109.52	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1106.66	0.23	119.93	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1109.38	0.23	132.45	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1112.66	0.23	144.98	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1115.94	0.23	159.63	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1119.77	0.23	174.29	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1123.61	0.23	191.06	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0142	12.76	0.00	0.00	0.00	0.00	0.00	12.76	1128.00	0.23	203.59	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0165	14.89	0.00	0.00	0.00	0.00	0.00	14.89	1131.28	0.24	218.24	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1135.11	0.24	235.01	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0189	17.01	0.00	0.00	0.00	0.00	0.00	17.01	1139.50	0.24	251.79	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0213	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1143.89	0.24	270.69	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0213	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1148.83	0.24	289.58	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1153.78	0.24	310.61	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1159.28	0.24	331.63	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0236	21.26	0.00	0.00	0.00	0.00	0.00	21.26	1164.78	0.24	352.65	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0260	23.39	0.00	0.00	0.00	0.00	0.00	23.39	1170.28	0.24	375.80	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0284	25.52	0.00	0.00	0.00	0.00	0.00	25.52	1176.34	0.25	401.07	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0307	27.64	0.00	0.00	0.00	0.00	0.00	27.64	1182.96	0.25	428.47	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1190.12	0.25	460.12	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1198.41	0.25	491.77	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0378	34.02	0.00	0.00	0.00	0.00	0.00	34.02	1206.69	0.25	525.54	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0402	36.15	0.00	0.00	0.00	0.00	0.00	36.15	1215.53	0.25	561.43	0.27	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1224.92	0.26	601.58	0.29	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1235.43	0.26	643.85	0.31	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0496	44.66	0.00	0.00	0.00	0.00	0.00	44.66	1246.49	0.26	688.25	0.33	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0520	46.78	0.00	0.00	0.00	0.00	0.00	46.78	1258.11	0.26	734.77	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1270.28	0.26	766.40	0.37	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0354	31.90	0.00	0.00	0.00	0.00	0.00	31.90	1278.56	0.27	798.03	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1286.83	0.27	840.29	0.41	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0473	42.53	0.00	0.00	0.00	0.00	0.00	42.53	1297.89	0.27	882.55	0.43	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1308.95	0.27	922.68	0.45	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1319.45	0.27	962.81	0.47	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0402	36.15	0.00	0.00	0.00	0.00	0.00	36.15	1329.95	0.28	998.68	0.48	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0425	38.28	0.00	0.00	0.00	0.00	0.00	38.28	1339.34	0.28	1036.68	0.50	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0591	53.16	0.00	0.00	0.00	0.00	0.00	53.16	1349.28	0.28	1089.56	0.53	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0614	55.29	0.00	0.00	0.00	0.00	0.00	55.29	1363.12	0.28	1144.56	0.56	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0728	65.51	0.00	0.00	0.00	0.00	0.00	65.51	1377.52	0.29	1209.79	0.59	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.1053	94.77	0.00	0.00	0.00	0.00	0.00	94.77	1394.58	0.29	1304.27	0.63	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2322	208.99	0.00	0.00	0.00	0.00	0.00	208.99	1419.31	0.30	1512.97	0.73	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2409	216.79	0.00	0.00	0.00	0.00	0.00	216.79	1473.92	0.31	1729.45	0.84	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1530.57	0.32	1778.04	0.86	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1543.29	0.32	1826.63	0.89	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.1008	90.72	0.00	0.00	0.00	0.00	0.00	90.72	1556.00	0.32	1917.03	0.93	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0854	76.85	0.00	0.00	0.00	0.00	0.00	76.85	1579.66	0.33	1993.55	0.97	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0935	84.13	0.00	0.00	0.00	0.00	0.00	84.13	1599.68	0.33	2077.34	1.01	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0778	70.03	0.00	0.00	0.00	0.00	0.00	70.03	1621.61	0.34	2147.03	1.04	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0620	55.83	0.00	0.00	0.00	0.00	0.00	55.83	1639.85	0.34	2202.52	1.07	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0543	48.91	0.00	0.00	0.00	0.00	0.00	48.91	1654.37	0.34	2251.09	1.09	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1667.08	0.35	2291.14	1.11	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0449	40.40	0.00	0.00	0.00	0.00	0.00	40.40	1677.56	0.35	2331.20	1.13	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1688.04	0.35	2339.35	1.14	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1690.18	0.35	2347.50	1.14	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1692.31	0.35	2353.53	1.14	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1693.89	0.35	2359.56	1.15	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1695.46	0.35	2369.84	1.15	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1698.15	0.35	2380.11	1.16	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0118	10.63	0.00	0.00	0.00	0.00	0.00	10.63	1700.84	0.35	2390.39	1.16	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1703.53	0.35	2398.54	1.16	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1705.67	0.36	2406.69	1.17	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1707.80	0.36	2414.84	1.17	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1709.93	0.36	2420.87	1.18	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1711.51	0.36	2424.76	1.18	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1712.53	0.36	2430.79	1.18	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0095	8.51	0.00	0.00	0.00	0.00	0.00	8.51	1714.10	0.36	2438.93	1.18	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1716.24	0.36	2444.96	1.19	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1717.81	0.36	2448.85	1.19	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1718.83	0.36	2454.87	1.19	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1720.41	0.36	2460.89	1.19	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1721.98	0.36	2466.91	1.20	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1723.56	0.36	2470.81	1.20	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1724.58	0.36	2476.83	1.20	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1726.15	0.36	2480.72	1.20	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1727.17	0.36	2486.74	1.21	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1728.75	0.36	2490.63	1.21	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0071	6.38	0.00	0.00	0.00	0.00	0.00	6.38	1729.77	0.36	2496.65	1.21	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1731.34	0.36	2500.55	1.21	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1732.36	0.36	2504.44	1.22	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1733.38	0.36	2508.33	1.22	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1734.40	0.36	2512.22	1.22	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1735.41	0.36	2516.11	1.22	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1736.43	0.36	2520.00	1.22	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0047	4.25	0.00	0.00	0.00	0.00	0.00	4.25	1737.45	0.36	2523.89	1.23	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1738.47	0.36	2523.53	1.23	0.00	0.00
						Total volume (cf)		2552.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 3

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 4

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.09ac+0.09ac typ street frontage=1.18ac

5/7/2024 LOT 5

Drainage Area (ac.)	1.1800	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6035	181.04	0.00	0.00	0.00	0.00	0.00	181.04	1078.00	0.07	180.97	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9820	294.60	0.00	0.00	0.00	0.00	0.00	294.60	1125.36	0.08	475.49	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0852	325.57	0.00	0.00	0.00	0.00	0.00	325.57	1202.43	0.08	800.97	0.39	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0164	304.92	0.00	0.00	0.00	0.00	0.00	304.92	1287.60	0.09	1105.80	0.54	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6014	480.41	0.00	0.00	0.00	0.00	0.00	480.41	1367.37	0.09	1586.11	0.77	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.8422	552.67	0.00	0.00	0.00	0.00	0.00	552.67	1493.06	0.10	2138.68	1.04	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.2207	666.22	0.00	0.00	0.00	0.00	0.00	666.22	1637.66	0.11	2804.79	1.36	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.4272	728.16	0.00	0.00	0.00	0.00	0.00	728.16	1811.98	0.13	3532.83	1.72	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.5627	1068.82	0.00	0.00	0.00	0.00	0.00	1068.82	2002.49	0.14	4601.51	2.23	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.3865	1615.94	0.00	0.00	0.00	0.00	0.00	1615.94	2282.15	0.16	6217.29	3.02	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.8703	1461.09	0.00	0.00	0.00	0.00	0.00	1461.09	2704.98	0.19	7678.20	3.73	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7755	232.66	0.00	0.00	0.00	0.00	0.00	232.66	3087.28	0.21	7910.64	3.84	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.11	0.22	7910.43	3.84	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3148.05	0.22	7910.21	3.84	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3147.99	0.22	7909.99	3.84	0.00	0.00	
					Total volume (cf)			7912.11								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1078.00	0.07	17.19	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0575	17.26	0.00	0.00	0.00	0.00	0.00	17.26	1082.50	0.08	34.37	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1087.00	0.08	48.91	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1090.80	0.08	68.75	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1095.99	0.08	88.59	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1101.18	0.08	126.62	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1111.13	0.08	146.46	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1116.33	0.08	184.49	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1126.28	0.08	222.52	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0664	19.92	0.00	0.00	0.00	0.00	0.00	19.92	1136.23	0.08	242.36	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0708	21.25	0.00	0.00	0.00	0.00	0.00	21.25	1141.42	0.08	263.52	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	1146.96	0.08	301.55	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1156.91	0.08	392.69	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1180.76	0.08	483.83	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3041	91.22	0.00	0.00	0.00	0.00	0.00	91.22	1204.61	0.08	574.97	0.28	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	1228.46	0.09	639.54	0.31	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4811	144.33	0.00	0.00	0.00	0.00	0.00	144.33	1245.36	0.09	783.79	0.38	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1283.11	0.09	941.32	0.46	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3926	117.78	0.00	0.00	0.00	0.00	0.00	117.78	1324.33	0.09	1059.00	0.51	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5254	157.61	0.00	0.00	0.00	0.00	0.00	157.61	1355.13	0.09	1216.52	0.59	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7909	237.28	0.00	0.00	0.00	0.00	0.00	237.28	1396.35	0.10	1453.71	0.71	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1458.42	0.10	1664.34	0.81	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6139	184.17	0.00	0.00	0.00	0.00	0.00	184.17	1513.53	0.11	1848.40	0.90	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6582	197.45	0.00	0.00	0.00	0.00	0.00	197.45	1561.70	0.11	2045.74	0.99	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7024	210.73	0.00	0.00	0.00	0.00	0.00	210.73	1613.34	0.11	2256.36	1.10	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1893	356.79	0.00	0.00	0.00	0.00	0.00	356.79	1668.46	0.12	2613.03	1.27	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.5434	463.02	0.00	0.00	0.00	0.00	0.00	463.02	1761.80	0.12	3075.93	1.49	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8795	263.84	0.00	0.00	0.00	0.00	0.00	263.84	1882.93	0.13	3339.64	1.62	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.3401	702.03	0.00	0.00	0.00	0.00	0.00	702.03	1951.94	0.14	4041.54	1.96	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.5614	768.43	0.00	0.00	0.00	0.00	0.00	768.43	2135.62	0.15	4809.82	2.34	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.9598	887.93	0.00	0.00	0.00	0.00	0.00	887.93	2336.66	0.16	5697.59	2.77	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.9418	582.53	0.00	0.00	0.00	0.00	0.00	582.53	2568.98	0.18	6279.94	3.05	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2155	64.66	0.00	0.00	0.00	0.00	0.00	64.66	2721.37	0.19	6344.41	3.08	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2738.25	0.19	6382.33	3.10	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1270	38.11	0.00	0.00	0.00	0.00	0.00	38.11	2748.17	0.19	6420.24	3.12	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0266	7.97	0.00	0.00	0.00	0.00	0.00	7.97	2758.09	0.19	6428.02	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.13	0.19	6427.83	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.08	0.19	6427.64	3.12	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2760.02	0.19	6427.44	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.97	0.19	6427.25	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.92	0.19	6427.06	3.12	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.87	0.19	6426.87	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.82	0.19	6426.68	3.12	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2759.77	0.19	6426.49	3.12	0.00	0.00
					Total volume (cf)		6431.91								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	1078.00	0.07	8.04	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1080.10	0.08	17.71	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1082.63	0.08	27.37	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1085.16	0.08	37.04	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	1087.69	0.08	46.70	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1090.22	0.08	57.99	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1093.18	0.08	69.28	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1096.13	0.08	80.57	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1099.08	0.08	91.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1102.04	0.08	103.14	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0379	11.36	0.00	0.00	0.00	0.00	0.00	11.36	1104.99	0.08	114.43	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1107.94	0.08	127.34	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1111.32	0.08	140.25	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1114.70	0.08	153.16	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1118.08	0.08	166.07	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1121.46	0.08	178.98	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1124.84	0.08	191.89	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1128.21	0.08	204.80	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1131.59	0.08	217.70	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1134.97	0.08	230.61	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1138.35	0.08	243.52	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1141.73	0.08	256.43	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1145.10	0.08	269.34	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1148.48	0.08	283.87	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0433	12.99	0.00	0.00	0.00	0.00	0.00	12.99	1152.28	0.08	296.78	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1155.66	0.08	311.31	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1159.46	0.08	325.84	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1163.27	0.08	340.37	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1167.07	0.08	354.90	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1170.87	0.08	369.42	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1174.67	0.08	383.95	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	1178.48	0.08	398.48	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1182.28	0.08	414.63	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1186.50	0.08	430.79	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1190.73	0.08	446.94	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1194.96	0.08	463.09	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0541	16.23	0.00	0.00	0.00	0.00	0.00	16.23	1199.18	0.08	479.24	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1203.41	0.08	497.01	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1208.06	0.08	514.79	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0595	17.86	0.00	0.00	0.00	0.00	0.00	17.86	1212.71	0.08	532.56	0.26	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0649	19.48	0.00	0.00	0.00	0.00	0.00	19.48	1217.36	0.08	551.96	0.27	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1222.44	0.08	572.98	0.28	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1227.94	0.09	599.26	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0879	26.37	0.00	0.00	0.00	0.00	0.00	26.37	1234.82	0.09	625.55	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1241.70	0.09	668.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1420	42.60	0.00	0.00	0.00	0.00	0.00	42.60	1252.82	0.09	710.58	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1263.95	0.09	769.33	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1961	58.84	0.00	0.00	0.00	0.00	0.00	58.84	1279.32	0.09	828.08	0.40	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2502	75.07	0.00	0.00	0.00	0.00	0.00	75.07	1294.70	0.09	903.06	0.44	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3044	91.31	0.00	0.00	0.00	0.00	0.00	91.31	1314.32	0.09	994.28	0.48	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	1338.19	0.09	1101.73	0.53	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.4126	123.77	0.00	0.00	0.00	0.00	0.00	123.77	1366.31	0.09	1225.40	0.59	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1398.67	0.10	1365.32	0.66	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4667	140.01	0.00	0.00	0.00	0.00	0.00	140.01	1435.28	0.10	1505.23	0.73	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5208	156.24	0.00	0.00	0.00	0.00	0.00	156.24	1471.90	0.10	1661.37	0.81	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5749	172.48	0.00	0.00	0.00	0.00	0.00	172.48	1512.76	0.11	1833.74	0.89	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1557.86	0.11	2022.34	0.98	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6290	188.71	0.00	0.00	0.00	0.00	0.00	188.71	1607.22	0.11	2210.94	1.07	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6831	204.94	0.00	0.00	0.00	0.00	0.00	204.94	1656.57	0.12	2415.77	1.17	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7373	221.18	0.00	0.00	0.00	0.00	0.00	221.18	1710.17	0.12	2636.83	1.28	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	1.0078	302.35	0.00	0.00	0.00	0.00	0.00	302.35	1768.02	0.12	2939.06	1.43	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2784	383.52	0.00	0.00	0.00	0.00	0.00	383.52	1847.11	0.13	3322.45	1.61	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.4407	432.22	0.00	0.00	0.00	0.00	0.00	432.22	1947.44	0.14	3754.54	1.82	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.6031	480.92	0.00	0.00	0.00	0.00	0.00	480.92	2060.51	0.14	4235.32	2.06	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8736	562.09	0.00	0.00	0.00	0.00	0.00	562.09	2186.32	0.15	4797.26	2.33	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.3607	708.20	0.00	0.00	0.00	0.00	0.00	708.20	2333.38	0.16	5505.30	2.67	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3585	107.54	0.00	0.00	0.00	0.00	0.00	107.54	2518.66	0.17	5612.66	2.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0487	14.61	0.00	0.00	0.00	0.00	0.00	14.61	2546.76	0.18	5627.10	2.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0325	9.74	0.00	0.00	0.00	0.00	0.00	9.74	2550.54	0.18	5636.66	2.74	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0271	8.12	0.00	0.00	0.00	0.00	0.00	8.12	2553.04	0.18	5644.60	2.74	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0162	4.87	0.00	0.00	0.00	0.00	0.00	4.87	2555.12	0.18	5649.29	2.74	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0108	3.25	0.00	0.00	0.00	0.00	0.00	3.25	2556.34	0.18	5652.36	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.15	0.18	5652.19	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.10	0.18	5652.01	2.74	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.05	0.18	5651.83	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2557.01	0.18	5651.65	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.96	0.18	5651.48	2.74	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.91	0.18	5651.30	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.87	0.18	5651.12	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.82	0.18	5650.94	2.74	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.78	0.18	5650.77	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.73	0.18	5650.59	2.74	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.68	0.18	5650.41	2.74	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2556.64	0.18	5650.23	2.74	0.00	0.00
					Total volume (cf)			5659.35								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1078.00	0.22	4.10	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1079.07	0.22	10.37	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1080.71	0.23	16.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1082.35	0.23	25.06	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1084.56	0.23	31.32	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1086.20	0.23	37.58	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1087.84	0.23	43.85	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1089.47	0.23	52.27	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1091.68	0.23	60.70	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1093.88	0.23	69.12	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1096.09	0.23	79.71	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1098.86	0.23	90.30	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1101.63	0.23	100.88	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1104.40	0.23	111.47	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1107.17	0.23	122.05	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1109.94	0.23	134.80	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1113.28	0.23	147.55	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1116.61	0.23	162.46	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1120.51	0.23	177.36	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1124.41	0.23	194.43	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0144	12.98	0.00	0.00	0.00	0.00	0.00	12.98	1128.88	0.24	207.18	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0168	15.14	0.00	0.00	0.00	0.00	0.00	15.14	1132.22	0.24	222.08	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1136.12	0.24	239.15	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0192	17.30	0.00	0.00	0.00	0.00	0.00	17.30	1140.58	0.24	256.22	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1145.05	0.24	275.45	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0216	19.47	0.00	0.00	0.00	0.00	0.00	19.47	1150.08	0.24	294.68	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1155.11	0.24	316.07	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1160.71	0.24	337.46	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0240	21.63	0.00	0.00	0.00	0.00	0.00	21.63	1166.31	0.24	358.85	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0264	23.79	0.00	0.00	0.00	0.00	0.00	23.79	1171.91	0.24	382.40	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0288	25.96	0.00	0.00	0.00	0.00	0.00	25.96	1178.07	0.25	408.11	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0312	28.12	0.00	0.00	0.00	0.00	0.00	28.12	1184.80	0.25	435.98	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1192.09	0.25	468.18	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1200.52	0.25	500.38	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0385	34.61	0.00	0.00	0.00	0.00	0.00	34.61	1208.94	0.25	534.73	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1217.93	0.25	571.25	0.28	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1227.49	0.26	612.10	0.30	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1238.18	0.26	655.10	0.32	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0505	45.43	0.00	0.00	0.00	0.00	0.00	45.43	1249.43	0.26	700.27	0.34	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0529	47.59	0.00	0.00	0.00	0.00	0.00	47.59	1261.25	0.26	747.59	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1273.63	0.27	779.77	0.38	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0361	32.45	0.00	0.00	0.00	0.00	0.00	32.45	1282.06	0.27	811.95	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1290.48	0.27	854.95	0.42	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0481	43.26	0.00	0.00	0.00	0.00	0.00	43.26	1301.73	0.27	897.94	0.44	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1312.98	0.27	938.76	0.46	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1323.66	0.28	979.59	0.48	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0409	36.77	0.00	0.00	0.00	0.00	0.00	36.77	1334.34	0.28	1016.08	0.49	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0433	38.94	0.00	0.00	0.00	0.00	0.00	38.94	1343.89	0.28	1054.74	0.51	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0601	54.08	0.00	0.00	0.00	0.00	0.00	54.08	1354.01	0.28	1108.53	0.54	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0625	56.24	0.00	0.00	0.00	0.00	0.00	56.24	1368.09	0.29	1164.49	0.57	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0740	66.64	0.00	0.00	0.00	0.00	0.00	66.64	1382.73	0.29	1230.84	0.60	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1071	96.41	0.00	0.00	0.00	0.00	0.00	96.41	1400.09	0.29	1326.96	0.64	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2362	212.60	0.00	0.00	0.00	0.00	0.00	212.60	1425.25	0.30	1539.26	0.75	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2450	220.53	0.00	0.00	0.00	0.00	0.00	220.53	1480.80	0.31	1759.48	0.85	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1538.43	0.32	1808.91	0.88	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1551.37	0.32	1858.34	0.90	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1025	92.29	0.00	0.00	0.00	0.00	0.00	92.29	1564.30	0.33	1950.30	0.95	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0869	78.17	0.00	0.00	0.00	0.00	0.00	78.17	1588.37	0.33	2028.14	0.98	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0951	85.58	0.00	0.00	0.00	0.00	0.00	85.58	1608.74	0.34	2113.38	1.03	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0792	71.24	0.00	0.00	0.00	0.00	0.00	71.24	1631.04	0.34	2184.28	1.06	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0631	56.79	0.00	0.00	0.00	0.00	0.00	56.79	1649.60	0.34	2240.73	1.09	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0553	49.75	0.00	0.00	0.00	0.00	0.00	49.75	1664.37	0.35	2290.14	1.11	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1677.30	0.35	2330.89	1.13	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0457	41.10	0.00	0.00	0.00	0.00	0.00	41.10	1687.96	0.35	2371.64	1.15	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1698.63	0.35	2379.94	1.16	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1700.80	0.35	2388.23	1.16	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1702.97	0.35	2394.37	1.16	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1704.57	0.36	2400.50	1.17	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1706.18	0.36	2410.96	1.17	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1708.92	0.36	2421.42	1.18	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0120	10.82	0.00	0.00	0.00	0.00	0.00	10.82	1711.65	0.36	2431.88	1.18	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1714.39	0.36	2440.18	1.18	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1716.56	0.36	2448.47	1.19	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1718.73	0.36	2456.77	1.19	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1720.90	0.36	2462.90	1.20	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1722.51	0.36	2466.86	1.20	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1723.54	0.36	2472.99	1.20	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0096	8.65	0.00	0.00	0.00	0.00	0.00	8.65	1725.15	0.36	2481.29	1.20	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1727.32	0.36	2487.42	1.21	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1728.92	0.36	2491.38	1.21	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1729.96	0.36	2497.51	1.21	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1731.56	0.36	2503.64	1.22	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1733.17	0.36	2509.77	1.22	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1734.77	0.36	2513.73	1.22	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1735.81	0.36	2519.86	1.22	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1737.41	0.36	2523.83	1.23	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1738.45	0.36	2529.95	1.23	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1740.05	0.36	2533.92	1.23	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0072	6.49	0.00	0.00	0.00	0.00	0.00	6.49	1741.09	0.36	2540.04	1.23	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1742.69	0.36	2544.01	1.24	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1743.73	0.36	2547.97	1.24	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1744.77	0.36	2551.93	1.24	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1745.81	0.36	2555.89	1.24	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1746.84	0.36	2559.86	1.24	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1747.88	0.36	2563.82	1.24	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0048	4.33	0.00	0.00	0.00	0.00	0.00	4.33	1748.92	0.36	2567.78	1.25	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1749.95	0.36	2567.42	1.25	0.00	0.00
						Total volume (cf)	2596.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.16ac+0.09ac typ street frontage=1.25ac

			5/7/2024	LOT 6	
Drainage Area (ac.)	1.2500		JOB NUMBER 22106		
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3304 s.f. Bot. = 1123 s.f. Max. Depth (d)= 4 Max. storage= 8470.98 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6393	191.78	0.00	0.00	0.00	0.00	0.00	191.78	1123.00	0.08	191.71	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	1.0402	312.07	0.00	0.00	0.00	0.00	0.00	312.07	1172.36	0.08	503.70	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.1496	344.88	0.00	0.00	0.00	0.00	0.00	344.88	1252.69	0.09	848.49	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0767	323.01	0.00	0.00	0.00	0.00	0.00	323.01	1341.46	0.09	1171.40	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6964	508.91	0.00	0.00	0.00	0.00	0.00	508.91	1424.60	0.10	1680.21	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.9515	585.46	0.00	0.00	0.00	0.00	0.00	585.46	1555.60	0.11	2265.56	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.3525	705.75	0.00	0.00	0.00	0.00	0.00	705.75	1706.31	0.12	2971.19	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.5712	771.36	0.00	0.00	0.00	0.00	0.00	771.36	1887.98	0.13	3742.42	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.7741	1132.23	0.00	0.00	0.00	0.00	0.00	1132.23	2086.55	0.14	4874.50	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.7060	1711.80	0.00	0.00	0.00	0.00	0.00	1711.80	2378.02	0.17	6586.13	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	5.1592	1547.77	0.00	0.00	0.00	0.00	0.00	1547.77	2818.71	0.20	8133.71	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.8215	246.46	0.00	0.00	0.00	0.00	0.00	246.46	3217.16	0.22	8379.95	3.96	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.56	0.23	8379.72	3.96	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.50	0.23	8379.49	3.96	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.44	0.23	8379.26	3.96	0.00	0.00	
					Total volume (cf)			8381.47											Total Overflow (cf)		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1123.00	0.08	18.21	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1127.69	0.08	36.42	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0516	15.47	0.00	0.00	0.00	0.00	0.00	15.47	1132.38	0.08	51.81	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1136.34	0.08	72.83	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1141.75	0.08	93.85	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1147.16	0.08	134.14	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1157.54	0.08	155.16	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1162.95	0.08	195.44	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1173.32	0.08	235.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1183.69	0.08	256.75	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0750	22.51	0.00	0.00	0.00	0.00	0.00	22.51	1189.10	0.08	279.17	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1194.88	0.08	319.45	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1205.25	0.08	416.00	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1230.11	0.09	512.55	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1254.96	0.09	609.09	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	1279.82	0.09	677.50	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.5097	152.90	0.00	0.00	0.00	0.00	0.00	152.90	1297.44	0.09	830.31	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1336.78	0.09	997.18	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.4159	124.76	0.00	0.00	0.00	0.00	0.00	124.76	1379.74	0.10	1121.85	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1411.84	0.10	1288.72	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.8379	251.36	0.00	0.00	0.00	0.00	0.00	251.36	1454.80	0.10	1539.98	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1519.49	0.11	1763.10	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6503	195.10	0.00	0.00	0.00	0.00	0.00	195.10	1576.94	0.11	1958.09	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6972	209.16	0.00	0.00	0.00	0.00	0.00	209.16	1627.14	0.11	2167.13	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1680.97	0.12	2390.25	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.2599	377.96	0.00	0.00	0.00	0.00	0.00	377.96	1738.41	0.12	2768.08	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.6350	490.49	0.00	0.00	0.00	0.00	0.00	490.49	1835.69	0.13	3258.44	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.9316	279.49	0.00	0.00	0.00	0.00	0.00	279.49	1961.94	0.14	3537.80	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.4789	743.68	0.00	0.00	0.00	0.00	0.00	743.68	2033.87	0.14	4281.34	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.7134	814.01	0.00	0.00	0.00	0.00	0.00	814.01	2225.30	0.15	5095.19	2.41	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	3.1354	940.61	0.00	0.00	0.00	0.00	0.00	940.61	2434.85	0.17	6035.63	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	2.0569	617.08	0.00	0.00	0.00	0.00	0.00	617.08	2676.98	0.19	6652.53	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	2835.81	0.20	6720.83	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2853.39	0.20	6761.00	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2863.74	0.20	6801.17	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	2874.08	0.20	6809.41	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.20	0.20	6809.21	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.15	0.20	6809.01	3.22	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.10	0.20	6808.81	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.04	0.20	6808.61	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.99	0.20	6808.41	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.94	0.20	6808.21	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.89	0.20	6808.01	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.84	0.20	6807.81	3.21	0.00	0.00
					Total volume (cf)		6813.47								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	1123.00	0.08	8.52	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1125.19	0.08	18.76	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1127.83	0.08	29.00	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1130.47	0.08	39.24	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1133.10	0.08	49.48	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1135.74	0.08	61.44	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1138.82	0.08	73.40	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1141.90	0.08	85.36	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1144.98	0.08	97.32	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1148.06	0.08	109.27	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1151.13	0.08	121.23	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1154.21	0.08	134.91	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1157.73	0.08	148.59	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1161.26	0.08	162.26	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1164.78	0.08	175.94	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1168.30	0.08	189.62	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1171.82	0.08	203.29	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1175.34	0.08	216.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1178.86	0.08	230.65	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1182.38	0.08	244.32	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1185.90	0.08	258.00	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1189.43	0.08	271.67	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1192.95	0.08	285.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1196.47	0.08	300.74	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1200.43	0.08	314.41	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1203.95	0.08	329.81	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1207.91	0.08	345.20	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1211.88	0.08	360.60	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1215.84	0.08	375.99	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1219.80	0.08	391.38	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1223.77	0.08	406.77	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1227.73	0.09	422.17	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1231.69	0.09	439.28	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1236.10	0.09	456.39	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1240.50	0.09	473.50	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1244.91	0.09	490.61	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1249.32	0.09	507.72	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1253.72	0.09	526.55	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1258.57	0.09	545.38	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1263.42	0.09	564.21	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0688	20.64	0.00	0.00	0.00	0.00	0.00	20.64	1268.27	0.09	584.76	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0745	22.36	0.00	0.00	0.00	0.00	0.00	22.36	1273.56	0.09	607.02	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1279.29	0.09	634.87	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1286.46	0.09	662.72	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1293.63	0.09	707.76	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1305.22	0.09	752.80	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1316.82	0.09	815.04	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1332.84	0.09	877.27	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2651	79.53	0.00	0.00	0.00	0.00	0.00	79.53	1348.87	0.09	956.70	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3224	96.72	0.00	0.00	0.00	0.00	0.00	96.72	1369.32	0.10	1053.33	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	1394.20	0.10	1167.15	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.4371	131.12	0.00	0.00	0.00	0.00	0.00	131.12	1423.50	0.10	1298.17	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1457.24	0.10	1446.39	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1495.40	0.10	1594.60	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.5517	165.51	0.00	0.00	0.00	0.00	0.00	165.51	1533.56	0.11	1760.00	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.6090	182.71	0.00	0.00	0.00	0.00	0.00	182.71	1576.14	0.11	1942.60	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1623.16	0.11	2142.39	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1674.60	0.12	2342.18	1.11	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.7237	217.10	0.00	0.00	0.00	0.00	0.00	217.10	1726.03	0.12	2559.16	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.7810	234.30	0.00	0.00	0.00	0.00	0.00	234.30	1781.90	0.12	2793.34	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	1.0676	320.29	0.00	0.00	0.00	0.00	0.00	320.29	1842.19	0.13	3113.50	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.3542	406.27	0.00	0.00	0.00	0.00	0.00	406.27	1924.62	0.13	3519.64	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.5262	457.86	0.00	0.00	0.00	0.00	0.00	457.86	2029.19	0.14	3977.36	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.6982	509.45	0.00	0.00	0.00	0.00	0.00	509.45	2147.04	0.15	4486.66	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.9848	595.44	0.00	0.00	0.00	0.00	0.00	595.44	2278.17	0.16	5081.94	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	2.5007	750.21	0.00	0.00	0.00	0.00	0.00	750.21	2431.43	0.17	5831.99	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	2624.55	0.18	5945.73	2.81	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	2653.83	0.18	5961.02	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	2657.77	0.18	5971.15	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	2660.38	0.18	5979.57	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0172	5.16	0.00	0.00	0.00	0.00	0.00	5.16	2662.54	0.18	5984.54	2.83	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	2663.82	0.18	5987.80	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.66	0.19	5987.61	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.61	0.19	5987.43	2.83	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.57	0.19	5987.24	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.52	0.19	5987.06	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.47	0.19	5986.87	2.83	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.42	0.19	5986.69	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.37	0.19	5986.50	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.33	0.19	5986.32	2.83	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.28	0.19	5986.13	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.23	0.19	5985.95	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.18	0.19	5985.76	2.83	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.14	0.19	5985.58	2.83	0.00	0.00
					Total volume (cf)		5995.07									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1123.00	0.23	4.35	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1124.12	0.23	10.99	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1125.83	0.23	17.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1127.54	0.23	26.56	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1129.84	0.24	33.20	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1131.55	0.24	39.84	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1133.26	0.24	46.48	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1134.97	0.24	55.40	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1137.26	0.24	64.33	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1139.56	0.24	73.26	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1141.86	0.24	84.48	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1144.75	0.24	95.70	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1147.64	0.24	106.92	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1150.53	0.24	118.14	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1153.42	0.24	129.35	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1156.30	0.24	142.86	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1159.78	0.24	156.37	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1163.26	0.24	172.16	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1167.33	0.24	187.96	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1171.39	0.24	206.05	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1176.05	0.25	219.55	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1179.53	0.25	235.35	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1183.59	0.25	253.43	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1188.25	0.25	271.52	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1192.91	0.25	291.89	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1198.15	0.25	312.26	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1203.40	0.25	334.93	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1209.23	0.25	357.59	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1215.07	0.25	380.25	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0280	25.21	0.00	0.00	0.00	0.00	0.00	25.21	1220.90	0.25	405.20	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0306	27.50	0.00	0.00	0.00	0.00	0.00	27.50	1227.33	0.26	432.44	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0331	29.79	0.00	0.00	0.00	0.00	0.00	29.79	1234.34	0.26	461.98	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1241.94	0.26	496.09	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1250.73	0.26	530.20	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0407	36.66	0.00	0.00	0.00	0.00	0.00	36.66	1259.51	0.26	566.60	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1268.88	0.26	605.29	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1278.84	0.27	648.56	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1289.98	0.27	694.12	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0535	48.12	0.00	0.00	0.00	0.00	0.00	48.12	1301.71	0.27	741.97	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0560	50.41	0.00	0.00	0.00	0.00	0.00	50.41	1314.03	0.27	792.11	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1326.94	0.28	826.20	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1335.72	0.28	860.30	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1344.50	0.28	905.84	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1356.23	0.28	951.39	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1367.95	0.28	994.64	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1379.09	0.29	1037.89	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1390.22	0.29	1076.56	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0458	41.25	0.00	0.00	0.00	0.00	0.00	41.25	1400.18	0.29	1117.51	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0637	57.29	0.00	0.00	0.00	0.00	0.00	57.29	1410.72	0.29	1174.50	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0662	59.58	0.00	0.00	0.00	0.00	0.00	59.58	1425.40	0.30	1233.78	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0784	70.59	0.00	0.00	0.00	0.00	0.00	70.59	1440.66	0.30	1304.08	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1135	102.13	0.00	0.00	0.00	0.00	0.00	102.13	1458.76	0.30	1405.90	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2502	225.21	0.00	0.00	0.00	0.00	0.00	225.21	1484.97	0.31	1630.80	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2596	233.61	0.00	0.00	0.00	0.00	0.00	233.61	1542.88	0.32	1864.09	0.88	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1602.94	0.33	1916.46	0.90	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1616.43	0.34	1968.83	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1086	97.76	0.00	0.00	0.00	0.00	0.00	97.76	1629.91	0.34	2066.25	0.98	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0920	82.81	0.00	0.00	0.00	0.00	0.00	82.81	1654.99	0.34	2148.71	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.1007	90.65	0.00	0.00	0.00	0.00	0.00	90.65	1676.22	0.35	2239.02	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0839	75.47	0.00	0.00	0.00	0.00	0.00	75.47	1699.47	0.35	2314.13	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0668	60.16	0.00	0.00	0.00	0.00	0.00	60.16	1718.81	0.36	2373.93	1.12	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1734.21	0.36	2426.28	1.15	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1747.69	0.36	2469.45	1.17	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1758.80	0.37	2512.62	1.19	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1769.92	0.37	2521.42	1.19	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1772.18	0.37	2530.21	1.19	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1774.45	0.37	2536.72	1.20	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1776.12	0.37	2543.22	1.20	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1777.80	0.37	2554.31	1.21	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1780.65	0.37	2565.40	1.21	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1783.51	0.37	2576.48	1.22	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1786.36	0.37	2585.28	1.22	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1788.62	0.37	2594.07	1.22	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1790.89	0.37	2602.86	1.23	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1793.15	0.37	2609.36	1.23	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1794.82	0.37	2613.57	1.23	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1795.91	0.37	2620.07	1.24	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1797.58	0.37	2628.86	1.24	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1799.85	0.37	2635.36	1.24	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1801.52	0.38	2639.57	1.25	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1802.60	0.38	2646.07	1.25	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1804.28	0.38	2652.57	1.25	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1805.95	0.38	2659.06	1.26	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1807.62	0.38	2663.27	1.26	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1808.70	0.38	2669.77	1.26	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1810.38	0.38	2673.97	1.26	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1811.46	0.38	2680.47	1.27	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1813.13	0.38	2684.68	1.27	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1814.22	0.38	2691.17	1.27	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1815.89	0.38	2695.38	1.27	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1816.97	0.38	2699.58	1.27	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1818.05	0.38	2703.79	1.28	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1819.14	0.38	2707.99	1.28	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1820.22	0.38	2712.19	1.28	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1821.30	0.38	2716.40	1.28	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1822.38	0.38	2720.60	1.28	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1823.46	0.38	2720.22	1.28	0.00	0.00
					Total volume (cf)		2750.10									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.16ac+0.09ac typ street frontage=1.25ac

			5/7/2024	LOT 7	
Drainage Area (ac.)	1.2500		JOB NUMBER 22106		
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3304 s.f. Bot. = 1123 s.f. Max. Depth (d)= 4 Max. storage= 8470.98 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.6393	191.78	0.00	0.00	0.00	0.00	0.00	191.78	1123.00	0.08	191.71	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	1.0402	312.07	0.00	0.00	0.00	0.00	0.00	312.07	1172.36	0.08	503.70	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.1496	344.88	0.00	0.00	0.00	0.00	0.00	344.88	1252.69	0.09	848.49	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	1.0767	323.01	0.00	0.00	0.00	0.00	0.00	323.01	1341.46	0.09	1171.40	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.6964	508.91	0.00	0.00	0.00	0.00	0.00	508.91	1424.60	0.10	1680.21	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.9515	585.46	0.00	0.00	0.00	0.00	0.00	585.46	1555.60	0.11	2265.56	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.3525	705.75	0.00	0.00	0.00	0.00	0.00	705.75	1706.31	0.12	2971.19	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.5712	771.36	0.00	0.00	0.00	0.00	0.00	771.36	1887.98	0.13	3742.42	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.7741	1132.23	0.00	0.00	0.00	0.00	0.00	1132.23	2086.55	0.14	4874.50	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.7060	1711.80	0.00	0.00	0.00	0.00	0.00	1711.80	2378.02	0.17	6586.13	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	5.1592	1547.77	0.00	0.00	0.00	0.00	0.00	1547.77	2818.71	0.20	8133.71	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.8215	246.46	0.00	0.00	0.00	0.00	0.00	246.46	3217.16	0.22	8379.95	3.96	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.56	0.23	8379.72	3.96	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.50	0.23	8379.49	3.96	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3280.44	0.23	8379.26	3.96	0.00	0.00	
					Total volume (cf)			8381.47											Total Overflow (cf)		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1123.00	0.08	18.21	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0610	18.29	0.00	0.00	0.00	0.00	0.00	18.29	1127.69	0.08	36.42	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0516	15.47	0.00	0.00	0.00	0.00	0.00	15.47	1132.38	0.08	51.81	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1136.34	0.08	72.83	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1141.75	0.08	93.85	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1147.16	0.08	134.14	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1157.54	0.08	155.16	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1162.95	0.08	195.44	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1173.32	0.08	235.73	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0703	21.10	0.00	0.00	0.00	0.00	0.00	21.10	1183.69	0.08	256.75	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0750	22.51	0.00	0.00	0.00	0.00	0.00	22.51	1189.10	0.08	279.17	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	1194.88	0.08	319.45	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1205.25	0.08	416.00	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1230.11	0.09	512.55	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.3221	96.63	0.00	0.00	0.00	0.00	0.00	96.63	1254.96	0.09	609.09	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	1279.82	0.09	677.50	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.5097	152.90	0.00	0.00	0.00	0.00	0.00	152.90	1297.44	0.09	830.31	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1336.78	0.09	997.18	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.4159	124.76	0.00	0.00	0.00	0.00	0.00	124.76	1379.74	0.10	1121.85	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5565	166.96	0.00	0.00	0.00	0.00	0.00	166.96	1411.84	0.10	1288.72	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.8379	251.36	0.00	0.00	0.00	0.00	0.00	251.36	1454.80	0.10	1539.98	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1519.49	0.11	1763.10	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.6503	195.10	0.00	0.00	0.00	0.00	0.00	195.10	1576.94	0.11	1958.09	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6972	209.16	0.00	0.00	0.00	0.00	0.00	209.16	1627.14	0.11	2167.13	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.7441	223.23	0.00	0.00	0.00	0.00	0.00	223.23	1680.97	0.12	2390.25	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.2599	377.96	0.00	0.00	0.00	0.00	0.00	377.96	1738.41	0.12	2768.08	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.6350	490.49	0.00	0.00	0.00	0.00	0.00	490.49	1835.69	0.13	3258.44	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.9316	279.49	0.00	0.00	0.00	0.00	0.00	279.49	1961.94	0.14	3537.80	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.4789	743.68	0.00	0.00	0.00	0.00	0.00	743.68	2033.87	0.14	4281.34	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.7134	814.01	0.00	0.00	0.00	0.00	0.00	814.01	2225.30	0.15	5095.19	2.41	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	3.1354	940.61	0.00	0.00	0.00	0.00	0.00	940.61	2434.85	0.17	6035.63	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	2.0569	617.08	0.00	0.00	0.00	0.00	0.00	617.08	2676.98	0.19	6652.53	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2283	68.50	0.00	0.00	0.00	0.00	0.00	68.50	2835.81	0.20	6720.83	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2853.39	0.20	6761.00	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1346	40.37	0.00	0.00	0.00	0.00	0.00	40.37	2863.74	0.20	6801.17	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	2874.08	0.20	6809.41	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.20	0.20	6809.21	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.15	0.20	6809.01	3.22	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.10	0.20	6808.81	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2876.04	0.20	6808.61	3.22	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.99	0.20	6808.41	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.94	0.20	6808.21	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.89	0.20	6808.01	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2875.84	0.20	6807.81	3.21	0.00	0.00
					Total volume (cf)		6813.47								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	1123.00	0.08	8.52	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1125.19	0.08	18.76	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1127.83	0.08	29.00	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1130.47	0.08	39.24	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	1133.10	0.08	49.48	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1135.74	0.08	61.44	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1138.82	0.08	73.40	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1141.90	0.08	85.36	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1144.98	0.08	97.32	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1148.06	0.08	109.27	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0401	12.04	0.00	0.00	0.00	0.00	0.00	12.04	1151.13	0.08	121.23	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1154.21	0.08	134.91	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1157.73	0.08	148.59	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1161.26	0.08	162.26	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1164.78	0.08	175.94	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1168.30	0.08	189.62	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1171.82	0.08	203.29	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1175.34	0.08	216.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1178.86	0.08	230.65	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1182.38	0.08	244.32	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1185.90	0.08	258.00	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1189.43	0.08	271.67	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1192.95	0.08	285.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1196.47	0.08	300.74	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0459	13.76	0.00	0.00	0.00	0.00	0.00	13.76	1200.43	0.08	314.41	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1203.95	0.08	329.81	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1207.91	0.08	345.20	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1211.88	0.08	360.60	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1215.84	0.08	375.99	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1219.80	0.08	391.38	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1223.77	0.08	406.77	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	1227.73	0.09	422.17	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1231.69	0.09	439.28	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1236.10	0.09	456.39	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1240.50	0.09	473.50	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1244.91	0.09	490.61	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0573	17.20	0.00	0.00	0.00	0.00	0.00	17.20	1249.32	0.09	507.72	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1253.72	0.09	526.55	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1258.57	0.09	545.38	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0631	18.92	0.00	0.00	0.00	0.00	0.00	18.92	1263.42	0.09	564.21	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0688	20.64	0.00	0.00	0.00	0.00	0.00	20.64	1268.27	0.09	584.76	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0745	22.36	0.00	0.00	0.00	0.00	0.00	22.36	1273.56	0.09	607.02	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1279.29	0.09	634.87	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0931	27.93	0.00	0.00	0.00	0.00	0.00	27.93	1286.46	0.09	662.72	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1293.63	0.09	707.76	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1504	45.13	0.00	0.00	0.00	0.00	0.00	45.13	1305.22	0.09	752.80	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1316.82	0.09	815.04	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.2078	62.33	0.00	0.00	0.00	0.00	0.00	62.33	1332.84	0.09	877.27	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2651	79.53	0.00	0.00	0.00	0.00	0.00	79.53	1348.87	0.09	956.70	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.3224	96.72	0.00	0.00	0.00	0.00	0.00	96.72	1369.32	0.10	1053.33	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	1394.20	0.10	1167.15	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.4371	131.12	0.00	0.00	0.00	0.00	0.00	131.12	1423.50	0.10	1298.17	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1457.24	0.10	1446.39	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.4944	148.31	0.00	0.00	0.00	0.00	0.00	148.31	1495.40	0.10	1594.60	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.5517	165.51	0.00	0.00	0.00	0.00	0.00	165.51	1533.56	0.11	1760.00	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.6090	182.71	0.00	0.00	0.00	0.00	0.00	182.71	1576.14	0.11	1942.60	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1623.16	0.11	2142.39	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.6664	199.91	0.00	0.00	0.00	0.00	0.00	199.91	1674.60	0.12	2342.18	1.11	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.7237	217.10	0.00	0.00	0.00	0.00	0.00	217.10	1726.03	0.12	2559.16	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.7810	234.30	0.00	0.00	0.00	0.00	0.00	234.30	1781.90	0.12	2793.34	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	1.0676	320.29	0.00	0.00	0.00	0.00	0.00	320.29	1842.19	0.13	3113.50	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.3542	406.27	0.00	0.00	0.00	0.00	0.00	406.27	1924.62	0.13	3519.64	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.5262	457.86	0.00	0.00	0.00	0.00	0.00	457.86	2029.19	0.14	3977.36	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.6982	509.45	0.00	0.00	0.00	0.00	0.00	509.45	2147.04	0.15	4486.66	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.9848	595.44	0.00	0.00	0.00	0.00	0.00	595.44	2278.17	0.16	5081.94	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	2.5007	750.21	0.00	0.00	0.00	0.00	0.00	750.21	2431.43	0.17	5831.99	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.3797	113.92	0.00	0.00	0.00	0.00	0.00	113.92	2624.55	0.18	5945.73	2.81	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0516	15.48	0.00	0.00	0.00	0.00	0.00	15.48	2653.83	0.18	5961.02	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0344	10.32	0.00	0.00	0.00	0.00	0.00	10.32	2657.77	0.18	5971.15	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0287	8.60	0.00	0.00	0.00	0.00	0.00	8.60	2660.38	0.18	5979.57	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0172	5.16	0.00	0.00	0.00	0.00	0.00	5.16	2662.54	0.18	5984.54	2.83	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	2663.82	0.18	5987.80	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.66	0.19	5987.61	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.61	0.19	5987.43	2.83	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.57	0.19	5987.24	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.52	0.19	5987.06	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.47	0.19	5986.87	2.83	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.42	0.19	5986.69	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.37	0.19	5986.50	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.33	0.19	5986.32	2.83	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.28	0.19	5986.13	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.23	0.19	5985.95	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.18	0.19	5985.76	2.83	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2664.14	0.19	5985.58	2.83	0.00	0.00
					Total volume (cf)		5995.07									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1123.00	0.23	4.35	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1124.12	0.23	10.99	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1125.83	0.23	17.63	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1127.54	0.23	26.56	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1129.84	0.24	33.20	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1131.55	0.24	39.84	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1133.26	0.24	46.48	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1134.97	0.24	55.40	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1137.26	0.24	64.33	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1139.56	0.24	73.26	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1141.86	0.24	84.48	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1144.75	0.24	95.70	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1147.64	0.24	106.92	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1150.53	0.24	118.14	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1153.42	0.24	129.35	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1156.30	0.24	142.86	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1159.78	0.24	156.37	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1163.26	0.24	172.16	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1167.33	0.24	187.96	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1171.39	0.24	206.05	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	1176.05	0.25	219.55	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0178	16.04	0.00	0.00	0.00	0.00	0.00	16.04	1179.53	0.25	235.35	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1183.59	0.25	253.43	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1188.25	0.25	271.52	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1192.91	0.25	291.89	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0229	20.62	0.00	0.00	0.00	0.00	0.00	20.62	1198.15	0.25	312.26	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1203.40	0.25	334.93	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1209.23	0.25	357.59	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	1215.07	0.25	380.25	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0280	25.21	0.00	0.00	0.00	0.00	0.00	25.21	1220.90	0.25	405.20	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0306	27.50	0.00	0.00	0.00	0.00	0.00	27.50	1227.33	0.26	432.44	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0331	29.79	0.00	0.00	0.00	0.00	0.00	29.79	1234.34	0.26	461.98	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1241.94	0.26	496.09	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1250.73	0.26	530.20	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0407	36.66	0.00	0.00	0.00	0.00	0.00	36.66	1259.51	0.26	566.60	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1268.88	0.26	605.29	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1278.84	0.27	648.56	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1289.98	0.27	694.12	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0535	48.12	0.00	0.00	0.00	0.00	0.00	48.12	1301.71	0.27	741.97	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0560	50.41	0.00	0.00	0.00	0.00	0.00	50.41	1314.03	0.27	792.11	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1326.94	0.28	826.20	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0382	34.37	0.00	0.00	0.00	0.00	0.00	34.37	1335.72	0.28	860.30	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1344.50	0.28	905.84	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0509	45.83	0.00	0.00	0.00	0.00	0.00	45.83	1356.23	0.28	951.39	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1367.95	0.28	994.64	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1379.09	0.29	1037.89	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0433	38.95	0.00	0.00	0.00	0.00	0.00	38.95	1390.22	0.29	1076.56	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0458	41.25	0.00	0.00	0.00	0.00	0.00	41.25	1400.18	0.29	1117.51	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0637	57.29	0.00	0.00	0.00	0.00	0.00	57.29	1410.72	0.29	1174.50	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0662	59.58	0.00	0.00	0.00	0.00	0.00	59.58	1425.40	0.30	1233.78	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0784	70.59	0.00	0.00	0.00	0.00	0.00	70.59	1440.66	0.30	1304.08	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1135	102.13	0.00	0.00	0.00	0.00	0.00	102.13	1458.76	0.30	1405.90	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2502	225.21	0.00	0.00	0.00	0.00	0.00	225.21	1484.97	0.31	1630.80	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2596	233.61	0.00	0.00	0.00	0.00	0.00	233.61	1542.88	0.32	1864.09	0.88	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1602.94	0.33	1916.46	0.90	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1616.43	0.34	1968.83	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.1086	97.76	0.00	0.00	0.00	0.00	0.00	97.76	1629.91	0.34	2066.25	0.98	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0920	82.81	0.00	0.00	0.00	0.00	0.00	82.81	1654.99	0.34	2148.71	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.1007	90.65	0.00	0.00	0.00	0.00	0.00	90.65	1676.22	0.35	2239.02	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0839	75.47	0.00	0.00	0.00	0.00	0.00	75.47	1699.47	0.35	2314.13	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0668	60.16	0.00	0.00	0.00	0.00	0.00	60.16	1718.81	0.36	2373.93	1.12	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0586	52.70	0.00	0.00	0.00	0.00	0.00	52.70	1734.21	0.36	2426.28	1.15	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1747.69	0.36	2469.45	1.17	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1758.80	0.37	2512.62	1.19	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1769.92	0.37	2521.42	1.19	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1772.18	0.37	2530.21	1.19	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1774.45	0.37	2536.72	1.20	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1776.12	0.37	2543.22	1.20	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1777.80	0.37	2554.31	1.21	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1780.65	0.37	2565.40	1.21	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0127	11.46	0.00	0.00	0.00	0.00	0.00	11.46	1783.51	0.37	2576.48	1.22	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1786.36	0.37	2585.28	1.22	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1788.62	0.37	2594.07	1.22	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1790.89	0.37	2602.86	1.23	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1793.15	0.37	2609.36	1.23	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1794.82	0.37	2613.57	1.23	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1795.91	0.37	2620.07	1.24	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	1797.58	0.37	2628.86	1.24	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1799.85	0.37	2635.36	1.24	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1801.52	0.38	2639.57	1.25	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1802.60	0.38	2646.07	1.25	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1804.28	0.38	2652.57	1.25	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1805.95	0.38	2659.06	1.26	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1807.62	0.38	2663.27	1.26	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1808.70	0.38	2669.77	1.26	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1810.38	0.38	2673.97	1.26	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1811.46	0.38	2680.47	1.27	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1813.13	0.38	2684.68	1.27	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0076	6.87	0.00	0.00	0.00	0.00	0.00	6.87	1814.22	0.38	2691.17	1.27	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1815.89	0.38	2695.38	1.27	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1816.97	0.38	2699.58	1.27	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1818.05	0.38	2703.79	1.28	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1819.14	0.38	2707.99	1.28	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1820.22	0.38	2712.19	1.28	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1821.30	0.38	2716.40	1.28	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1822.38	0.38	2720.60	1.28	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1823.46	0.38	2720.22	1.28	0.00	0.00
					Total volume (cf)		2750.10									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.98ac+0.09ac typ street frontage=1.07ac

5/7/2024 LOT 8

Drainage Area (ac.)	1.0700	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5472	164.17	0.00	0.00	0.00	0.00	0.00	164.17	1078.00	0.07	164.09	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.8904	267.13	0.00	0.00	0.00	0.00	0.00	267.13	1120.94	0.08	431.15	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.9841	295.22	0.00	0.00	0.00	0.00	0.00	295.22	1190.83	0.08	726.28	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9216	276.49	0.00	0.00	0.00	0.00	0.00	276.49	1268.06	0.09	1002.69	0.49	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4521	435.63	0.00	0.00	0.00	0.00	0.00	435.63	1340.39	0.09	1438.22	0.70	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.6705	501.15	0.00	0.00	0.00	0.00	0.00	501.15	1454.36	0.10	1939.27	0.94	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0137	604.12	0.00	0.00	0.00	0.00	0.00	604.12	1585.48	0.11	2543.28	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2009	660.28	0.00	0.00	0.00	0.00	0.00	660.28	1743.54	0.12	3203.44	1.56	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2306	969.19	0.00	0.00	0.00	0.00	0.00	969.19	1916.30	0.13	4172.49	2.03	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.8843	1465.30	0.00	0.00	0.00	0.00	0.00	1465.30	2169.89	0.15	5637.64	2.74	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4163	1324.89	0.00	0.00	0.00	0.00	0.00	1324.89	2553.30	0.18	6962.36	3.38	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7032	210.97	0.00	0.00	0.00	0.00	0.00	210.97	2899.95	0.20	7173.13	3.48	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.11	0.21	7172.92	3.48	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.06	0.21	7172.72	3.48	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.00	0.21	7172.51	3.48	0.00	0.00	
					Total volume (cf)			7174.54								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1078.00	0.07	15.58	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1082.08	0.08	31.16	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0441	13.24	0.00	0.00	0.00	0.00	0.00	13.24	1086.15	0.08	44.33	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1089.60	0.08	62.31	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1094.31	0.08	80.30	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1099.01	0.08	114.77	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1108.03	0.08	132.76	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1112.74	0.08	167.23	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1121.76	0.08	201.71	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1130.79	0.08	219.69	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0642	19.27	0.00	0.00	0.00	0.00	0.00	19.27	1135.49	0.08	238.88	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1140.51	0.08	273.35	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1149.53	0.08	355.99	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1171.16	0.08	438.63	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1192.78	0.08	521.26	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	1214.41	0.08	579.81	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4363	130.88	0.00	0.00	0.00	0.00	0.00	130.88	1229.73	0.09	710.61	0.35	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1263.96	0.09	853.44	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3560	106.80	0.00	0.00	0.00	0.00	0.00	106.80	1301.33	0.09	960.15	0.47	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1329.26	0.09	1102.98	0.54	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7172	215.16	0.00	0.00	0.00	0.00	0.00	215.16	1366.63	0.09	1318.05	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1422.92	0.10	1509.03	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5567	167.00	0.00	0.00	0.00	0.00	0.00	167.00	1472.89	0.10	1675.93	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5968	179.04	0.00	0.00	0.00	0.00	0.00	179.04	1516.57	0.11	1854.87	0.90	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1563.39	0.11	2045.84	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0784	323.53	0.00	0.00	0.00	0.00	0.00	323.53	1613.37	0.11	2369.26	1.15	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.3995	419.86	0.00	0.00	0.00	0.00	0.00	419.86	1698.00	0.12	2789.00	1.35	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7975	239.25	0.00	0.00	0.00	0.00	0.00	239.25	1807.84	0.13	3028.12	1.47	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1220	636.59	0.00	0.00	0.00	0.00	0.00	636.59	1870.42	0.13	3664.58	1.78	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3226	696.79	0.00	0.00	0.00	0.00	0.00	696.79	2036.97	0.14	4361.23	2.12	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.6839	805.16	0.00	0.00	0.00	0.00	0.00	805.16	2219.28	0.15	5166.24	2.51	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7607	528.22	0.00	0.00	0.00	0.00	0.00	528.22	2429.94	0.17	5694.30	2.76	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	2568.12	0.18	5752.75	2.79	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2583.42	0.18	5787.13	2.81	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2592.41	0.18	5821.50	2.83	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0241	7.22	0.00	0.00	0.00	0.00	0.00	7.22	2601.41	0.18	5828.55	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.25	0.18	5828.36	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.20	0.18	5828.18	2.83	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.16	0.18	5828.00	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.11	0.18	5827.82	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.06	0.18	5827.64	2.83	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.01	0.18	5827.46	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.97	0.18	5827.28	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.92	0.18	5827.10	2.83	0.00	0.00
					Total volume (cf)		5832.33								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	1078.00	0.07	7.29	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1079.91	0.07	16.04	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1082.20	0.08	24.80	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1084.49	0.08	33.56	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1086.78	0.08	42.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1089.07	0.08	52.54	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1091.75	0.08	62.77	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1094.43	0.08	73.00	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1097.10	0.08	83.23	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1099.78	0.08	93.46	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1102.46	0.08	103.68	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1105.13	0.08	115.38	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1108.19	0.08	127.08	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1111.26	0.08	138.78	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1114.32	0.08	150.48	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1117.38	0.08	162.18	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1120.44	0.08	173.88	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1123.50	0.08	185.58	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1126.56	0.08	197.28	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1129.62	0.08	208.98	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1132.69	0.08	220.67	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1135.75	0.08	232.37	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1138.81	0.08	244.07	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1141.87	0.08	257.24	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1145.32	0.08	268.94	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1148.38	0.08	282.10	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1151.82	0.08	295.27	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1155.27	0.08	308.44	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1158.71	0.08	321.61	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1162.16	0.08	334.78	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1165.61	0.08	347.95	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1169.05	0.08	361.11	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1172.50	0.08	375.75	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1176.33	0.08	390.39	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1180.16	0.08	405.03	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1183.99	0.08	419.67	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1187.82	0.08	434.31	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1191.65	0.08	450.42	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1195.87	0.08	466.53	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1200.08	0.08	482.64	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0589	17.66	0.00	0.00	0.00	0.00	0.00	17.66	1204.30	0.08	500.22	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0638	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1208.90	0.08	519.27	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1213.89	0.08	543.10	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1220.12	0.08	566.92	0.28	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1226.36	0.09	605.47	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1236.44	0.09	644.02	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1246.53	0.09	697.29	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1260.47	0.09	750.55	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2269	68.07	0.00	0.00	0.00	0.00	0.00	68.07	1274.41	0.09	818.54	0.40	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2760	82.79	0.00	0.00	0.00	0.00	0.00	82.79	1292.20	0.09	901.24	0.44	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	1313.84	0.09	998.67	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3741	112.24	0.00	0.00	0.00	0.00	0.00	112.24	1339.34	0.09	1110.81	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1368.68	0.10	1237.67	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1401.88	0.10	1364.53	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4723	141.68	0.00	0.00	0.00	0.00	0.00	141.68	1435.08	0.10	1506.11	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5213	156.40	0.00	0.00	0.00	0.00	0.00	156.40	1472.13	0.10	1662.41	0.81	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1513.03	0.11	1833.42	0.89	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1557.78	0.11	2004.43	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6195	185.84	0.00	0.00	0.00	0.00	0.00	185.84	1602.53	0.11	2190.16	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6685	200.56	0.00	0.00	0.00	0.00	0.00	200.56	1651.13	0.11	2390.61	1.16	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9139	274.16	0.00	0.00	0.00	0.00	0.00	274.16	1703.59	0.12	2664.65	1.29	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1592	347.77	0.00	0.00	0.00	0.00	0.00	347.77	1775.30	0.12	3012.30	1.46	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3064	391.93	0.00	0.00	0.00	0.00	0.00	391.93	1866.28	0.13	3404.10	1.65	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4536	436.09	0.00	0.00	0.00	0.00	0.00	436.09	1968.81	0.14	3840.05	1.86	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.6990	509.70	0.00	0.00	0.00	0.00	0.00	509.70	2082.89	0.14	4349.60	2.11	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1406	642.18	0.00	0.00	0.00	0.00	0.00	642.18	2216.23	0.15	4991.63	2.42	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	2384.24	0.17	5088.98	2.47	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	2409.72	0.17	5102.06	2.48	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	2413.14	0.17	5110.73	2.48	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2415.41	0.17	5117.92	2.48	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0147	4.42	0.00	0.00	0.00	0.00	0.00	4.42	2417.29	0.17	5122.17	2.49	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0098	2.94	0.00	0.00	0.00	0.00	0.00	2.94	2418.40	0.17	5124.95	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.13	0.17	5124.78	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.09	0.17	5124.61	2.49	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.04	0.17	5124.44	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.00	0.17	5124.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.95	0.17	5124.11	2.49	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.91	0.17	5123.94	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.87	0.17	5123.77	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.82	0.17	5123.60	2.49	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.78	0.17	5123.43	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.73	0.17	5123.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.69	0.17	5123.10	2.49	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.65	0.17	5122.93	2.49	0.00	0.00
					Total volume (cf)			5131.78								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1078.00	0.22	3.70	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1078.97	0.22	9.36	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1080.45	0.23	15.02	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1081.93	0.23	22.64	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1083.92	0.23	28.30	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1085.40	0.23	33.95	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1086.89	0.23	39.61	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1088.37	0.23	47.23	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1090.36	0.23	54.85	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1092.35	0.23	62.47	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1094.35	0.23	72.05	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1096.85	0.23	81.63	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1099.36	0.23	91.21	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1101.87	0.23	100.78	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1104.37	0.23	110.36	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1106.88	0.23	121.90	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1109.90	0.23	133.44	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1112.92	0.23	146.93	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1116.45	0.23	160.43	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1119.98	0.23	175.89	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1124.03	0.23	187.43	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1127.05	0.23	200.92	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1130.58	0.24	216.38	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1134.62	0.24	231.83	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1138.67	0.24	249.25	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1143.22	0.24	266.66	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1147.78	0.24	286.04	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1152.85	0.24	305.41	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1157.92	0.24	324.79	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0240	21.58	0.00	0.00	0.00	0.00	0.00	21.58	1162.99	0.24	346.12	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0262	23.54	0.00	0.00	0.00	0.00	0.00	23.54	1168.58	0.24	369.42	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0283	25.50	0.00	0.00	0.00	0.00	0.00	25.50	1174.67	0.24	394.67	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1181.28	0.25	423.85	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1188.91	0.25	453.02	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0349	31.38	0.00	0.00	0.00	0.00	0.00	31.38	1196.55	0.25	484.15	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1204.70	0.25	517.25	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1213.36	0.25	554.26	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1223.04	0.25	593.24	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0458	41.19	0.00	0.00	0.00	0.00	0.00	41.19	1233.24	0.26	634.17	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0479	43.15	0.00	0.00	0.00	0.00	0.00	43.15	1243.95	0.26	677.07	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1255.18	0.26	706.23	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1262.81	0.26	735.38	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1270.44	0.26	774.35	0.38	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1280.64	0.27	813.31	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1290.83	0.27	850.31	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1300.51	0.27	887.31	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1310.20	0.27	920.38	0.45	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0392	35.31	0.00	0.00	0.00	0.00	0.00	35.31	1318.85	0.27	955.41	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0545	49.04	0.00	0.00	0.00	0.00	0.00	49.04	1328.02	0.28	1004.17	0.49	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0567	51.00	0.00	0.00	0.00	0.00	0.00	51.00	1340.78	0.28	1054.89	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0671	60.43	0.00	0.00	0.00	0.00	0.00	60.43	1354.05	0.28	1115.04	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0971	87.42	0.00	0.00	0.00	0.00	0.00	87.42	1369.79	0.29	1202.17	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2142	192.78	0.00	0.00	0.00	0.00	0.00	192.78	1392.59	0.29	1394.66	0.68	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2222	199.97	0.00	0.00	0.00	0.00	0.00	199.97	1442.96	0.30	1594.33	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1495.22	0.31	1639.13	0.80	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1506.94	0.31	1683.93	0.82	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0930	83.69	0.00	0.00	0.00	0.00	0.00	83.69	1518.66	0.32	1767.30	0.86	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0788	70.88	0.00	0.00	0.00	0.00	0.00	70.88	1540.48	0.32	1837.87	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0862	77.60	0.00	0.00	0.00	0.00	0.00	77.60	1558.94	0.32	1915.14	0.93	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0718	64.60	0.00	0.00	0.00	0.00	0.00	64.60	1579.17	0.33	1979.41	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0572	51.50	0.00	0.00	0.00	0.00	0.00	51.50	1595.98	0.33	2030.58	0.99	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1609.37	0.34	2075.36	1.01	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1621.09	0.34	2112.29	1.03	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1630.76	0.34	2149.21	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1640.42	0.34	2156.72	1.05	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1642.38	0.34	2164.22	1.05	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1644.35	0.34	2169.76	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1645.80	0.34	2175.31	1.06	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1647.25	0.34	2184.77	1.06	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1649.72	0.34	2194.23	1.07	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1652.20	0.34	2203.70	1.07	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1654.68	0.34	2211.20	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1656.64	0.35	2218.70	1.08	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1658.60	0.35	2226.20	1.08	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1660.57	0.35	2231.74	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1662.02	0.35	2235.31	1.09	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1662.95	0.35	2240.85	1.09	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1664.40	0.35	2248.35	1.09	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1666.36	0.35	2253.89	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1667.81	0.35	2257.46	1.10	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1668.75	0.35	2263.00	1.10	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1670.20	0.35	2268.54	1.10	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1671.65	0.35	2274.07	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1673.09	0.35	2277.65	1.11	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1674.03	0.35	2283.18	1.11	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1675.48	0.35	2286.76	1.11	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1676.41	0.35	2292.29	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1677.86	0.35	2295.87	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1678.80	0.35	2301.40	1.12	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1680.25	0.35	2304.97	1.12	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1681.18	0.35	2308.55	1.12	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1682.12	0.35	2312.12	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.05	0.35	2315.69	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.98	0.35	2319.26	1.13	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1684.92	0.35	2322.83	1.13	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1685.85	0.35	2326.41	1.13	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1686.79	0.35	2326.05	1.13	0.00	0.00
						Total volume (cf)		2354.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.98ac+0.09ac typ street frontage=1.07ac

5/7/2024 LOT 9

Drainage Area (ac.)	1.0700	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5472	164.17	0.00	0.00	0.00	0.00	0.00	164.17	1078.00	0.07	164.09	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.8904	267.13	0.00	0.00	0.00	0.00	0.00	267.13	1120.94	0.08	431.15	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.9841	295.22	0.00	0.00	0.00	0.00	0.00	295.22	1190.83	0.08	726.28	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9216	276.49	0.00	0.00	0.00	0.00	0.00	276.49	1268.06	0.09	1002.69	0.49	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.4521	435.63	0.00	0.00	0.00	0.00	0.00	435.63	1340.39	0.09	1438.22	0.70	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.6705	501.15	0.00	0.00	0.00	0.00	0.00	501.15	1454.36	0.10	1939.27	0.94	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0137	604.12	0.00	0.00	0.00	0.00	0.00	604.12	1585.48	0.11	2543.28	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2009	660.28	0.00	0.00	0.00	0.00	0.00	660.28	1743.54	0.12	3203.44	1.56	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.2306	969.19	0.00	0.00	0.00	0.00	0.00	969.19	1916.30	0.13	4172.49	2.03	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.8843	1465.30	0.00	0.00	0.00	0.00	0.00	1465.30	2169.89	0.15	5637.64	2.74	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.4163	1324.89	0.00	0.00	0.00	0.00	0.00	1324.89	2553.30	0.18	6962.36	3.38	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7032	210.97	0.00	0.00	0.00	0.00	0.00	210.97	2899.95	0.20	7173.13	3.48	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.11	0.21	7172.92	3.48	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.06	0.21	7172.72	3.48	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2955.00	0.21	7172.51	3.48	0.00	0.00	
					Total volume (cf)			7174.54								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1078.00	0.07	15.58	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0522	15.65	0.00	0.00	0.00	0.00	0.00	15.65	1082.08	0.08	31.16	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0441	13.24	0.00	0.00	0.00	0.00	0.00	13.24	1086.15	0.08	44.33	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1089.60	0.08	62.31	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1094.31	0.08	80.30	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1099.01	0.08	114.77	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1108.03	0.08	132.76	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1112.74	0.08	167.23	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1121.76	0.08	201.71	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0602	18.06	0.00	0.00	0.00	0.00	0.00	18.06	1130.79	0.08	219.69	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0642	19.27	0.00	0.00	0.00	0.00	0.00	19.27	1135.49	0.08	238.88	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	1140.51	0.08	273.35	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1149.53	0.08	355.99	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1171.16	0.08	438.63	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2757	82.72	0.00	0.00	0.00	0.00	0.00	82.72	1192.78	0.08	521.26	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	1214.41	0.08	579.81	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4363	130.88	0.00	0.00	0.00	0.00	0.00	130.88	1229.73	0.09	710.61	0.35	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1263.96	0.09	853.44	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3560	106.80	0.00	0.00	0.00	0.00	0.00	106.80	1301.33	0.09	960.15	0.47	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4764	142.92	0.00	0.00	0.00	0.00	0.00	142.92	1329.26	0.09	1102.98	0.54	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7172	215.16	0.00	0.00	0.00	0.00	0.00	215.16	1366.63	0.09	1318.05	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1422.92	0.10	1509.03	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5567	167.00	0.00	0.00	0.00	0.00	0.00	167.00	1472.89	0.10	1675.93	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5968	179.04	0.00	0.00	0.00	0.00	0.00	179.04	1516.57	0.11	1854.87	0.90	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6369	191.08	0.00	0.00	0.00	0.00	0.00	191.08	1563.39	0.11	2045.84	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.0784	323.53	0.00	0.00	0.00	0.00	0.00	323.53	1613.37	0.11	2369.26	1.15	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.3995	419.86	0.00	0.00	0.00	0.00	0.00	419.86	1698.00	0.12	2789.00	1.35	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7975	239.25	0.00	0.00	0.00	0.00	0.00	239.25	1807.84	0.13	3028.12	1.47	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.1220	636.59	0.00	0.00	0.00	0.00	0.00	636.59	1870.42	0.13	3664.58	1.78	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.3226	696.79	0.00	0.00	0.00	0.00	0.00	696.79	2036.97	0.14	4361.23	2.12	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.6839	805.16	0.00	0.00	0.00	0.00	0.00	805.16	2219.28	0.15	5166.24	2.51	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.7607	528.22	0.00	0.00	0.00	0.00	0.00	528.22	2429.94	0.17	5694.30	2.76	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1955	58.64	0.00	0.00	0.00	0.00	0.00	58.64	2568.12	0.18	5752.75	2.79	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2583.42	0.18	5787.13	2.81	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1152	34.55	0.00	0.00	0.00	0.00	0.00	34.55	2592.41	0.18	5821.50	2.83	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0241	7.22	0.00	0.00	0.00	0.00	0.00	7.22	2601.41	0.18	5828.55	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.25	0.18	5828.36	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.20	0.18	5828.18	2.83	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.16	0.18	5828.00	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.11	0.18	5827.82	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.06	0.18	5827.64	2.83	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2603.01	0.18	5827.46	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.97	0.18	5827.28	2.83	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2602.92	0.18	5827.10	2.83	0.00	0.00
					Total volume (cf)		5832.33								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	1078.00	0.07	7.29	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1079.91	0.07	16.04	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1082.20	0.08	24.80	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1084.49	0.08	33.56	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	1086.78	0.08	42.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1089.07	0.08	52.54	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1091.75	0.08	62.77	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1094.43	0.08	73.00	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1097.10	0.08	83.23	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1099.78	0.08	93.46	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0343	10.30	0.00	0.00	0.00	0.00	0.00	10.30	1102.46	0.08	103.68	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1105.13	0.08	115.38	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1108.19	0.08	127.08	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1111.26	0.08	138.78	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1114.32	0.08	150.48	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1117.38	0.08	162.18	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1120.44	0.08	173.88	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1123.50	0.08	185.58	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1126.56	0.08	197.28	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1129.62	0.08	208.98	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1132.69	0.08	220.67	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1135.75	0.08	232.37	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1138.81	0.08	244.07	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1141.87	0.08	257.24	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0393	11.78	0.00	0.00	0.00	0.00	0.00	11.78	1145.32	0.08	268.94	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1148.38	0.08	282.10	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1151.82	0.08	295.27	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1155.27	0.08	308.44	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1158.71	0.08	321.61	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1162.16	0.08	334.78	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1165.61	0.08	347.95	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	1169.05	0.08	361.11	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1172.50	0.08	375.75	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1176.33	0.08	390.39	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1180.16	0.08	405.03	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1183.99	0.08	419.67	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0491	14.72	0.00	0.00	0.00	0.00	0.00	14.72	1187.82	0.08	434.31	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1191.65	0.08	450.42	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1195.87	0.08	466.53	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0540	16.19	0.00	0.00	0.00	0.00	0.00	16.19	1200.08	0.08	482.64	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0589	17.66	0.00	0.00	0.00	0.00	0.00	17.66	1204.30	0.08	500.22	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0638	19.14	0.00	0.00	0.00	0.00	0.00	19.14	1208.90	0.08	519.27	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1213.89	0.08	543.10	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0797	23.91	0.00	0.00	0.00	0.00	0.00	23.91	1220.12	0.08	566.92	0.28	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1226.36	0.09	605.47	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1288	38.63	0.00	0.00	0.00	0.00	0.00	38.63	1236.44	0.09	644.02	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1246.53	0.09	697.29	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1778	53.35	0.00	0.00	0.00	0.00	0.00	53.35	1260.47	0.09	750.55	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2269	68.07	0.00	0.00	0.00	0.00	0.00	68.07	1274.41	0.09	818.54	0.40	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2760	82.79	0.00	0.00	0.00	0.00	0.00	82.79	1292.20	0.09	901.24	0.44	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	1313.84	0.09	998.67	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3741	112.24	0.00	0.00	0.00	0.00	0.00	112.24	1339.34	0.09	1110.81	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1368.68	0.10	1237.67	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4232	126.96	0.00	0.00	0.00	0.00	0.00	126.96	1401.88	0.10	1364.53	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4723	141.68	0.00	0.00	0.00	0.00	0.00	141.68	1435.08	0.10	1506.11	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5213	156.40	0.00	0.00	0.00	0.00	0.00	156.40	1472.13	0.10	1662.41	0.81	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1513.03	0.11	1833.42	0.89	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5704	171.12	0.00	0.00	0.00	0.00	0.00	171.12	1557.78	0.11	2004.43	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6195	185.84	0.00	0.00	0.00	0.00	0.00	185.84	1602.53	0.11	2190.16	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6685	200.56	0.00	0.00	0.00	0.00	0.00	200.56	1651.13	0.11	2390.61	1.16	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9139	274.16	0.00	0.00	0.00	0.00	0.00	274.16	1703.59	0.12	2664.65	1.29	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.1592	347.77	0.00	0.00	0.00	0.00	0.00	347.77	1775.30	0.12	3012.30	1.46	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3064	391.93	0.00	0.00	0.00	0.00	0.00	391.93	1866.28	0.13	3404.10	1.65	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.4536	436.09	0.00	0.00	0.00	0.00	0.00	436.09	1968.81	0.14	3840.05	1.86	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.6990	509.70	0.00	0.00	0.00	0.00	0.00	509.70	2082.89	0.14	4349.60	2.11	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.1406	642.18	0.00	0.00	0.00	0.00	0.00	642.18	2216.23	0.15	4991.63	2.42	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3251	97.52	0.00	0.00	0.00	0.00	0.00	97.52	2384.24	0.17	5088.98	2.47	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0442	13.25	0.00	0.00	0.00	0.00	0.00	13.25	2409.72	0.17	5102.06	2.48	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0294	8.83	0.00	0.00	0.00	0.00	0.00	8.83	2413.14	0.17	5110.73	2.48	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0245	7.36	0.00	0.00	0.00	0.00	0.00	7.36	2415.41	0.17	5117.92	2.48	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0147	4.42	0.00	0.00	0.00	0.00	0.00	4.42	2417.29	0.17	5122.17	2.49	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0098	2.94	0.00	0.00	0.00	0.00	0.00	2.94	2418.40	0.17	5124.95	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.13	0.17	5124.78	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.09	0.17	5124.61	2.49	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.04	0.17	5124.44	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2419.00	0.17	5124.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.95	0.17	5124.11	2.49	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.91	0.17	5123.94	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.87	0.17	5123.77	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.82	0.17	5123.60	2.49	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.78	0.17	5123.43	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.73	0.17	5123.27	2.49	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.69	0.17	5123.10	2.49	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2418.65	0.17	5122.93	2.49	0.00	0.00
					Total volume (cf)			5131.78									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1078.00	0.22	3.70	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1078.97	0.22	9.36	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1080.45	0.23	15.02	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1081.93	0.23	22.64	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1083.92	0.23	28.30	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1085.40	0.23	33.95	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1086.89	0.23	39.61	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1088.37	0.23	47.23	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1090.36	0.23	54.85	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1092.35	0.23	62.47	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1094.35	0.23	72.05	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1096.85	0.23	81.63	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1099.36	0.23	91.21	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1101.87	0.23	100.78	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1104.37	0.23	110.36	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1106.88	0.23	121.90	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1109.90	0.23	133.44	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1112.92	0.23	146.93	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1116.45	0.23	160.43	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1119.98	0.23	175.89	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0131	11.77	0.00	0.00	0.00	0.00	0.00	11.77	1124.03	0.23	187.43	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0153	13.73	0.00	0.00	0.00	0.00	0.00	13.73	1127.05	0.23	200.92	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1130.58	0.24	216.38	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0174	15.69	0.00	0.00	0.00	0.00	0.00	15.69	1134.62	0.24	231.83	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1138.67	0.24	249.25	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0196	17.65	0.00	0.00	0.00	0.00	0.00	17.65	1143.22	0.24	266.66	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1147.78	0.24	286.04	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1152.85	0.24	305.41	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0218	19.61	0.00	0.00	0.00	0.00	0.00	19.61	1157.92	0.24	324.79	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0240	21.58	0.00	0.00	0.00	0.00	0.00	21.58	1162.99	0.24	346.12	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0262	23.54	0.00	0.00	0.00	0.00	0.00	23.54	1168.58	0.24	369.42	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0283	25.50	0.00	0.00	0.00	0.00	0.00	25.50	1174.67	0.24	394.67	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1181.28	0.25	423.85	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1188.91	0.25	453.02	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0349	31.38	0.00	0.00	0.00	0.00	0.00	31.38	1196.55	0.25	484.15	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1204.70	0.25	517.25	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1213.36	0.25	554.26	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1223.04	0.25	593.24	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0458	41.19	0.00	0.00	0.00	0.00	0.00	41.19	1233.24	0.26	634.17	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0479	43.15	0.00	0.00	0.00	0.00	0.00	43.15	1243.95	0.26	677.07	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1255.18	0.26	706.23	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0327	29.42	0.00	0.00	0.00	0.00	0.00	29.42	1262.81	0.26	735.38	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1270.44	0.26	774.35	0.38	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0436	39.23	0.00	0.00	0.00	0.00	0.00	39.23	1280.64	0.27	813.31	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1290.83	0.27	850.31	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1300.51	0.27	887.31	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0370	33.34	0.00	0.00	0.00	0.00	0.00	33.34	1310.20	0.27	920.38	0.45	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0392	35.31	0.00	0.00	0.00	0.00	0.00	35.31	1318.85	0.27	955.41	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0545	49.04	0.00	0.00	0.00	0.00	0.00	49.04	1328.02	0.28	1004.17	0.49	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0567	51.00	0.00	0.00	0.00	0.00	0.00	51.00	1340.78	0.28	1054.89	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0671	60.43	0.00	0.00	0.00	0.00	0.00	60.43	1354.05	0.28	1115.04	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0971	87.42	0.00	0.00	0.00	0.00	0.00	87.42	1369.79	0.29	1202.17	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2142	192.78	0.00	0.00	0.00	0.00	0.00	192.78	1392.59	0.29	1394.66	0.68	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2222	199.97	0.00	0.00	0.00	0.00	0.00	199.97	1442.96	0.30	1594.33	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1495.22	0.31	1639.13	0.80	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1506.94	0.31	1683.93	0.82	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0930	83.69	0.00	0.00	0.00	0.00	0.00	83.69	1518.66	0.32	1767.30	0.86	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0788	70.88	0.00	0.00	0.00	0.00	0.00	70.88	1540.48	0.32	1837.87	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0862	77.60	0.00	0.00	0.00	0.00	0.00	77.60	1558.94	0.32	1915.14	0.93	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0718	64.60	0.00	0.00	0.00	0.00	0.00	64.60	1579.17	0.33	1979.41	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0572	51.50	0.00	0.00	0.00	0.00	0.00	51.50	1595.98	0.33	2030.58	0.99	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0501	45.11	0.00	0.00	0.00	0.00	0.00	45.11	1609.37	0.34	2075.36	1.01	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1621.09	0.34	2112.29	1.03	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0414	37.27	0.00	0.00	0.00	0.00	0.00	37.27	1630.76	0.34	2149.21	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1640.42	0.34	2156.72	1.05	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1642.38	0.34	2164.22	1.05	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1644.35	0.34	2169.76	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1645.80	0.34	2175.31	1.06	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1647.25	0.34	2184.77	1.06	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1649.72	0.34	2194.23	1.07	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0109	9.81	0.00	0.00	0.00	0.00	0.00	9.81	1652.20	0.34	2203.70	1.07	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1654.68	0.34	2211.20	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1656.64	0.35	2218.70	1.08	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1658.60	0.35	2226.20	1.08	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1660.57	0.35	2231.74	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1662.02	0.35	2235.31	1.09	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1662.95	0.35	2240.85	1.09	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0087	7.85	0.00	0.00	0.00	0.00	0.00	7.85	1664.40	0.35	2248.35	1.09	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1666.36	0.35	2253.89	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1667.81	0.35	2257.46	1.10	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1668.75	0.35	2263.00	1.10	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1670.20	0.35	2268.54	1.10	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1671.65	0.35	2274.07	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1673.09	0.35	2277.65	1.11	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1674.03	0.35	2283.18	1.11	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1675.48	0.35	2286.76	1.11	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1676.41	0.35	2292.29	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1677.86	0.35	2295.87	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0065	5.88	0.00	0.00	0.00	0.00	0.00	5.88	1678.80	0.35	2301.40	1.12	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1680.25	0.35	2304.97	1.12	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1681.18	0.35	2308.55	1.12	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1682.12	0.35	2312.12	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.05	0.35	2315.69	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1683.98	0.35	2319.26	1.13	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1684.92	0.35	2322.83	1.13	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0044	3.92	0.00	0.00	0.00	0.00	0.00	3.92	1685.85	0.35	2326.41	1.13	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1686.79	0.35	2326.05	1.13	0.00	0.00
						Total volume (cf)		2354.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 10-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.73ac

5/7/2024 LOT 10-BACK

Drainage Area (ac.)	0.7300	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2400 s.f. Bot. = 623 s.f. Max. Depth (d)= 4 Max. storage= 5661.04 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.3733	112.00	0.00	0.00	0.00	0.00	0.00	112.00	623.00	0.04	111.96	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.6075	182.25	0.00	0.00	0.00	0.00	0.00	182.25	658.14	0.05	294.16	0.21	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.6714	201.41	0.00	0.00	0.00	0.00	0.00	201.41	715.34	0.05	495.52	0.35	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.6288	188.64	0.00	0.00	0.00	0.00	0.00	188.64	778.54	0.05	684.11	0.48	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.9907	297.20	0.00	0.00	0.00	0.00	0.00	297.20	837.74	0.06	981.25	0.69	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.1397	341.91	0.00	0.00	0.00	0.00	0.00	341.91	931.01	0.06	1323.09	0.93	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	1.3739	412.16	0.00	0.00	0.00	0.00	0.00	412.16	1038.32	0.07	1735.18	1.23	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.5016	450.47	0.00	0.00	0.00	0.00	0.00	450.47	1167.67	0.08	2185.57	1.54	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	2.2041	661.22	0.00	0.00	0.00	0.00	0.00	661.22	1309.05	0.09	2846.70	2.01	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	3.3323	999.69	0.00	0.00	0.00	0.00	0.00	999.69	1516.58	0.11	3846.28	2.72	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	3.0130	903.90	0.00	0.00	0.00	0.00	0.00	903.90	1830.35	0.13	4750.05	3.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.4798	143.93	0.00	0.00	0.00	0.00	0.00	143.93	2114.04	0.15	4893.84	3.46	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.17	0.15	4893.69	3.46	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.13	0.15	4893.54	3.46	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2159.08	0.15	4893.39	3.46	0.00	0.00	
					Total volume (cf)			4894.78								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0356	10.68	0.00	0.00	0.00	0.00	0.00	10.68	623.00	0.04	10.64	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0356	10.68	0.00	0.00	0.00	0.00	0.00	10.68	626.34	0.04	21.27	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	629.68	0.04	30.26	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	632.50	0.04	42.54	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	636.35	0.04	54.82	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	640.21	0.04	78.35	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	647.59	0.04	90.63	0.06	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	651.45	0.05	114.16	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	658.83	0.05	137.68	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0411	12.32	0.00	0.00	0.00	0.00	0.00	12.32	666.22	0.05	149.96	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0438	13.14	0.00	0.00	0.00	0.00	0.00	13.14	670.07	0.05	163.06	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	674.18	0.05	186.58	0.13	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	681.57	0.05	242.97	0.17	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	699.27	0.05	299.36	0.21	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1881	56.43	0.00	0.00	0.00	0.00	0.00	56.43	716.97	0.05	355.74	0.25	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1333	40.00	0.00	0.00	0.00	0.00	0.00	40.00	734.67	0.05	395.69	0.28	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	747.21	0.05	484.93	0.34	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.3250	97.51	0.00	0.00	0.00	0.00	0.00	97.51	775.22	0.05	582.38	0.41	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.2429	72.86	0.00	0.00	0.00	0.00	0.00	72.86	805.81	0.06	655.19	0.46	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.3250	97.51	0.00	0.00	0.00	0.00	0.00	97.51	828.66	0.06	752.64	0.53	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.4893	146.79	0.00	0.00	0.00	0.00	0.00	146.79	859.25	0.06	899.37	0.64	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.4346	130.37	0.00	0.00	0.00	0.00	0.00	130.37	905.31	0.06	1029.68	0.73	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.3798	113.94	0.00	0.00	0.00	0.00	0.00	113.94	946.22	0.07	1143.55	0.81	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.4072	122.15	0.00	0.00	0.00	0.00	0.00	122.15	981.96	0.07	1265.63	0.89	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.4346	130.37	0.00	0.00	0.00	0.00	0.00	130.37	1020.28	0.07	1395.92	0.99	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.7358	220.73	0.00	0.00	0.00	0.00	0.00	220.73	1061.18	0.07	1616.58	1.14	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.9548	286.44	0.00	0.00	0.00	0.00	0.00	286.44	1130.44	0.08	1902.94	1.34	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.5441	163.22	0.00	0.00	0.00	0.00	0.00	163.22	1220.33	0.08	2066.08	1.46	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	1.4477	434.31	0.00	0.00	0.00	0.00	0.00	434.31	1271.54	0.09	2500.30	1.77	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.5846	475.38	0.00	0.00	0.00	0.00	0.00	475.38	1407.84	0.10	2975.59	2.10	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.8310	549.31	0.00	0.00	0.00	0.00	0.00	549.31	1557.04	0.11	3524.79	2.49	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.2013	360.38	0.00	0.00	0.00	0.00	0.00	360.38	1729.43	0.12	3885.05	2.75	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1333	40.00	0.00	0.00	0.00	0.00	0.00	40.00	1842.52	0.13	3924.93	2.77	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	1855.03	0.13	3948.37	2.79	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0786	23.57	0.00	0.00	0.00	0.00	0.00	23.57	1862.39	0.13	3971.82	2.81	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0164	4.93	0.00	0.00	0.00	0.00	0.00	4.93	1869.75	0.13	3976.62	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.26	0.13	3976.49	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.22	0.13	3976.36	2.81	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.18	0.13	3976.23	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.14	0.13	3976.10	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.10	0.13	3975.97	2.81	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.05	0.13	3975.84	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1871.01	0.13	3975.71	2.81	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1870.97	0.13	3975.58	2.81	0.00	0.00
					Total volume (cf)		3979.07								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0167	5.02	0.00	0.00	0.00	0.00	0.00	5.02	623.00	0.04	4.98	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	624.56	0.04	10.96	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	626.44	0.04	16.94	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	628.32	0.04	22.93	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	630.20	0.04	28.91	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	632.07	0.04	35.89	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	634.27	0.04	42.88	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	636.46	0.04	49.87	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	638.65	0.04	56.85	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	640.85	0.04	63.84	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0234	7.03	0.00	0.00	0.00	0.00	0.00	7.03	643.04	0.04	70.82	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	645.23	0.04	78.81	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	647.74	0.04	86.80	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	650.25	0.05	94.79	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	652.76	0.05	102.78	0.07	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	655.26	0.05	110.77	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	657.77	0.05	118.76	0.08	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	660.28	0.05	126.75	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	662.79	0.05	134.74	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	665.29	0.05	142.72	0.10	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	667.80	0.05	150.71	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	670.31	0.05	158.70	0.11	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	672.82	0.05	166.69	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	675.32	0.05	175.68	0.12	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0268	8.03	0.00	0.00	0.00	0.00	0.00	8.03	678.15	0.05	183.67	0.13	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	680.65	0.05	192.66	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	683.48	0.05	201.65	0.14	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	686.30	0.05	210.64	0.15	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	689.12	0.05	219.63	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	691.94	0.05	228.62	0.16	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	694.76	0.05	237.61	0.17	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	697.59	0.05	246.60	0.17	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	700.41	0.05	256.60	0.18	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	703.55	0.05	266.59	0.19	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	706.68	0.05	276.59	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	709.82	0.05	286.58	0.20	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0335	10.04	0.00	0.00	0.00	0.00	0.00	10.04	712.96	0.05	296.57	0.21	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	716.09	0.05	307.57	0.22	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	719.55	0.05	318.57	0.23	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0368	11.05	0.00	0.00	0.00	0.00	0.00	11.05	723.00	0.05	329.57	0.23	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0402	12.05	0.00	0.00	0.00	0.00	0.00	12.05	726.45	0.05	341.57	0.24	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0435	13.06	0.00	0.00	0.00	0.00	0.00	13.06	730.22	0.05	354.57	0.25	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0544	16.31	0.00	0.00	0.00	0.00	0.00	16.31	734.30	0.05	370.84	0.26	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0544	16.31	0.00	0.00	0.00	0.00	0.00	16.31	739.41	0.05	387.10	0.27	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0879	26.36	0.00	0.00	0.00	0.00	0.00	26.36	744.51	0.05	413.40	0.29	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0879	26.36	0.00	0.00	0.00	0.00	0.00	26.36	752.77	0.05	439.71	0.31	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1213	36.40	0.00	0.00	0.00	0.00	0.00	36.40	761.02	0.05	476.05	0.34	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1213	36.40	0.00	0.00	0.00	0.00	0.00	36.40	772.43	0.05	512.40	0.36	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1548	46.44	0.00	0.00	0.00	0.00	0.00	46.44	783.84	0.05	558.79	0.39	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1883	56.49	0.00	0.00	0.00	0.00	0.00	56.49	798.40	0.06	615.22	0.43	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.2218	66.53	0.00	0.00	0.00	0.00	0.00	66.53	816.12	0.06	681.69	0.48	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.2552	76.57	0.00	0.00	0.00	0.00	0.00	76.57	836.98	0.06	758.21	0.54	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.2887	86.62	0.00	0.00	0.00	0.00	0.00	86.62	861.00	0.06	844.76	0.60	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.2887	86.62	0.00	0.00	0.00	0.00	0.00	86.62	888.17	0.06	931.32	0.66	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.3222	96.66	0.00	0.00	0.00	0.00	0.00	96.66	915.34	0.06	1027.91	0.73	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.3557	106.70	0.00	0.00	0.00	0.00	0.00	106.70	945.66	0.07	1134.55	0.80	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.3891	116.74	0.00	0.00	0.00	0.00	0.00	116.74	979.13	0.07	1251.22	0.88	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.3891	116.74	0.00	0.00	0.00	0.00	0.00	116.74	1015.76	0.07	1367.90	0.97	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.4226	126.79	0.00	0.00	0.00	0.00	0.00	126.79	1052.38	0.07	1494.61	1.06	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.4561	136.83	0.00	0.00	0.00	0.00	0.00	136.83	1092.16	0.08	1631.37	1.15	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.6235	187.05	0.00	0.00	0.00	0.00	0.00	187.05	1135.09	0.08	1818.34	1.28	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.7909	237.26	0.00	0.00	0.00	0.00	0.00	237.26	1193.78	0.08	2055.52	1.45	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.8913	267.39	0.00	0.00	0.00	0.00	0.00	267.39	1268.23	0.09	2322.82	1.64	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.9917	297.52	0.00	0.00	0.00	0.00	0.00	297.52	1352.13	0.09	2620.25	1.85	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.1591	347.74	0.00	0.00	0.00	0.00	0.00	347.74	1445.49	0.10	2967.88	2.10	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.4604	438.12	0.00	0.00	0.00	0.00	0.00	438.12	1554.62	0.11	3405.90	2.41	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.2218	66.53	0.00	0.00	0.00	0.00	0.00	66.53	1692.11	0.12	3472.31	2.45	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0301	9.04	0.00	0.00	0.00	0.00	0.00	9.04	1712.96	0.12	3481.23	2.46	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0201	6.03	0.00	0.00	0.00	0.00	0.00	6.03	1715.76	0.12	3487.14	2.46	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0167	5.02	0.00	0.00	0.00	0.00	0.00	5.02	1717.61	0.12	3492.04	2.47	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0100	3.01	0.00	0.00	0.00	0.00	0.00	3.01	1719.15	0.12	3494.93	2.47	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0067	2.01	0.00	0.00	0.00	0.00	0.00	2.01	1720.06	0.12	3496.82	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.65	0.12	3496.70	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.61	0.12	3496.58	2.47	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.58	0.12	3496.47	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.54	0.12	3496.35	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.50	0.12	3496.23	2.47	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.46	0.12	3496.11	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.43	0.12	3495.99	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.39	0.12	3495.87	2.47	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.35	0.12	3495.75	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.31	0.12	3495.63	2.47	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.28	0.12	3495.51	2.47	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1720.24	0.12	3495.39	2.47	0.00	0.00
					Total volume (cf)		3501.12								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	623.00	0.13	2.55	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	623.80	0.13	6.43	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	625.02	0.13	10.32	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	626.24	0.13	15.54	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	627.88	0.13	19.42	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	629.10	0.13	23.31	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	630.32	0.13	27.19	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	631.53	0.13	32.41	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	633.17	0.13	37.63	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	634.81	0.13	42.85	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	636.45	0.13	49.41	0.03	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	638.51	0.13	55.97	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	640.57	0.13	62.53	0.04	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	642.63	0.13	69.08	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	644.68	0.13	75.64	0.05	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	646.74	0.13	83.53	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	649.22	0.14	91.43	0.06	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	651.70	0.14	100.66	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	654.60	0.14	109.89	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	657.49	0.14	120.46	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0089	8.03	0.00	0.00	0.00	0.00	0.00	8.03	660.81	0.14	128.35	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0104	9.37	0.00	0.00	0.00	0.00	0.00	9.37	663.29	0.14	137.58	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	666.19	0.14	148.15	0.10	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0119	10.71	0.00	0.00	0.00	0.00	0.00	10.71	669.50	0.14	158.71	0.11	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0134	12.04	0.00	0.00	0.00	0.00	0.00	12.04	672.82	0.14	170.62	0.12	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0134	12.04	0.00	0.00	0.00	0.00	0.00	12.04	676.56	0.14	182.52	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	680.29	0.14	195.76	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	684.45	0.14	209.00	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0149	13.38	0.00	0.00	0.00	0.00	0.00	13.38	688.60	0.14	222.24	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0164	14.72	0.00	0.00	0.00	0.00	0.00	14.72	692.76	0.14	236.81	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0178	16.06	0.00	0.00	0.00	0.00	0.00	16.06	697.34	0.15	252.73	0.18	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0193	17.40	0.00	0.00	0.00	0.00	0.00	17.40	702.33	0.15	269.98	0.19	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	707.75	0.15	289.90	0.20	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	714.00	0.15	309.83	0.22	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0238	21.41	0.00	0.00	0.00	0.00	0.00	21.41	720.25	0.15	331.09	0.23	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0253	22.75	0.00	0.00	0.00	0.00	0.00	22.75	726.93	0.15	353.69	0.25	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	734.02	0.15	378.96	0.27	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	741.95	0.15	405.57	0.29	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0312	28.10	0.00	0.00	0.00	0.00	0.00	28.10	750.31	0.16	433.51	0.31	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0327	29.44	0.00	0.00	0.00	0.00	0.00	29.44	759.08	0.16	462.80	0.33	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	768.27	0.16	482.71	0.34	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0223	20.07	0.00	0.00	0.00	0.00	0.00	20.07	774.52	0.16	502.62	0.36	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	780.77	0.16	529.22	0.37	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0297	26.76	0.00	0.00	0.00	0.00	0.00	26.76	789.12	0.16	555.82	0.39	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	797.47	0.17	581.08	0.41	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	805.40	0.17	606.34	0.43	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0253	22.75	0.00	0.00	0.00	0.00	0.00	22.75	813.33	0.17	628.92	0.44	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0268	24.09	0.00	0.00	0.00	0.00	0.00	24.09	820.42	0.17	652.84	0.46	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0372	33.45	0.00	0.00	0.00	0.00	0.00	33.45	827.92	0.17	686.12	0.48	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0387	34.79	0.00	0.00	0.00	0.00	0.00	34.79	838.37	0.17	720.74	0.51	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0458	41.23	0.00	0.00	0.00	0.00	0.00	41.23	849.24	0.18	761.79	0.54	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0663	59.64	0.00	0.00	0.00	0.00	0.00	59.64	862.12	0.18	821.25	0.58	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1461	131.52	0.00	0.00	0.00	0.00	0.00	131.52	880.79	0.18	952.59	0.67	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1516	136.43	0.00	0.00	0.00	0.00	0.00	136.43	922.02	0.19	1088.82	0.77	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	964.78	0.20	1119.40	0.79	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	974.38	0.20	1149.98	0.81	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0634	57.09	0.00	0.00	0.00	0.00	0.00	57.09	983.98	0.20	1206.87	0.85	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0537	48.36	0.00	0.00	0.00	0.00	0.00	48.36	1001.83	0.21	1255.02	0.89	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0588	52.94	0.00	0.00	0.00	0.00	0.00	52.94	1016.95	0.21	1307.75	0.92	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0490	44.07	0.00	0.00	0.00	0.00	0.00	44.07	1033.50	0.22	1351.60	0.96	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0390	35.14	0.00	0.00	0.00	0.00	0.00	35.14	1047.27	0.22	1386.52	0.98	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0342	30.78	0.00	0.00	0.00	0.00	0.00	30.78	1058.23	0.22	1417.08	1.00	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	1067.82	0.22	1442.28	1.02	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0283	25.43	0.00	0.00	0.00	0.00	0.00	25.43	1075.73	0.22	1467.48	1.04	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1083.64	0.23	1472.61	1.04	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1085.25	0.23	1477.74	1.04	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1086.86	0.23	1481.53	1.05	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1088.05	0.23	1485.31	1.05	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1089.24	0.23	1491.78	1.05	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1091.27	0.23	1498.24	1.06	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0074	6.69	0.00	0.00	0.00	0.00	0.00	6.69	1093.30	0.23	1504.70	1.06	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1095.33	0.23	1509.83	1.07	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1096.93	0.23	1514.95	1.07	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1098.54	0.23	1520.08	1.07	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1100.15	0.23	1523.86	1.08	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1101.34	0.23	1526.31	1.08	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1102.11	0.23	1530.09	1.08	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0059	5.35	0.00	0.00	0.00	0.00	0.00	5.35	1103.30	0.23	1535.22	1.08	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1104.90	0.23	1539.00	1.09	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1106.09	0.23	1541.45	1.09	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1106.86	0.23	1545.23	1.09	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1108.05	0.23	1549.02	1.09	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1109.24	0.23	1552.80	1.10	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1110.42	0.23	1555.24	1.10	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1111.19	0.23	1559.03	1.10	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1112.38	0.23	1561.47	1.10	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1113.15	0.23	1565.26	1.11	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1114.33	0.23	1567.70	1.11	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0045	4.01	0.00	0.00	0.00	0.00	0.00	4.01	1115.10	0.23	1571.48	1.11	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1116.29	0.23	1573.93	1.11	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1117.05	0.23	1576.37	1.11	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1117.82	0.23	1578.81	1.12	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1118.59	0.23	1581.26	1.12	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1119.36	0.23	1583.70	1.12	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1120.12	0.23	1586.14	1.12	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0030	2.68	0.00	0.00	0.00	0.00	0.00	2.68	1120.89	0.23	1588.59	1.12	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1121.66	0.23	1588.35	1.12	0.00	0.00
						Total volume (cf)		1606.06									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 11-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.95ac

5/7/2024 LOT 11 BACK

Drainage Area (ac.)	0.9500	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2788 s.f. Bot. = 794 s.f. Max. Depth (d)= 4 Max. storage= 6759.79 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.4859	145.76	0.00	0.00	0.00	0.00	0.00	145.76	794.00	0.06	145.70	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.7906	237.18	0.00	0.00	0.00	0.00	0.00	237.18	836.98	0.06	382.82	0.23	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.8737	262.11	0.00	0.00	0.00	0.00	0.00	262.11	906.92	0.06	644.86	0.38	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.8183	245.49	0.00	0.00	0.00	0.00	0.00	245.49	984.22	0.07	890.28	0.53	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.2892	386.77	0.00	0.00	0.00	0.00	0.00	386.77	1056.61	0.07	1276.98	0.76	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.4832	444.95	0.00	0.00	0.00	0.00	0.00	444.95	1170.68	0.08	1721.84	1.02	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	1.7879	536.37	0.00	0.00	0.00	0.00	0.00	536.37	1301.91	0.09	2258.12	1.34	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.9541	586.23	0.00	0.00	0.00	0.00	0.00	586.23	1460.10	0.10	2844.25	1.68	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	2.8683	860.49	0.00	0.00	0.00	0.00	0.00	860.49	1633.00	0.11	3704.63	2.19	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	4.3366	1300.97	0.00	0.00	0.00	0.00	0.00	1300.97	1886.79	0.13	5005.47	2.96	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	3.9210	1176.31	0.00	0.00	0.00	0.00	0.00	1176.31	2270.51	0.16	6181.61	3.66	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.6244	187.31	0.00	0.00	0.00	0.00	0.00	187.31	2617.45	0.18	6368.74	3.77	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.65	0.19	6368.56	3.77	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.59	0.19	6368.37	3.77	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2672.54	0.19	6368.19	3.77	0.00	0.00	
					Total volume (cf)			6369.92								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0463	13.90	0.00	0.00	0.00	0.00	0.00	13.90	794.00	0.06	13.84	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0463	13.90	0.00	0.00	0.00	0.00	0.00	13.90	798.08	0.06	27.68	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	802.17	0.06	39.39	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	805.62	0.06	55.37	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	810.33	0.06	71.35	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	815.05	0.06	101.97	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	824.08	0.06	117.95	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	828.79	0.06	148.57	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	837.82	0.06	179.19	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0535	16.04	0.00	0.00	0.00	0.00	0.00	16.04	846.86	0.06	195.17	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0570	17.10	0.00	0.00	0.00	0.00	0.00	17.10	851.57	0.06	212.21	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	856.60	0.06	242.83	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	865.63	0.06	316.21	0.19	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	887.28	0.06	389.59	0.23	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2448	73.44	0.00	0.00	0.00	0.00	0.00	73.44	908.92	0.06	462.97	0.27	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.1735	52.06	0.00	0.00	0.00	0.00	0.00	52.06	930.57	0.06	514.96	0.30	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.3873	116.20	0.00	0.00	0.00	0.00	0.00	116.20	945.90	0.07	631.10	0.37	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4230	126.89	0.00	0.00	0.00	0.00	0.00	126.89	980.16	0.07	757.92	0.45	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3161	94.82	0.00	0.00	0.00	0.00	0.00	94.82	1017.57	0.07	852.67	0.50	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4230	126.89	0.00	0.00	0.00	0.00	0.00	126.89	1045.52	0.07	979.49	0.58	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.6368	191.03	0.00	0.00	0.00	0.00	0.00	191.03	1082.93	0.08	1170.45	0.69	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.5655	169.65	0.00	0.00	0.00	0.00	0.00	169.65	1139.26	0.08	1340.03	0.79	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.4942	148.27	0.00	0.00	0.00	0.00	0.00	148.27	1189.28	0.08	1488.22	0.88	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.5299	158.96	0.00	0.00	0.00	0.00	0.00	158.96	1232.99	0.09	1647.09	0.97	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.5655	169.65	0.00	0.00	0.00	0.00	0.00	169.65	1279.86	0.09	1816.66	1.07	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.9575	287.25	0.00	0.00	0.00	0.00	0.00	287.25	1329.88	0.09	2103.81	1.24	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.2426	372.77	0.00	0.00	0.00	0.00	0.00	372.77	1414.58	0.10	2476.49	1.47	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.7080	212.41	0.00	0.00	0.00	0.00	0.00	212.41	1524.51	0.11	2688.80	1.59	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	1.8840	565.20	0.00	0.00	0.00	0.00	0.00	565.20	1587.14	0.11	3253.88	1.93	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.0622	618.65	0.00	0.00	0.00	0.00	0.00	618.65	1753.83	0.12	3872.41	2.29	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.3829	714.86	0.00	0.00	0.00	0.00	0.00	714.86	1936.28	0.13	4587.13	2.71	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.5633	468.98	0.00	0.00	0.00	0.00	0.00	468.98	2147.11	0.15	5055.97	2.99	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.1735	52.06	0.00	0.00	0.00	0.00	0.00	52.06	2285.41	0.16	5107.87	3.02	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	2300.72	0.16	5138.39	3.04	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1023	30.68	0.00	0.00	0.00	0.00	0.00	30.68	2309.72	0.16	5168.91	3.06	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0214	6.41	0.00	0.00	0.00	0.00	0.00	6.41	2318.72	0.16	5175.16	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.57	0.16	5175.00	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.52	0.16	5174.84	3.06	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.47	0.16	5174.68	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.42	0.16	5174.52	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.38	0.16	5174.36	3.06	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.33	0.16	5174.19	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.28	0.16	5174.03	3.06	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2320.23	0.16	5173.87	3.06	0.00	0.00
					Total volume (cf)		5178.24								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0218	6.53	0.00	0.00	0.00	0.00	0.00	6.53	794.00	0.06	6.48	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	795.91	0.06	14.27	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	798.21	0.06	22.05	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	800.51	0.06	29.84	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	802.80	0.06	37.63	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	805.10	0.06	46.72	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	807.78	0.06	55.81	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	810.46	0.06	64.90	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	813.15	0.06	74.00	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	815.83	0.06	83.09	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0305	9.15	0.00	0.00	0.00	0.00	0.00	9.15	818.51	0.06	92.18	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	821.19	0.06	102.58	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	824.26	0.06	112.98	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	827.33	0.06	123.38	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	830.39	0.06	133.77	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	833.46	0.06	144.17	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	836.53	0.06	154.57	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	839.60	0.06	164.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	842.66	0.06	175.36	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	845.73	0.06	185.76	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	848.80	0.06	196.16	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	851.86	0.06	206.56	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	854.93	0.06	216.95	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	858.00	0.06	228.66	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0349	10.46	0.00	0.00	0.00	0.00	0.00	10.46	861.45	0.06	239.05	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	864.52	0.06	250.75	0.15	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	867.97	0.06	262.46	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	871.42	0.06	274.16	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	874.87	0.06	285.86	0.17	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	878.32	0.06	297.56	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	881.78	0.06	309.26	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	885.23	0.06	320.97	0.19	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	888.68	0.06	333.97	0.20	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	892.52	0.06	346.98	0.21	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	896.35	0.06	359.99	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	900.19	0.06	373.00	0.22	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0436	13.07	0.00	0.00	0.00	0.00	0.00	13.07	904.03	0.06	386.00	0.23	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	907.86	0.06	400.32	0.24	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	912.09	0.06	414.63	0.25	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0479	14.38	0.00	0.00	0.00	0.00	0.00	14.38	916.31	0.06	428.94	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	920.53	0.06	444.56	0.26	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0566	16.99	0.00	0.00	0.00	0.00	0.00	16.99	925.14	0.06	461.49	0.27	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0708	21.23	0.00	0.00	0.00	0.00	0.00	21.23	930.13	0.06	482.66	0.29	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0708	21.23	0.00	0.00	0.00	0.00	0.00	21.23	936.37	0.07	503.82	0.30	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1143	34.30	0.00	0.00	0.00	0.00	0.00	34.30	942.62	0.07	538.06	0.32	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1143	34.30	0.00	0.00	0.00	0.00	0.00	34.30	952.72	0.07	572.29	0.34	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1579	47.37	0.00	0.00	0.00	0.00	0.00	47.37	962.81	0.07	619.59	0.37	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1579	47.37	0.00	0.00	0.00	0.00	0.00	47.37	976.77	0.07	666.89	0.39	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2015	60.44	0.00	0.00	0.00	0.00	0.00	60.44	990.72	0.07	727.26	0.43	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2450	73.51	0.00	0.00	0.00	0.00	0.00	73.51	1008.53	0.07	800.70	0.47	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1030.19	0.07	887.21	0.52	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.3322	99.65	0.00	0.00	0.00	0.00	0.00	99.65	1055.71	0.07	986.79	0.58	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.3757	112.72	0.00	0.00	0.00	0.00	0.00	112.72	1085.08	0.08	1099.43	0.65	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.3757	112.72	0.00	0.00	0.00	0.00	0.00	112.72	1118.31	0.08	1212.07	0.72	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.4193	125.79	0.00	0.00	0.00	0.00	0.00	125.79	1151.54	0.08	1337.78	0.79	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.4629	138.86	0.00	0.00	0.00	0.00	0.00	138.86	1188.62	0.08	1476.56	0.87	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.5064	151.93	0.00	0.00	0.00	0.00	0.00	151.93	1229.55	0.09	1628.40	0.96	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.5064	151.93	0.00	0.00	0.00	0.00	0.00	151.93	1274.34	0.09	1780.24	1.05	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.5500	165.00	0.00	0.00	0.00	0.00	0.00	165.00	1319.13	0.09	1945.15	1.15	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.5936	178.07	0.00	0.00	0.00	0.00	0.00	178.07	1367.78	0.09	2123.12	1.26	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.8114	243.42	0.00	0.00	0.00	0.00	0.00	243.42	1420.28	0.10	2366.44	1.40	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	1.0292	308.77	0.00	0.00	0.00	0.00	0.00	308.77	1492.05	0.10	2675.10	1.58	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	1.1599	347.98	0.00	0.00	0.00	0.00	0.00	347.98	1583.10	0.11	3022.97	1.79	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	1.2906	387.18	0.00	0.00	0.00	0.00	0.00	387.18	1685.71	0.12	3410.03	2.02	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	1.5084	452.53	0.00	0.00	0.00	0.00	0.00	452.53	1799.89	0.12	3862.44	2.29	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.9005	570.16	0.00	0.00	0.00	0.00	0.00	570.16	1933.34	0.13	4432.47	2.62	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	2101.49	0.15	4518.90	2.67	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0392	11.76	0.00	0.00	0.00	0.00	0.00	11.76	2126.98	0.15	4530.52	2.68	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	2130.41	0.15	4538.21	2.69	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0218	6.53	0.00	0.00	0.00	0.00	0.00	6.53	2132.68	0.15	4544.60	2.69	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0131	3.92	0.00	0.00	0.00	0.00	0.00	3.92	2134.56	0.15	4548.37	2.69	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0087	2.61	0.00	0.00	0.00	0.00	0.00	2.61	2135.68	0.15	4550.84	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.40	0.15	4550.69	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.36	0.15	4550.54	2.69	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.32	0.15	4550.39	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.27	0.15	4550.24	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.23	0.15	4550.10	2.69	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.19	0.15	4549.95	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.14	0.15	4549.80	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.10	0.15	4549.65	2.69	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.05	0.15	4549.50	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2136.01	0.15	4549.35	2.69	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2135.97	0.15	4549.21	2.69	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2135.92	0.15	4549.06	2.69	0.00	0.00
					Total volume (cf)		4556.26								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	794.00	0.17	3.32	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	794.98	0.17	8.38	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	796.47	0.17	13.43	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	797.96	0.17	20.23	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	799.97	0.17	25.29	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	801.46	0.17	30.35	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	802.95	0.17	35.41	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	804.44	0.17	42.21	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	806.45	0.17	49.00	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	808.46	0.17	55.80	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	810.46	0.17	64.34	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	812.98	0.17	72.88	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	815.50	0.17	81.42	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	818.02	0.17	89.95	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	820.53	0.17	98.49	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	823.05	0.17	108.77	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	826.08	0.17	119.04	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	829.12	0.17	131.06	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	832.66	0.17	143.08	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	836.21	0.17	156.84	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	840.26	0.18	167.11	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0135	12.19	0.00	0.00	0.00	0.00	0.00	12.19	843.29	0.18	179.12	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	846.84	0.18	192.88	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0155	13.93	0.00	0.00	0.00	0.00	0.00	13.93	850.90	0.18	206.63	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0174	15.67	0.00	0.00	0.00	0.00	0.00	15.67	854.95	0.18	222.13	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0174	15.67	0.00	0.00	0.00	0.00	0.00	15.67	859.52	0.18	237.62	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	864.09	0.18	254.86	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	869.18	0.18	272.09	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	874.26	0.18	289.33	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0213	19.16	0.00	0.00	0.00	0.00	0.00	19.16	879.35	0.18	308.30	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	884.94	0.18	329.01	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0252	22.64	0.00	0.00	0.00	0.00	0.00	22.64	891.05	0.19	351.47	0.21	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	897.68	0.19	377.40	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	905.33	0.19	403.34	0.24	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0310	27.86	0.00	0.00	0.00	0.00	0.00	27.86	912.98	0.19	431.01	0.26	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0329	29.61	0.00	0.00	0.00	0.00	0.00	29.61	921.14	0.19	460.42	0.27	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	929.82	0.19	493.32	0.29	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	939.52	0.20	527.95	0.31	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0406	36.57	0.00	0.00	0.00	0.00	0.00	36.57	949.73	0.20	564.32	0.33	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0426	38.31	0.00	0.00	0.00	0.00	0.00	38.31	960.46	0.20	602.44	0.36	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	971.71	0.20	628.36	0.37	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0290	26.12	0.00	0.00	0.00	0.00	0.00	26.12	979.35	0.20	654.28	0.39	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	987.00	0.21	688.90	0.41	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0387	34.83	0.00	0.00	0.00	0.00	0.00	34.83	997.21	0.21	723.52	0.43	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1007.42	0.21	756.40	0.45	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1017.12	0.21	789.28	0.47	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0329	29.61	0.00	0.00	0.00	0.00	0.00	29.61	1026.82	0.21	818.67	0.48	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1035.49	0.22	849.80	0.50	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0484	43.54	0.00	0.00	0.00	0.00	0.00	43.54	1044.67	0.22	893.12	0.53	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0503	45.28	0.00	0.00	0.00	0.00	0.00	45.28	1057.45	0.22	938.18	0.56	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0596	53.65	0.00	0.00	0.00	0.00	0.00	53.65	1070.74	0.22	991.61	0.59	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.0862	77.62	0.00	0.00	0.00	0.00	0.00	77.62	1086.50	0.23	1068.99	0.63	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.1902	171.16	0.00	0.00	0.00	0.00	0.00	171.16	1109.33	0.23	1239.92	0.73	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.1973	177.55	0.00	0.00	0.00	0.00	0.00	177.55	1159.75	0.24	1417.23	0.84	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1212.05	0.25	1457.03	0.86	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1223.79	0.25	1496.83	0.89	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0826	74.30	0.00	0.00	0.00	0.00	0.00	74.30	1235.53	0.26	1570.87	0.93	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0699	62.93	0.00	0.00	0.00	0.00	0.00	62.93	1257.37	0.26	1633.54	0.97	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0766	68.90	0.00	0.00	0.00	0.00	0.00	68.90	1275.86	0.27	1702.17	1.01	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0637	57.35	0.00	0.00	0.00	0.00	0.00	57.35	1296.11	0.27	1759.26	1.04	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0508	45.72	0.00	0.00	0.00	0.00	0.00	45.72	1312.95	0.27	1804.71	1.07	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0445	40.05	0.00	0.00	0.00	0.00	0.00	40.05	1326.35	0.28	1844.49	1.09	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1338.09	0.28	1877.30	1.11	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0368	33.09	0.00	0.00	0.00	0.00	0.00	33.09	1347.76	0.28	1910.10	1.13	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1357.44	0.28	1916.79	1.13	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1359.41	0.28	1923.47	1.14	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1361.38	0.28	1928.41	1.14	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1362.84	0.28	1933.35	1.14	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1364.30	0.28	1941.77	1.15	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1366.78	0.28	1950.20	1.15	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0097	8.71	0.00	0.00	0.00	0.00	0.00	8.71	1369.27	0.29	1958.62	1.16	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1371.75	0.29	1965.30	1.16	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1373.72	0.29	1971.98	1.17	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1375.69	0.29	1978.66	1.17	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1377.66	0.29	1983.60	1.17	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1379.12	0.29	1986.79	1.18	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1380.06	0.29	1991.73	1.18	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0077	6.97	0.00	0.00	0.00	0.00	0.00	6.97	1381.52	0.29	1998.41	1.18	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1383.49	0.29	2003.34	1.19	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1384.95	0.29	2006.54	1.19	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1385.89	0.29	2011.47	1.19	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1387.34	0.29	2016.41	1.19	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1388.80	0.29	2021.34	1.20	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1390.26	0.29	2024.54	1.20	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1391.20	0.29	2029.47	1.20	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1392.65	0.29	2032.66	1.20	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1393.59	0.29	2037.60	1.21	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1395.05	0.29	2040.79	1.21	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0058	5.22	0.00	0.00	0.00	0.00	0.00	5.22	1395.99	0.29	2045.72	1.21	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1397.45	0.29	2048.92	1.21	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1398.39	0.29	2052.11	1.21	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1399.33	0.29	2055.30	1.22	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1400.27	0.29	2058.49	1.22	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1401.21	0.29	2061.68	1.22	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1402.15	0.29	2064.87	1.22	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0039	3.48	0.00	0.00	0.00	0.00	0.00	3.48	1403.10	0.29	2068.06	1.22	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1404.04	0.29	2067.77	1.22	0.00	0.00
						Total volume (cf)	2090.08									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=0.41ac+0.09ac typ street frontage=0.50ac

1.14

5/7/2024 LOT 12-FRONT

Drainage Area (ac.)	0.5000	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 2118 s.f. Bot. = 756 s.f. Max. Depth (d)= 3 Max. storage= 4139.39 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.2557	76.71	0.00	0.00	0.00	0.00	0.00	76.71	756.00	0.05	76.66	0.06	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.4161	124.83	0.00	0.00	0.00	0.00	0.00	124.83	781.22	0.05	201.44	0.15	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	0.4598	137.95	0.00	0.00	0.00	0.00	0.00	137.95	822.28	0.06	339.33	0.25	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.4307	129.20	0.00	0.00	0.00	0.00	0.00	129.20	867.65	0.06	468.47	0.34	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	0.6785	203.56	0.00	0.00	0.00	0.00	0.00	203.56	910.14	0.06	671.97	0.49	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	0.7806	234.18	0.00	0.00	0.00	0.00	0.00	234.18	977.10	0.07	906.09	0.66	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	0.9410	282.30	0.00	0.00	0.00	0.00	0.00	282.30	1054.13	0.07	1188.31	0.86	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	1.0285	308.54	0.00	0.00	0.00	0.00	0.00	308.54	1147.00	0.08	1496.78	1.08	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	1.5096	452.89	0.00	0.00	0.00	0.00	0.00	452.89	1248.49	0.09	1949.58	1.41	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	2.2824	684.72	0.00	0.00	0.00	0.00	0.00	684.72	1397.48	0.10	2634.20	1.91	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	2.0637	619.11	0.00	0.00	0.00	0.00	0.00	619.11	1622.74	0.11	3253.20	2.36	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.3286	98.58	0.00	0.00	0.00	0.00	0.00	98.58	1826.41	0.13	3351.66	2.43	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.81	0.13	3351.53	2.43	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.77	0.13	3351.40	2.43	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1858.72	0.13	3351.27	2.43	0.00	0.00	
					Total volume (cf)			3352.59								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	756.00	0.05	7.26	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0244	7.31	0.00	0.00	0.00	0.00	0.00	7.31	758.39	0.05	14.52	0.01	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	760.78	0.05	20.66	0.01	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	762.80	0.05	29.05	0.02	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	765.56	0.05	37.43	0.03	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	768.32	0.05	53.53	0.04	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	773.61	0.05	61.91	0.04	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	776.37	0.05	78.01	0.06	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	781.67	0.05	94.10	0.07	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0281	8.44	0.00	0.00	0.00	0.00	0.00	8.44	786.96	0.05	102.48	0.07	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0300	9.00	0.00	0.00	0.00	0.00	0.00	9.00	789.72	0.05	111.43	0.08	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	792.66	0.06	127.52	0.09	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	797.96	0.06	166.12	0.12	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	810.66	0.06	204.72	0.15	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.1288	38.65	0.00	0.00	0.00	0.00	0.00	38.65	823.36	0.06	243.31	0.18	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	836.06	0.06	270.65	0.20	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.2039	61.16	0.00	0.00	0.00	0.00	0.00	61.16	845.05	0.06	331.75	0.24	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	865.16	0.06	398.48	0.29	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.1664	49.91	0.00	0.00	0.00	0.00	0.00	49.91	887.11	0.06	448.32	0.32	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.2226	66.79	0.00	0.00	0.00	0.00	0.00	66.79	903.51	0.06	515.05	0.37	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.3351	100.54	0.00	0.00	0.00	0.00	0.00	100.54	925.47	0.06	615.53	0.45	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	958.53	0.07	704.75	0.51	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.2601	78.04	0.00	0.00	0.00	0.00	0.00	78.04	987.89	0.07	782.72	0.57	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.2789	83.66	0.00	0.00	0.00	0.00	0.00	83.66	1013.54	0.07	866.32	0.63	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.2976	89.29	0.00	0.00	0.00	0.00	0.00	89.29	1041.05	0.07	955.53	0.69	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	0.5039	151.18	0.00	0.00	0.00	0.00	0.00	151.18	1070.40	0.07	1106.64	0.80	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	0.6540	196.19	0.00	0.00	0.00	0.00	0.00	196.19	1120.12	0.08	1302.76	0.94	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.3727	111.80	0.00	0.00	0.00	0.00	0.00	111.80	1184.65	0.08	1414.48	1.03	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	0.9916	297.47	0.00	0.00	0.00	0.00	0.00	297.47	1221.41	0.08	1711.86	1.24	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	1.0853	325.60	0.00	0.00	0.00	0.00	0.00	325.60	1319.26	0.09	2037.38	1.48	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	1.2541	376.24	0.00	0.00	0.00	0.00	0.00	376.24	1426.37	0.10	2413.52	1.75	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	0.8228	246.83	0.00	0.00	0.00	0.00	0.00	246.83	1550.13	0.11	2660.24	1.93	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.0913	27.40	0.00	0.00	0.00	0.00	0.00	27.40	1631.31	0.11	2687.53	1.95	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1640.29	0.11	2703.56	1.96	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.0538	16.15	0.00	0.00	0.00	0.00	0.00	16.15	1645.56	0.11	2719.60	1.97	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0113	3.38	0.00	0.00	0.00	0.00	0.00	3.38	1650.84	0.11	2722.86	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.91	0.11	2722.74	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.88	0.11	2722.63	1.97	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.84	0.11	2722.51	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.80	0.11	2722.40	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.76	0.11	2722.28	1.97	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.72	0.11	2722.17	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.69	0.11	2722.05	1.97	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1651.65	0.11	2721.94	1.97	0.00	0.00
					Total volume (cf)		2725.39								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	756.00	0.05	3.39	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	757.11	0.05	7.46	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	758.46	0.05	11.54	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	759.80	0.05	15.61	0.01	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	761.14	0.05	19.69	0.01	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	762.48	0.05	24.45	0.02	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	764.04	0.05	29.21	0.02	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	765.61	0.05	33.97	0.02	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	767.18	0.05	38.73	0.03	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	768.74	0.05	43.50	0.03	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0161	4.82	0.00	0.00	0.00	0.00	0.00	4.82	770.31	0.05	48.26	0.03	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	771.88	0.05	53.71	0.04	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	773.67	0.05	59.16	0.04	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	775.46	0.05	64.61	0.05	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	777.26	0.05	70.05	0.05	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	779.05	0.05	75.50	0.05	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	780.84	0.05	80.95	0.06	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.64	0.05	86.40	0.06	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	784.43	0.05	91.85	0.07	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	786.22	0.05	97.30	0.07	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	788.01	0.05	102.75	0.07	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	789.81	0.05	108.19	0.08	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	791.60	0.05	113.64	0.08	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	793.39	0.06	119.78	0.09	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0183	5.50	0.00	0.00	0.00	0.00	0.00	5.50	795.41	0.06	125.23	0.09	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	797.20	0.06	131.36	0.10	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	799.22	0.06	137.50	0.10	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	801.24	0.06	143.63	0.10	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	803.26	0.06	149.77	0.11	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	805.28	0.06	155.90	0.11	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	807.30	0.06	162.04	0.12	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	809.32	0.06	168.17	0.12	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	811.33	0.06	175.00	0.13	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	813.58	0.06	181.82	0.13	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	815.82	0.06	188.64	0.14	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	818.07	0.06	195.46	0.14	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0229	6.88	0.00	0.00	0.00	0.00	0.00	6.88	820.31	0.06	202.28	0.15	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	822.56	0.06	209.79	0.15	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	825.03	0.06	217.30	0.16	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0252	7.57	0.00	0.00	0.00	0.00	0.00	7.57	827.50	0.06	224.81	0.16	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0275	8.25	0.00	0.00	0.00	0.00	0.00	8.25	829.97	0.06	233.01	0.17	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0298	8.94	0.00	0.00	0.00	0.00	0.00	8.94	832.67	0.06	241.89	0.18	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	835.59	0.06	253.01	0.18	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0372	11.17	0.00	0.00	0.00	0.00	0.00	11.17	839.25	0.06	264.12	0.19	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	842.91	0.06	282.12	0.20	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.0602	18.05	0.00	0.00	0.00	0.00	0.00	18.05	848.83	0.06	300.11	0.22	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	854.75	0.06	324.98	0.24	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.0831	24.93	0.00	0.00	0.00	0.00	0.00	24.93	862.93	0.06	349.86	0.25	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.1060	31.81	0.00	0.00	0.00	0.00	0.00	31.81	871.11	0.06	381.61	0.28	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.1290	38.69	0.00	0.00	0.00	0.00	0.00	38.69	881.56	0.06	420.23	0.30	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	894.27	0.06	465.74	0.34	0.00	0.00

4:20	2	0.91	0.56	N/A	0.3468	0.1748	52.45	0.00	0.00	0.00	0.00	0.00	52.45	909.24	0.06	518.12	0.38	0.00	0.00
4:25	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	926.48	0.06	577.38	0.42	0.00	0.00
4:30	2.1	0.96	0.56	N/A	0.3922	0.1978	59.33	0.00	0.00	0.00	0.00	0.00	59.33	945.98	0.07	636.64	0.46	0.00	0.00
4:35	2.2	1.00	0.56	N/A	0.4377	0.2207	66.20	0.00	0.00	0.00	0.00	0.00	66.20	965.48	0.07	702.78	0.51	0.00	0.00
4:40	2.3	1.05	0.56	N/A	0.4832	0.2436	73.08	0.00	0.00	0.00	0.00	0.00	73.08	987.24	0.07	775.80	0.56	0.00	0.00
4:45	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1011.26	0.07	855.69	0.62	0.00	0.00
4:50	2.4	1.09	0.56	N/A	0.5287	0.2665	79.96	0.00	0.00	0.00	0.00	0.00	79.96	1037.55	0.07	935.58	0.68	0.00	0.00
4:55	2.5	1.14	0.56	N/A	0.5742	0.2895	86.84	0.00	0.00	0.00	0.00	0.00	86.84	1063.84	0.07	1022.35	0.74	0.00	0.00
5:00	2.6	1.18	0.56	N/A	0.6196	0.3124	93.72	0.00	0.00	0.00	0.00	0.00	93.72	1092.39	0.08	1115.99	0.81	0.00	0.00
5:05	3.1	1.41	0.56	N/A	0.8470	0.4270	128.11	0.00	0.00	0.00	0.00	0.00	128.11	1123.20	0.08	1244.03	0.90	0.00	0.00
5:10	3.6	1.64	0.56	N/A	1.0744	0.5417	162.51	0.00	0.00	0.00	0.00	0.00	162.51	1165.33	0.08	1406.45	1.02	0.00	0.00
5:15	3.9	1.77	0.56	N/A	1.2109	0.6105	183.14	0.00	0.00	0.00	0.00	0.00	183.14	1218.77	0.08	1589.51	1.15	0.00	0.00
5:20	4.2	1.91	0.56	N/A	1.3473	0.6793	203.78	0.00	0.00	0.00	0.00	0.00	203.78	1279.00	0.09	1793.21	1.30	0.00	0.00
5:25	4.7	2.14	0.56	N/A	1.5747	0.7939	238.18	0.00	0.00	0.00	0.00	0.00	238.18	1346.03	0.09	2031.29	1.47	0.00	0.00
5:30	5.6	2.55	0.56	N/A	1.9840	1.0003	300.09	0.00	0.00	0.00	0.00	0.00	300.09	1424.36	0.10	2331.28	1.69	0.00	0.00
5:35	1.9	0.86	0.56	N/A	0.3013	0.1519	45.57	0.00	0.00	0.00	0.00	0.00	45.57	1523.07	0.11	2376.74	1.72	0.00	0.00
5:40	0.9	0.41	0.56	0.37	0.0409	0.0206	6.19	0.00	0.00	0.00	0.00	0.00	6.19	1538.03	0.11	2382.82	1.73	0.00	0.00
5:45	0.6	0.27	0.56	0.25	0.0273	0.0138	4.13	0.00	0.00	0.00	0.00	0.00	4.13	1540.03	0.11	2386.84	1.73	0.00	0.00
5:50	0.5	0.23	0.56	0.20	0.0227	0.0115	3.44	0.00	0.00	0.00	0.00	0.00	3.44	1541.35	0.11	2390.18	1.73	0.00	0.00
5:55	0.3	0.14	0.56	0.12	0.0136	0.0069	2.06	0.00	0.00	0.00	0.00	0.00	2.06	1542.45	0.11	2392.13	1.73	0.00	0.00
6:00	0.2	0.09	0.56	0.08	0.0091	0.0046	1.38	0.00	0.00	0.00	0.00	0.00	1.38	1543.09	0.11	2393.40	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.51	0.11	2393.29	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.48	0.11	2393.19	1.73	0.00	0.00
6:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.44	0.11	2393.08	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.40	0.11	2392.97	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.37	0.11	2392.86	1.73	0.00	0.00
6:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.33	0.11	2392.76	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.30	0.11	2392.65	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.26	0.11	2392.54	1.73	0.00	0.00
6:45	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.23	0.11	2392.44	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.19	0.11	2392.33	1.73	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.16	0.11	2392.22	1.73	0.00	0.00
7:00	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1543.12	0.11	2392.11	1.73	0.00	0.00
					Total volume (cf)		2398.03								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	756.00	0.16	1.68	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	756.55	0.16	4.27	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	757.40	0.16	6.86	0.00	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	758.26	0.16	10.37	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	759.41	0.16	12.96	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	760.26	0.16	15.55	0.01	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	761.12	0.16	18.14	0.01	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	761.97	0.16	21.65	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	763.12	0.16	25.16	0.02	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	764.28	0.16	28.66	0.02	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	765.43	0.16	33.09	0.02	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	766.89	0.16	37.51	0.03	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	768.34	0.16	41.93	0.03	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	769.80	0.16	46.36	0.03	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	771.25	0.16	50.78	0.04	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	772.71	0.16	56.12	0.04	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	774.46	0.16	61.45	0.04	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	776.22	0.16	67.71	0.05	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	778.28	0.16	73.96	0.05	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	780.34	0.16	81.13	0.06	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0061	5.50	0.00	0.00	0.00	0.00	0.00	5.50	782.70	0.16	86.47	0.06	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0071	6.42	0.00	0.00	0.00	0.00	0.00	6.42	784.45	0.16	92.72	0.07	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	786.51	0.16	99.89	0.07	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0081	7.33	0.00	0.00	0.00	0.00	0.00	7.33	788.87	0.16	107.06	0.08	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	791.23	0.16	115.14	0.08	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0092	8.25	0.00	0.00	0.00	0.00	0.00	8.25	793.89	0.17	123.23	0.09	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	796.55	0.17	132.23	0.10	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	799.51	0.17	141.23	0.10	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0102	9.17	0.00	0.00	0.00	0.00	0.00	9.17	802.47	0.17	150.22	0.11	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0112	10.08	0.00	0.00	0.00	0.00	0.00	10.08	805.43	0.17	160.14	0.12	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0122	11.00	0.00	0.00	0.00	0.00	0.00	11.00	808.69	0.17	170.97	0.12	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0132	11.92	0.00	0.00	0.00	0.00	0.00	11.92	812.25	0.17	182.72	0.13	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	816.12	0.17	196.29	0.14	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	820.59	0.17	209.87	0.15	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0163	14.67	0.00	0.00	0.00	0.00	0.00	14.67	825.06	0.17	224.37	0.16	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	829.82	0.17	239.77	0.17	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	834.89	0.17	257.02	0.19	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	840.57	0.18	275.17	0.20	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0214	19.25	0.00	0.00	0.00	0.00	0.00	19.25	846.54	0.18	294.24	0.21	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0224	20.16	0.00	0.00	0.00	0.00	0.00	20.16	852.82	0.18	314.23	0.23	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	859.39	0.18	327.80	0.24	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0153	13.75	0.00	0.00	0.00	0.00	0.00	13.75	863.86	0.18	341.37	0.25	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	868.32	0.18	359.52	0.26	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0204	18.33	0.00	0.00	0.00	0.00	0.00	18.33	874.29	0.18	377.67	0.27	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	880.27	0.18	394.90	0.29	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	885.94	0.18	412.13	0.30	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0173	15.58	0.00	0.00	0.00	0.00	0.00	15.58	891.60	0.19	427.53	0.31	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0183	16.50	0.00	0.00	0.00	0.00	0.00	16.50	896.67	0.19	443.84	0.32	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0255	22.91	0.00	0.00	0.00	0.00	0.00	22.91	902.04	0.19	466.56	0.34	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0265	23.83	0.00	0.00	0.00	0.00	0.00	23.83	909.52	0.19	490.21	0.36	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0314	28.24	0.00	0.00	0.00	0.00	0.00	28.24	917.29	0.19	518.25	0.38	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.0454	40.85	0.00	0.00	0.00	0.00	0.00	40.85	926.52	0.19	558.91	0.41	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.1001	90.08	0.00	0.00	0.00	0.00	0.00	90.08	939.90	0.20	648.80	0.47	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.1038	93.45	0.00	0.00	0.00	0.00	0.00	93.45	969.48	0.20	742.04	0.54	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1000.16	0.21	762.91	0.55	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1007.02	0.21	783.78	0.57	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0435	39.11	0.00	0.00	0.00	0.00	0.00	39.11	1013.89	0.21	822.68	0.60	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0368	33.12	0.00	0.00	0.00	0.00	0.00	33.12	1026.69	0.21	855.59	0.62	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0403	36.26	0.00	0.00	0.00	0.00	0.00	36.26	1037.52	0.22	891.63	0.65	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0335	30.19	0.00	0.00	0.00	0.00	0.00	30.19	1049.38	0.22	921.60	0.67	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0267	24.07	0.00	0.00	0.00	0.00	0.00	24.07	1059.24	0.22	945.45	0.69	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0234	21.08	0.00	0.00	0.00	0.00	0.00	21.08	1067.08	0.22	966.30	0.70	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1073.95	0.22	983.50	0.71	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0193	17.41	0.00	0.00	0.00	0.00	0.00	17.41	1079.60	0.22	1000.69	0.73	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1085.26	0.23	1004.13	0.73	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1086.39	0.23	1007.57	0.73	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1087.52	0.23	1010.09	0.73	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1088.35	0.23	1012.61	0.73	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1089.18	0.23	1016.97	0.74	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1090.62	0.23	1021.32	0.74	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0051	4.58	0.00	0.00	0.00	0.00	0.00	4.58	1092.05	0.23	1025.68	0.74	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1093.48	0.23	1029.12	0.75	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1094.61	0.23	1032.56	0.75	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1095.75	0.23	1035.99	0.75	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1096.88	0.23	1038.51	0.75	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1097.71	0.23	1040.12	0.75	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1098.23	0.23	1042.64	0.76	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0041	3.67	0.00	0.00	0.00	0.00	0.00	3.67	1099.06	0.23	1046.08	0.76	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1100.20	0.23	1048.60	0.76	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1101.02	0.23	1050.20	0.76	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1101.55	0.23	1052.72	0.76	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1102.38	0.23	1055.24	0.76	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1103.21	0.23	1057.76	0.77	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1104.04	0.23	1059.37	0.77	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1104.57	0.23	1061.88	0.77	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1105.40	0.23	1063.49	0.77	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1105.92	0.23	1066.01	0.77	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1106.75	0.23	1067.61	0.77	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0031	2.75	0.00	0.00	0.00	0.00	0.00	2.75	1107.28	0.23	1070.13	0.78	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.11	0.23	1071.73	0.78	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1108.64	0.23	1073.33	0.78	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.16	0.23	1074.94	0.78	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1109.69	0.23	1076.54	0.78	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.22	0.23	1078.14	0.78	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1110.74	0.23	1079.74	0.78	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0020	1.83	0.00	0.00	0.00	0.00	0.00	1.83	1111.27	0.23	1081.34	0.78	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1111.80	0.23	1081.11	0.78	0.00	0.00
						Total volume (cf)		1100.04									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.14ac

5/7/2024 LOT 12-BACK

Drainage Area (ac.)	1.1400	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3132 s.f. Bot. = 947 s.f. Max. Depth (d)= 4 Max. storage= 7734.95 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5830	174.91	0.00	0.00	0.00	0.00	0.00	174.91	947.00	0.07	174.84	0.09	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9487	284.61	0.00	0.00	0.00	0.00	0.00	284.61	996.39	0.07	459.38	0.24	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0484	314.53	0.00	0.00	0.00	0.00	0.00	314.53	1076.77	0.07	773.84	0.40	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9819	294.58	0.00	0.00	0.00	0.00	0.00	294.58	1165.60	0.08	1068.34	0.55	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5471	464.13	0.00	0.00	0.00	0.00	0.00	464.13	1248.79	0.09	1532.38	0.79	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7798	533.94	0.00	0.00	0.00	0.00	0.00	533.94	1379.87	0.10	2066.22	1.07	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1455	643.64	0.00	0.00	0.00	0.00	0.00	643.64	1530.67	0.11	2709.75	1.40	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3449	703.48	0.00	0.00	0.00	0.00	0.00	703.48	1712.46	0.12	3413.11	1.77	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.4420	1032.59	0.00	0.00	0.00	0.00	0.00	1032.59	1911.15	0.13	4445.57	2.30	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.2039	1561.16	0.00	0.00	0.00	0.00	0.00	1561.16	2202.80	0.15	6006.58	3.11	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.7052	1411.57	0.00	0.00	0.00	0.00	0.00	1411.57	2643.76	0.18	7417.96	3.84	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7492	224.77	0.00	0.00	0.00	0.00	0.00	224.77	3042.46	0.21	7642.52	3.95	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.89	0.22	7642.31	3.95	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.83	0.22	7642.09	3.95	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3105.77	0.22	7641.87	3.95	0.00	0.00	
					Total volume (cf)			7643.90								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0556	16.68	0.00	0.00	0.00	0.00	0.00	16.68	947.00	0.07	16.61	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0556	16.68	0.00	0.00	0.00	0.00	0.00	16.68	951.69	0.07	33.22	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0470	14.11	0.00	0.00	0.00	0.00	0.00	14.11	956.38	0.07	47.27	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	960.35	0.07	66.44	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	965.77	0.07	85.62	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	971.19	0.07	122.37	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	981.57	0.07	141.54	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	986.98	0.07	178.29	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	997.36	0.07	215.03	0.11	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0641	19.24	0.00	0.00	0.00	0.00	0.00	19.24	1007.74	0.07	234.20	0.12	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0684	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1013.16	0.07	254.66	0.13	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	1018.94	0.07	291.40	0.15	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1029.32	0.07	379.46	0.20	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1054.19	0.07	467.52	0.24	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2938	88.13	0.00	0.00	0.00	0.00	0.00	88.13	1079.07	0.07	555.57	0.29	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2082	62.47	0.00	0.00	0.00	0.00	0.00	62.47	1103.94	0.08	617.96	0.32	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4648	139.44	0.00	0.00	0.00	0.00	0.00	139.44	1121.57	0.08	757.33	0.39	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.5076	152.27	0.00	0.00	0.00	0.00	0.00	152.27	1160.93	0.08	909.52	0.47	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3793	113.79	0.00	0.00	0.00	0.00	0.00	113.79	1203.92	0.08	1023.22	0.53	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.5076	152.27	0.00	0.00	0.00	0.00	0.00	152.27	1236.04	0.09	1175.41	0.61	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7641	229.24	0.00	0.00	0.00	0.00	0.00	229.24	1279.03	0.09	1404.56	0.73	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6786	203.58	0.00	0.00	0.00	0.00	0.00	203.58	1343.77	0.09	1608.05	0.83	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5931	177.93	0.00	0.00	0.00	0.00	0.00	177.93	1401.25	0.10	1785.88	0.92	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6359	190.76	0.00	0.00	0.00	0.00	0.00	190.76	1451.48	0.10	1976.53	1.02	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6786	203.58	0.00	0.00	0.00	0.00	0.00	203.58	1505.34	0.10	2180.01	1.13	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1490	344.70	0.00	0.00	0.00	0.00	0.00	344.70	1562.82	0.11	2524.60	1.31	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4911	447.32	0.00	0.00	0.00	0.00	0.00	447.32	1660.16	0.12	2971.81	1.54	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8497	254.90	0.00	0.00	0.00	0.00	0.00	254.90	1786.49	0.12	3226.58	1.67	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2608	678.24	0.00	0.00	0.00	0.00	0.00	678.24	1858.46	0.13	3904.69	2.02	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4746	742.38	0.00	0.00	0.00	0.00	0.00	742.38	2050.01	0.14	4646.93	2.40	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.8594	857.83	0.00	0.00	0.00	0.00	0.00	857.83	2259.68	0.16	5504.60	2.85	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8759	562.78	0.00	0.00	0.00	0.00	0.00	562.78	2501.96	0.17	6067.21	3.14	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2082	62.47	0.00	0.00	0.00	0.00	0.00	62.47	2660.89	0.18	6129.50	3.17	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	2678.49	0.19	6166.13	3.19	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1227	36.81	0.00	0.00	0.00	0.00	0.00	36.81	2688.83	0.19	6202.75	3.21	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	2699.18	0.19	6210.26	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.30	0.19	6210.08	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.25	0.19	6209.89	3.21	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.20	0.19	6209.70	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.14	0.19	6209.51	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.09	0.19	6209.33	3.21	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2701.04	0.19	6209.14	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2700.98	0.19	6208.95	3.21	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2700.93	0.19	6208.76	3.21	0.00	0.00
					Total volume (cf)		6213.88								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	947.00	0.07	7.78	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	949.20	0.07	17.12	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	951.84	0.07	26.46	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	954.48	0.07	35.81	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	957.12	0.07	45.15	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	959.75	0.07	56.06	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	962.84	0.07	66.98	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	965.92	0.07	77.89	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	969.00	0.07	88.80	0.05	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	972.08	0.07	99.71	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0366	10.98	0.00	0.00	0.00	0.00	0.00	10.98	975.17	0.07	110.62	0.06	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	978.25	0.07	123.10	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	981.77	0.07	135.58	0.07	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	985.30	0.07	148.06	0.08	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	988.82	0.07	160.54	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	992.35	0.07	173.01	0.09	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	995.87	0.07	185.49	0.10	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	999.40	0.07	197.97	0.10	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1002.92	0.07	210.45	0.11	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1006.45	0.07	222.92	0.12	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1009.97	0.07	235.40	0.12	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1013.50	0.07	247.88	0.13	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1017.02	0.07	260.35	0.13	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1020.55	0.07	274.40	0.14	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0418	12.55	0.00	0.00	0.00	0.00	0.00	12.55	1024.51	0.07	286.87	0.15	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1028.04	0.07	300.92	0.16	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1032.00	0.07	314.96	0.16	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1035.97	0.07	329.01	0.17	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1039.94	0.07	343.05	0.18	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1043.91	0.07	357.09	0.18	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1047.87	0.07	371.13	0.19	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	1051.84	0.07	385.18	0.20	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1055.81	0.07	400.79	0.21	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1060.22	0.07	416.40	0.22	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1064.63	0.07	432.01	0.22	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1069.04	0.07	447.62	0.23	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0523	15.68	0.00	0.00	0.00	0.00	0.00	15.68	1073.44	0.07	463.23	0.24	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1077.85	0.07	480.40	0.25	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1082.71	0.08	497.58	0.26	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0575	17.25	0.00	0.00	0.00	0.00	0.00	17.25	1087.56	0.08	514.76	0.27	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0627	18.82	0.00	0.00	0.00	0.00	0.00	18.82	1092.41	0.08	533.50	0.28	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0680	20.39	0.00	0.00	0.00	0.00	0.00	20.39	1097.71	0.08	553.81	0.29	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0849	25.48	0.00	0.00	0.00	0.00	0.00	25.48	1103.44	0.08	579.21	0.30	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0849	25.48	0.00	0.00	0.00	0.00	0.00	25.48	1110.62	0.08	604.61	0.31	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1372	41.16	0.00	0.00	0.00	0.00	0.00	41.16	1117.79	0.08	645.70	0.33	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1372	41.16	0.00	0.00	0.00	0.00	0.00	41.16	1129.40	0.08	686.78	0.36	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1895	56.84	0.00	0.00	0.00	0.00	0.00	56.84	1141.00	0.08	743.54	0.38	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1895	56.84	0.00	0.00	0.00	0.00	0.00	56.84	1157.04	0.08	800.30	0.41	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2418	72.53	0.00	0.00	0.00	0.00	0.00	72.53	1173.07	0.08	872.75	0.45	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2940	88.21	0.00	0.00	0.00	0.00	0.00	88.21	1193.54	0.08	960.88	0.50	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3463	103.90	0.00	0.00	0.00	0.00	0.00	103.90	1218.43	0.08	1064.69	0.55	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3986	119.58	0.00	0.00	0.00	0.00	0.00	119.58	1247.76	0.09	1184.18	0.61	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4509	135.26	0.00	0.00	0.00	0.00	0.00	135.26	1281.51	0.09	1319.35	0.68	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4509	135.26	0.00	0.00	0.00	0.00	0.00	135.26	1319.70	0.09	1454.53	0.75	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.5032	150.95	0.00	0.00	0.00	0.00	0.00	150.95	1357.88	0.09	1605.38	0.83	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5554	166.63	0.00	0.00	0.00	0.00	0.00	166.63	1400.49	0.10	1771.91	0.92	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.6077	182.31	0.00	0.00	0.00	0.00	0.00	182.31	1447.54	0.10	1954.12	1.01	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.6077	182.31	0.00	0.00	0.00	0.00	0.00	182.31	1499.01	0.10	2136.33	1.10	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6600	198.00	0.00	0.00	0.00	0.00	0.00	198.00	1550.48	0.11	2334.22	1.21	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.7123	213.68	0.00	0.00	0.00	0.00	0.00	213.68	1606.38	0.11	2547.79	1.32	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9737	292.10	0.00	0.00	0.00	0.00	0.00	292.10	1666.71	0.12	2839.78	1.47	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2351	370.52	0.00	0.00	0.00	0.00	0.00	370.52	1749.19	0.12	3210.18	1.66	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3919	417.57	0.00	0.00	0.00	0.00	0.00	417.57	1853.82	0.13	3627.62	1.88	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5487	464.62	0.00	0.00	0.00	0.00	0.00	464.62	1971.74	0.14	4092.10	2.12	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.8101	543.04	0.00	0.00	0.00	0.00	0.00	543.04	2102.95	0.15	4635.00	2.40	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2806	684.19	0.00	0.00	0.00	0.00	0.00	684.19	2256.31	0.16	5319.04	2.75	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3463	103.90	0.00	0.00	0.00	0.00	0.00	103.90	2449.54	0.17	5422.76	2.80	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0471	14.12	0.00	0.00	0.00	0.00	0.00	14.12	2478.84	0.17	5436.70	2.81	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0314	9.41	0.00	0.00	0.00	0.00	0.00	9.41	2482.78	0.17	5445.94	2.82	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0261	7.84	0.00	0.00	0.00	0.00	0.00	7.84	2485.39	0.17	5453.61	2.82	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0157	4.71	0.00	0.00	0.00	0.00	0.00	4.71	2487.56	0.17	5458.14	2.82	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0105	3.14	0.00	0.00	0.00	0.00	0.00	3.14	2488.84	0.17	5461.11	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.68	0.17	5460.93	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.63	0.17	5460.76	2.82	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.58	0.17	5460.59	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.53	0.17	5460.42	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.48	0.17	5460.24	2.82	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.43	0.17	5460.07	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.38	0.17	5459.90	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.33	0.17	5459.72	2.82	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.29	0.17	5459.55	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.24	0.17	5459.38	2.82	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.19	0.17	5459.21	2.82	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2489.14	0.17	5459.03	2.82	0.00	0.00
					Total volume (cf)			5467.51								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	947.00	0.20	3.98	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	948.12	0.20	10.05	0.01	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	949.84	0.20	16.13	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	951.56	0.20	24.29	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	953.86	0.20	30.36	0.02	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	955.58	0.20	36.43	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	957.29	0.20	42.50	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	959.00	0.20	50.66	0.03	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	961.31	0.20	58.82	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	963.61	0.20	66.97	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	965.92	0.20	77.22	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	968.81	0.20	87.47	0.05	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	971.71	0.20	97.72	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	974.60	0.20	107.96	0.06	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	977.50	0.20	118.21	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	980.39	0.20	130.54	0.07	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	983.88	0.20	142.87	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	987.36	0.21	157.30	0.08	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	991.43	0.21	171.72	0.09	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	995.51	0.21	188.23	0.10	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0139	12.54	0.00	0.00	0.00	0.00	0.00	12.54	1000.17	0.21	200.56	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0163	14.63	0.00	0.00	0.00	0.00	0.00	14.63	1003.66	0.21	214.98	0.11	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	1007.73	0.21	231.49	0.12	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0186	16.72	0.00	0.00	0.00	0.00	0.00	16.72	1012.39	0.21	248.00	0.13	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0209	18.81	0.00	0.00	0.00	0.00	0.00	18.81	1017.06	0.21	266.59	0.14	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0209	18.81	0.00	0.00	0.00	0.00	0.00	18.81	1022.31	0.21	285.19	0.15	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1027.56	0.21	305.87	0.16	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1033.40	0.22	326.55	0.17	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0232	20.90	0.00	0.00	0.00	0.00	0.00	20.90	1039.25	0.22	347.24	0.18	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0255	22.99	0.00	0.00	0.00	0.00	0.00	22.99	1045.09	0.22	370.01	0.19	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0279	25.08	0.00	0.00	0.00	0.00	0.00	25.08	1051.52	0.22	394.86	0.20	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0302	27.17	0.00	0.00	0.00	0.00	0.00	27.17	1058.54	0.22	421.81	0.22	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1066.15	0.22	452.94	0.23	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1074.95	0.22	484.06	0.25	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0372	33.44	0.00	0.00	0.00	0.00	0.00	33.44	1083.74	0.23	517.27	0.27	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0395	35.53	0.00	0.00	0.00	0.00	0.00	35.53	1093.12	0.23	552.57	0.29	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1103.09	0.23	592.04	0.31	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1114.24	0.23	633.61	0.33	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0488	43.89	0.00	0.00	0.00	0.00	0.00	43.89	1125.98	0.23	677.26	0.35	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0511	45.98	0.00	0.00	0.00	0.00	0.00	45.98	1138.31	0.24	723.00	0.37	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1151.24	0.24	754.10	0.39	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0348	31.35	0.00	0.00	0.00	0.00	0.00	31.35	1160.02	0.24	785.21	0.41	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1168.81	0.24	826.76	0.43	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0464	41.80	0.00	0.00	0.00	0.00	0.00	41.80	1180.55	0.25	868.31	0.45	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1192.28	0.25	907.77	0.47	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1203.43	0.25	947.22	0.49	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0395	35.53	0.00	0.00	0.00	0.00	0.00	35.53	1214.58	0.25	982.50	0.51	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0418	37.62	0.00	0.00	0.00	0.00	0.00	37.62	1224.54	0.26	1019.86	0.53	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0580	52.24	0.00	0.00	0.00	0.00	0.00	52.24	1235.09	0.26	1071.85	0.55	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0604	54.33	0.00	0.00	0.00	0.00	0.00	54.33	1249.78	0.26	1125.92	0.58	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0715	64.38	0.00	0.00	0.00	0.00	0.00	64.38	1265.05	0.26	1190.04	0.62	0.00	0.00

13:00	2.9	0.59	0.50	N/A		0.0900	0.1035	93.14	0.00	0.00	0.00	0.00	0.00	93.14	1283.17	0.27	1282.91	0.66	0.00	0.00
13:15	3.4	0.69	0.49	N/A		0.1985	0.2282	205.39	0.00	0.00	0.00	0.00	0.00	205.39	1309.40	0.27	1488.03	0.77	0.00	0.00
13:30	3.4	0.69	0.48	N/A		0.2059	0.2367	213.06	0.00	0.00	0.00	0.00	0.00	213.06	1367.34	0.28	1700.80	0.88	0.00	0.00
13:45	2.3	0.46	0.47		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1427.45	0.30	1748.57	0.90	0.00	0.00
14:00	2.3	0.46	0.47		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1440.94	0.30	1796.33	0.93	0.00	0.00
14:15	2.7	0.55	0.46	N/A		0.0862	0.0991	89.16	0.00	0.00	0.00	0.00	0.00	89.16	1454.44	0.30	1885.19	0.97	0.00	0.00
14:30	2.6	0.53	0.45	N/A		0.0730	0.0839	75.52	0.00	0.00	0.00	0.00	0.00	75.52	1479.54	0.31	1960.40	1.01	0.00	0.00
14:45	2.6	0.53	0.45	N/A		0.0799	0.0919	82.67	0.00	0.00	0.00	0.00	0.00	82.67	1500.78	0.31	2042.76	1.06	0.00	0.00
15:00	2.5	0.51	0.44	N/A		0.0665	0.0765	68.83	0.00	0.00	0.00	0.00	0.00	68.83	1524.05	0.32	2111.27	1.09	0.00	0.00
15:15	2.4	0.48	0.43	N/A		0.0530	0.0610	54.87	0.00	0.00	0.00	0.00	0.00	54.87	1543.40	0.32	2165.82	1.12	0.00	0.00
15:30	2.3	0.46	0.43		0.42	0.0465	0.0534	48.07	0.00	0.00	0.00	0.00	0.00	48.07	1558.81	0.32	2213.56	1.14	0.00	0.00
15:45	1.9	0.38	0.42		0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1572.30	0.33	2252.94	1.17	0.00	0.00
16:00	1.9	0.38	0.41		0.35	0.0384	0.0441	39.71	0.00	0.00	0.00	0.00	0.00	39.71	1583.42	0.33	2292.31	1.19	0.00	0.00
16:15	0.4	0.08	0.41		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1594.54	0.33	2300.34	1.19	0.00	0.00
16:30	0.4	0.08	0.40		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1596.81	0.33	2308.37	1.19	0.00	0.00
16:45	0.3	0.06	0.39		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1599.08	0.33	2314.30	1.20	0.00	0.00
17:00	0.3	0.06	0.39		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1600.75	0.33	2320.24	1.20	0.00	0.00
17:15	0.5	0.10	0.38		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1602.43	0.33	2330.35	1.21	0.00	0.00
17:30	0.5	0.10	0.38		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1605.29	0.33	2340.47	1.21	0.00	0.00
17:45	0.5	0.10	0.37		0.09	0.0101	0.0116	10.45	0.00	0.00	0.00	0.00	0.00	10.45	1608.15	0.34	2350.58	1.22	0.00	0.00
18:00	0.4	0.08	0.37		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1611.00	0.34	2358.61	1.22	0.00	0.00
18:15	0.4	0.08	0.36		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1613.27	0.34	2366.63	1.22	0.00	0.00
18:30	0.4	0.08	0.35		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1615.54	0.34	2374.65	1.23	0.00	0.00
18:45	0.3	0.06	0.35		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1617.80	0.34	2380.58	1.23	0.00	0.00
19:00	0.2	0.04	0.34		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1619.48	0.34	2384.43	1.23	0.00	0.00
19:15	0.3	0.06	0.34		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1620.56	0.34	2390.36	1.24	0.00	0.00
19:30	0.4	0.08	0.34		0.07	0.0081	0.0093	8.36	0.00	0.00	0.00	0.00	0.00	8.36	1622.24	0.34	2398.38	1.24	0.00	0.00
19:45	0.3	0.06	0.33		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1624.50	0.34	2404.31	1.24	0.00	0.00
20:00	0.2	0.04	0.33		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1626.18	0.34	2408.15	1.25	0.00	0.00
20:15	0.3	0.06	0.32		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1627.26	0.34	2414.08	1.25	0.00	0.00
20:30	0.3	0.06	0.32		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1628.94	0.34	2420.01	1.25	0.00	0.00
20:45	0.3	0.06	0.31		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1630.61	0.34	2425.94	1.25	0.00	0.00
21:00	0.2	0.04	0.31		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1632.29	0.34	2429.78	1.26	0.00	0.00
21:15	0.3	0.06	0.31		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1633.37	0.34	2435.71	1.26	0.00	0.00
21:30	0.2	0.04	0.30		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1635.05	0.34	2439.55	1.26	0.00	0.00
21:45	0.3	0.06	0.30		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1636.13	0.34	2445.48	1.26	0.00	0.00
22:00	0.2	0.04	0.30		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1637.81	0.34	2449.32	1.27	0.00	0.00
22:15	0.3	0.06	0.29		0.05	0.0061	0.0070	6.27	0.00	0.00	0.00	0.00	0.00	6.27	1638.89	0.34	2455.24	1.27	0.00	0.00
22:30	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1640.57	0.34	2459.08	1.27	0.00	0.00
22:45	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1641.65	0.34	2462.92	1.27	0.00	0.00
23:00	0.2	0.04	0.29		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1642.74	0.34	2466.76	1.28	0.00	0.00
23:15	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1643.82	0.34	2470.59	1.28	0.00	0.00
23:30	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1644.90	0.34	2474.43	1.28	0.00	0.00
23:45	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1645.99	0.34	2478.27	1.28	0.00	0.00
24:00	0.2	0.04	0.28		0.04	0.0040	0.0046	4.18	0.00	0.00	0.00	0.00	0.00	4.18	1647.07	0.34	2482.10	1.28	0.00	0.00
	0	0.00	0.28		0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1648.15	0.34	2481.76	1.28	0.00	0.00
						Total volume (cf)		2508.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.03ac+0.09ac typ street frontage=1.12ac

5/7/2024 LOTs 13-15

Drainage Area (ac.)	1.1200	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)	26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE			
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5728	171.84	0.00	0.00	0.00	0.00	0.00	171.84	1078.00	0.07	171.76	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9321	279.62	0.00	0.00	0.00	0.00	0.00	279.62	1122.95	0.08	451.30	0.22	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0300	309.01	0.00	0.00	0.00	0.00	0.00	309.01	1196.10	0.08	760.23	0.37	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9647	289.42	0.00	0.00	0.00	0.00	0.00	289.42	1276.94	0.09	1049.56	0.51	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5199	455.98	0.00	0.00	0.00	0.00	0.00	455.98	1352.65	0.09	1505.45	0.73	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7486	524.57	0.00	0.00	0.00	0.00	0.00	524.57	1471.95	0.10	2029.91	0.99	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.1078	632.35	0.00	0.00	0.00	0.00	0.00	632.35	1609.20	0.11	2662.15	1.29	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.3038	691.14	0.00	0.00	0.00	0.00	0.00	691.14	1774.65	0.12	3353.16	1.63	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.3816	1014.47	0.00	0.00	0.00	0.00	0.00	1014.47	1955.48	0.14	4367.50	2.12	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.1126	1533.77	0.00	0.00	0.00	0.00	0.00	1533.77	2220.92	0.15	5901.12	2.87	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.6227	1386.80	0.00	0.00	0.00	0.00	0.00	1386.80	2622.24	0.18	7287.74	3.54	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7361	220.83	0.00	0.00	0.00	0.00	0.00	220.83	2985.10	0.21	7508.36	3.65	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.84	0.21	7508.15	3.65	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.78	0.21	7507.94	3.65	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3042.73	0.21	7507.73	3.65	0.00	0.00	
					Total volume (cf)			7509.80								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0546	16.38	0.00	0.00	0.00	0.00	0.00	16.38	1078.00	0.07	16.31	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0546	16.38	0.00	0.00	0.00	0.00	0.00	16.38	1082.27	0.08	32.62	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0462	13.86	0.00	0.00	0.00	0.00	0.00	13.86	1086.54	0.08	46.41	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1090.14	0.08	65.24	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1095.07	0.08	84.07	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1100.00	0.08	120.16	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1109.44	0.08	138.99	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1114.37	0.08	175.08	0.09	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1123.82	0.08	211.17	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0630	18.91	0.00	0.00	0.00	0.00	0.00	18.91	1133.26	0.08	229.99	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0672	20.17	0.00	0.00	0.00	0.00	0.00	20.17	1138.19	0.08	250.08	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	1143.44	0.08	286.17	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1152.89	0.08	372.67	0.18	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1175.52	0.08	459.17	0.22	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2886	86.58	0.00	0.00	0.00	0.00	0.00	86.58	1198.16	0.08	545.67	0.26	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2046	61.38	0.00	0.00	0.00	0.00	0.00	61.38	1220.80	0.08	606.96	0.29	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4567	137.00	0.00	0.00	0.00	0.00	0.00	137.00	1236.83	0.09	743.87	0.36	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4987	149.60	0.00	0.00	0.00	0.00	0.00	149.60	1272.66	0.09	893.38	0.43	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3726	111.79	0.00	0.00	0.00	0.00	0.00	111.79	1311.79	0.09	1005.08	0.49	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4987	149.60	0.00	0.00	0.00	0.00	0.00	149.60	1341.02	0.09	1154.59	0.56	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7507	225.22	0.00	0.00	0.00	0.00	0.00	225.22	1380.14	0.10	1379.71	0.67	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6667	200.01	0.00	0.00	0.00	0.00	0.00	200.01	1439.05	0.10	1579.62	0.77	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5827	174.81	0.00	0.00	0.00	0.00	0.00	174.81	1491.37	0.10	1754.33	0.85	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6247	187.41	0.00	0.00	0.00	0.00	0.00	187.41	1537.08	0.11	1941.63	0.94	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6667	200.01	0.00	0.00	0.00	0.00	0.00	200.01	1586.10	0.11	2141.53	1.04	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1288	338.65	0.00	0.00	0.00	0.00	0.00	338.65	1638.41	0.11	2480.07	1.20	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4649	439.48	0.00	0.00	0.00	0.00	0.00	439.48	1727.00	0.12	2919.42	1.42	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8348	250.43	0.00	0.00	0.00	0.00	0.00	250.43	1841.97	0.13	3169.72	1.54	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2211	666.34	0.00	0.00	0.00	0.00	0.00	666.34	1907.47	0.13	3835.93	1.86	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4312	729.35	0.00	0.00	0.00	0.00	0.00	729.35	2081.81	0.14	4565.14	2.22	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.8093	842.78	0.00	0.00	0.00	0.00	0.00	842.78	2272.63	0.16	5407.76	2.63	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8430	552.91	0.00	0.00	0.00	0.00	0.00	552.91	2493.14	0.17	5960.50	2.89	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2046	61.38	0.00	0.00	0.00	0.00	0.00	61.38	2637.78	0.18	6021.69	2.92	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	2653.79	0.18	6057.67	2.94	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1206	36.17	0.00	0.00	0.00	0.00	0.00	36.17	2663.21	0.18	6093.66	2.96	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0252	7.56	0.00	0.00	0.00	0.00	0.00	7.56	2672.63	0.19	6101.03	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.56	0.19	6100.85	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.51	0.19	6100.66	2.96	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.46	0.19	6100.48	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.41	0.19	6100.29	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.36	0.19	6100.10	2.96	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.31	0.19	6099.92	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.27	0.19	6099.73	2.96	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2674.22	0.19	6099.55	2.96	0.00	0.00
					Total volume (cf)		6104.87								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	1078.00	0.07	7.63	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1080.00	0.07	16.80	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1082.40	0.08	25.97	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1084.80	0.08	35.14	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	1087.20	0.08	44.31	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1089.60	0.08	55.02	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1092.40	0.08	65.73	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1095.20	0.08	76.44	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1098.00	0.08	87.15	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1100.81	0.08	97.86	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0360	10.79	0.00	0.00	0.00	0.00	0.00	10.79	1103.61	0.08	108.57	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1106.41	0.08	120.82	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1109.62	0.08	133.07	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1112.82	0.08	145.32	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1116.03	0.08	157.57	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1119.23	0.08	169.82	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1122.44	0.08	182.07	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1125.64	0.08	194.31	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1128.85	0.08	206.56	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1132.05	0.08	218.81	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1135.26	0.08	231.06	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1138.47	0.08	243.31	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1141.67	0.08	255.55	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1144.88	0.08	269.34	0.13	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0411	12.33	0.00	0.00	0.00	0.00	0.00	12.33	1148.48	0.08	281.59	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1151.69	0.08	295.38	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1155.30	0.08	309.17	0.15	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1158.90	0.08	322.95	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1162.51	0.08	336.74	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1166.12	0.08	350.53	0.17	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1169.73	0.08	364.31	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	1173.34	0.08	378.10	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1176.94	0.08	393.43	0.19	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1180.95	0.08	408.75	0.20	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1184.97	0.08	424.08	0.21	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1188.98	0.08	439.41	0.21	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0514	15.41	0.00	0.00	0.00	0.00	0.00	15.41	1192.99	0.08	454.73	0.22	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1197.00	0.08	471.60	0.23	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1201.41	0.08	488.46	0.24	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0565	16.95	0.00	0.00	0.00	0.00	0.00	16.95	1205.82	0.08	505.33	0.25	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0616	18.49	0.00	0.00	0.00	0.00	0.00	18.49	1210.24	0.08	523.74	0.25	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0668	20.03	0.00	0.00	0.00	0.00	0.00	20.03	1215.05	0.08	543.68	0.26	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0834	25.03	0.00	0.00	0.00	0.00	0.00	25.03	1220.27	0.08	568.63	0.28	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0834	25.03	0.00	0.00	0.00	0.00	0.00	25.03	1226.80	0.09	593.57	0.29	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1348	40.44	0.00	0.00	0.00	0.00	0.00	40.44	1233.33	0.09	633.92	0.31	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1348	40.44	0.00	0.00	0.00	0.00	0.00	40.44	1243.89	0.09	674.27	0.33	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1862	55.85	0.00	0.00	0.00	0.00	0.00	55.85	1254.45	0.09	730.03	0.35	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1862	55.85	0.00	0.00	0.00	0.00	0.00	55.85	1269.04	0.09	785.79	0.38	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2375	71.26	0.00	0.00	0.00	0.00	0.00	71.26	1283.63	0.09	856.96	0.42	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2889	86.66	0.00	0.00	0.00	0.00	0.00	86.66	1302.25	0.09	943.53	0.46	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3402	102.07	0.00	0.00	0.00	0.00	0.00	102.07	1324.91	0.09	1045.51	0.51	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3916	117.48	0.00	0.00	0.00	0.00	0.00	117.48	1351.60	0.09	1162.90	0.56	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4430	132.89	0.00	0.00	0.00	0.00	0.00	132.89	1382.31	0.10	1295.69	0.63	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4430	132.89	0.00	0.00	0.00	0.00	0.00	132.89	1417.07	0.10	1428.48	0.69	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4943	148.30	0.00	0.00	0.00	0.00	0.00	148.30	1451.81	0.10	1576.68	0.77	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5457	163.71	0.00	0.00	0.00	0.00	0.00	163.71	1490.60	0.10	1740.28	0.84	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5971	179.12	0.00	0.00	0.00	0.00	0.00	179.12	1533.41	0.11	1919.29	0.93	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5971	179.12	0.00	0.00	0.00	0.00	0.00	179.12	1580.25	0.11	2098.30	1.02	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6484	194.52	0.00	0.00	0.00	0.00	0.00	194.52	1627.10	0.11	2292.71	1.11	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6998	209.93	0.00	0.00	0.00	0.00	0.00	209.93	1677.97	0.12	2502.53	1.21	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9566	286.98	0.00	0.00	0.00	0.00	0.00	286.98	1732.88	0.12	2789.38	1.35	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2134	364.02	0.00	0.00	0.00	0.00	0.00	364.02	1807.94	0.13	3153.27	1.53	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3675	410.24	0.00	0.00	0.00	0.00	0.00	410.24	1903.17	0.13	3563.39	1.73	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5216	456.47	0.00	0.00	0.00	0.00	0.00	456.47	2010.49	0.14	4019.72	1.95	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7784	533.51	0.00	0.00	0.00	0.00	0.00	533.51	2129.91	0.15	4553.08	2.21	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2406	672.19	0.00	0.00	0.00	0.00	0.00	672.19	2269.48	0.16	5225.12	2.54	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3402	102.07	0.00	0.00	0.00	0.00	0.00	102.07	2445.34	0.17	5327.02	2.59	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0462	13.87	0.00	0.00	0.00	0.00	0.00	13.87	2472.01	0.17	5340.72	2.59	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0308	9.25	0.00	0.00	0.00	0.00	0.00	9.25	2475.59	0.17	5349.79	2.60	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0257	7.70	0.00	0.00	0.00	0.00	0.00	7.70	2477.97	0.17	5357.32	2.60	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0154	4.62	0.00	0.00	0.00	0.00	0.00	4.62	2479.94	0.17	5361.77	2.60	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0103	3.08	0.00	0.00	0.00	0.00	0.00	3.08	2481.10	0.17	5364.68	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.86	0.17	5364.51	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.82	0.17	5364.34	2.60	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.77	0.17	5364.16	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.73	0.17	5363.99	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.68	0.17	5363.82	2.60	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.64	0.17	5363.65	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.59	0.17	5363.48	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.55	0.17	5363.30	2.60	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.50	0.17	5363.13	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.46	0.17	5362.96	2.60	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.41	0.17	5362.79	2.60	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2481.37	0.17	5362.61	2.60	0.00	0.00
					Total volume (cf)			5371.59									Total Overflow (cf)		0.00	

24 Hour Storm in 15 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Loss Rate Value Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1078.00	0.22	3.88	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1079.02	0.22	9.82	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1080.57	0.23	15.75	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1082.12	0.23	23.74	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1084.21	0.23	29.67	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1085.76	0.23	35.60	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1087.32	0.23	41.54	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1088.87	0.23	49.52	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1090.96	0.23	57.51	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1093.05	0.23	65.49	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1095.14	0.23	75.53	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1097.77	0.23	85.57	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1100.39	0.23	95.60	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1103.02	0.23	105.64	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1105.64	0.23	115.67	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1108.27	0.23	127.76	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1111.43	0.23	139.85	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1114.60	0.23	153.99	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1118.30	0.23	168.13	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1122.00	0.23	184.32	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0137	12.32	0.00	0.00	0.00	0.00	0.00	12.32	1126.23	0.23	196.40	0.10	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0160	14.37	0.00	0.00	0.00	0.00	0.00	14.37	1129.40	0.24	210.54	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1133.10	0.24	226.73	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0183	16.43	0.00	0.00	0.00	0.00	0.00	16.43	1137.33	0.24	242.92	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0205	18.48	0.00	0.00	0.00	0.00	0.00	18.48	1141.57	0.24	261.16	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0205	18.48	0.00	0.00	0.00	0.00	0.00	18.48	1146.34	0.24	279.40	0.14	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1151.11	0.24	299.69	0.15	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1156.42	0.24	319.98	0.16	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0228	20.53	0.00	0.00	0.00	0.00	0.00	20.53	1161.73	0.24	340.27	0.17	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0251	22.58	0.00	0.00	0.00	0.00	0.00	22.58	1167.04	0.24	362.61	0.18	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0274	24.64	0.00	0.00	0.00	0.00	0.00	24.64	1172.89	0.24	387.00	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0297	26.69	0.00	0.00	0.00	0.00	0.00	26.69	1179.27	0.25	413.45	0.20	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1186.19	0.25	444.00	0.22	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1194.19	0.25	474.55	0.23	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0365	32.85	0.00	0.00	0.00	0.00	0.00	32.85	1202.18	0.25	507.15	0.25	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0388	34.90	0.00	0.00	0.00	0.00	0.00	34.90	1210.71	0.25	541.80	0.26	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1219.78	0.25	580.55	0.28	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1229.92	0.26	621.36	0.30	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0479	43.12	0.00	0.00	0.00	0.00	0.00	43.12	1240.60	0.26	664.22	0.32	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0502	45.17	0.00	0.00	0.00	0.00	0.00	45.17	1251.82	0.26	709.12	0.34	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1263.57	0.26	739.66	0.36	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0342	30.80	0.00	0.00	0.00	0.00	0.00	30.80	1271.56	0.26	770.19	0.37	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1279.55	0.27	810.98	0.39	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0456	41.06	0.00	0.00	0.00	0.00	0.00	41.06	1290.22	0.27	851.78	0.41	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1300.90	0.27	890.52	0.43	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1311.04	0.27	929.25	0.45	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0388	34.90	0.00	0.00	0.00	0.00	0.00	34.90	1321.17	0.28	963.88	0.47	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0411	36.96	0.00	0.00	0.00	0.00	0.00	36.96	1330.23	0.28	1000.56	0.49	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0570	51.33	0.00	0.00	0.00	0.00	0.00	51.33	1339.83	0.28	1051.61	0.51	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0593	53.38	0.00	0.00	0.00	0.00	0.00	53.38	1353.19	0.28	1104.71	0.54	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0703	63.25	0.00	0.00	0.00	0.00	0.00	63.25	1367.09	0.28	1167.67	0.57	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1017	91.50	0.00	0.00	0.00	0.00	0.00	91.50	1383.56	0.29	1258.89	0.61	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2242	201.79	0.00	0.00	0.00	0.00	0.00	201.79	1407.43	0.29	1460.39	0.71	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2326	209.32	0.00	0.00	0.00	0.00	0.00	209.32	1460.16	0.30	1669.40	0.81	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1514.86	0.32	1716.31	0.83	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1527.13	0.32	1763.21	0.86	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0973	87.60	0.00	0.00	0.00	0.00	0.00	87.60	1539.41	0.32	1850.48	0.90	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0824	74.20	0.00	0.00	0.00	0.00	0.00	74.20	1562.25	0.33	1924.35	0.93	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0902	81.22	0.00	0.00	0.00	0.00	0.00	81.22	1581.58	0.33	2005.25	0.97	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0751	67.62	0.00	0.00	0.00	0.00	0.00	67.62	1602.75	0.33	2072.53	1.01	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0599	53.91	0.00	0.00	0.00	0.00	0.00	53.91	1620.35	0.34	2126.10	1.03	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0525	47.22	0.00	0.00	0.00	0.00	0.00	47.22	1634.37	0.34	2172.98	1.05	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1646.64	0.34	2211.65	1.07	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0433	39.01	0.00	0.00	0.00	0.00	0.00	39.01	1656.76	0.35	2250.32	1.09	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1666.88	0.35	2258.18	1.10	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1668.94	0.35	2266.05	1.10	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1670.99	0.35	2271.86	1.10	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1672.51	0.35	2277.67	1.11	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1674.03	0.35	2287.58	1.11	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1676.63	0.35	2297.50	1.12	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0114	10.27	0.00	0.00	0.00	0.00	0.00	10.27	1679.22	0.35	2307.42	1.12	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1681.82	0.35	2315.28	1.12	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1683.88	0.35	2323.14	1.13	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1685.93	0.35	2331.00	1.13	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1687.99	0.35	2336.81	1.13	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1689.51	0.35	2340.56	1.14	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1690.49	0.35	2346.37	1.14	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0091	8.21	0.00	0.00	0.00	0.00	0.00	8.21	1692.01	0.35	2354.23	1.14	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1694.07	0.35	2360.04	1.15	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1695.59	0.35	2363.79	1.15	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1696.57	0.35	2369.60	1.15	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1698.09	0.35	2375.40	1.15	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1699.61	0.35	2381.21	1.16	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1701.13	0.35	2384.96	1.16	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1702.11	0.35	2390.76	1.16	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1703.63	0.35	2394.52	1.16	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1704.61	0.36	2400.32	1.17	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1706.13	0.36	2404.07	1.17	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0068	6.16	0.00	0.00	0.00	0.00	0.00	6.16	1707.11	0.36	2409.87	1.17	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1708.63	0.36	2413.62	1.17	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1709.61	0.36	2417.37	1.17	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1710.59	0.36	2421.12	1.18	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1711.58	0.36	2424.87	1.18	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1712.56	0.36	2428.62	1.18	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1713.54	0.36	2432.37	1.18	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0046	4.11	0.00	0.00	0.00	0.00	0.00	4.11	1714.52	0.36	2436.12	1.18	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1715.50	0.36	2435.76	1.18	0.00	0.00
						Total volume (cf)	2464.09									Total Overflow (cf)		0.00	

HYDROLOGY CALCULATIONS - program updated 4-14-22 LC

Using the RCFC&WCD Short Cut Unit Hydrograph Method
Area Designations Area 1 VERSION 2 Area=1.02ac+0.09ac typ street frontage=1.11ac

5/7/2024 LOT 16

Drainage Area (ac.)	1.1100	JOB NUMBER 22106			
Unit time (minutes)	5	5	5	15	
100 Year Storm Duration (hrs)	1	3	6	24	
Total Precipitation (Plates D-4.4,E-5.2, 5.4, 5.6)(in.)	2.41	3.10	3.79	5.05	from NOAA interactive website
Soils Group	A				
AMC index II Runoff Number (plate E-6.1)	32				
Plate E-6.2 Pervious Area Loss Rate (Fp)(in/hr)	0.74	(AMC II)			
Percentage of Impervious Cover (Ai)(%) (plate E-6.3)		26.6	20% per the RCFC Hydrology Manual 1AC LOT-PLATE D 5.6 AND 0.09AC TYPICAL STREET FRONTAGE		
Weighted Average Loss Rate (F=Fp(1-.9Ai))(in./hr.)	0.56	(used for 1, 3, and 6 hour storm, the 24 hour storm uses variable maximum loss rate per plate E-1.1 (3 of 6))			
Low Loss Rate Percent (%)	90				
Retention Basin Percolation Rate (in/hr)	0.01	(also used for drywell percolation rate)			

Percolation is taken incrementally.
Basin volume is calculated using the "truncated pyramid" formula, a more conservative estimate than "averaged end areas" sometimes used

(Drywell can be "zeroed out" by reducing numbers to less than .001, but should not entered as zeros or program chokes.)
Drywell storage includes 40% of the 1' wide rock bed surrounding the drywell: formula (upper)*PI()*(diam/2)^2+(lower)*PI()*((diam/2)^2+0.4*((diam/2+(grav+0.4166))^2-(diam/2+0.4166)^2))
The drywell wall thickness is assumed at 5" (0.4166) and the gravel bed width is variable "grav"
Drywell is zeroed out by reducing to 0.001 since there is none.

Drywell design factors Upper sec. (ft.)= 0.001 Lower sec. (ft.)= 0.001 Ring diam. (ft.) = 0.001 Drywell lower max. (cf)= 0.00 Upper max.(cf)= 0.00
Gravel bed width around drywell= 0.001 Drywell total(cf)= 0.00

Ret. Basin design (area, depth) Top = 3234 s.f. Bot. = 1078 s.f. Max. Depth (d)= 4 Max. storage= 8238.87 (d/3)*(bottom+top+(bottom*top)^0.50)
Formulas vol=(h/3)*(bottom+top+(bottom*top)^0.50) area=bottom+(h/d)*(top-bottom) h=(vol*3)/(bottom+top+(bottom*top)^0.5) (values must be non-zero or error occurs)
Outside input from: N/A 3.25

1 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Max.	Loss Rate Min.	Value	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)	
0:05	3.7	1.0700	0.5628	N/A		0.5072	0.5677	170.30	0.00	0.00	0.00	0.00	0.00	170.30	1078.00	0.07	170.23	0.08	0.00	0.00	
0:10	4.8	1.3882	0.5628	N/A		0.8253	0.9237	277.12	0.00	0.00	0.00	0.00	0.00	277.12	1122.55	0.08	447.27	0.22	0.00	0.00	
0:15	5.1	1.4749	0.5628	N/A		0.9121	1.0208	306.25	0.00	0.00	0.00	0.00	0.00	306.25	1195.04	0.08	753.44	0.37	0.00	0.00	
0:20	4.9	1.4171	0.5628	N/A		0.8542	0.9561	286.83	0.00	0.00	0.00	0.00	0.00	286.83	1275.17	0.09	1040.18	0.51	0.00	0.00	
0:25	6.6	1.9087	0.5628	N/A		1.3459	1.5064	451.91	0.00	0.00	0.00	0.00	0.00	451.91	1350.20	0.09	1492.00	0.72	0.00	0.00	
0:30	7.3	2.1112	0.5628	N/A		1.5483	1.7330	519.89	0.00	0.00	0.00	0.00	0.00	519.89	1468.44	0.10	2011.78	0.98	0.00	0.00	
0:35	8.4	2.4293	0.5628	N/A		1.8664	2.0890	626.70	0.00	0.00	0.00	0.00	0.00	626.70	1604.46	0.11	2638.38	1.28	0.00	0.00	
0:40	9	2.6028	0.5628	N/A		2.0400	2.2832	684.97	0.00	0.00	0.00	0.00	0.00	684.97	1768.43	0.12	3323.22	1.61	0.00	0.00	
0:45	12.3	3.5572	0.5628	N/A		2.9943	3.3514	1005.42	0.00	0.00	0.00	0.00	0.00	1005.42	1947.64	0.14	4328.50	2.10	0.00	0.00	
0:50	17.6	5.0899	0.5628	N/A		4.5271	5.0669	1520.08	0.00	0.00	0.00	0.00	0.00	1520.08	2210.71	0.15	5848.43	2.84	0.00	0.00	
0:55	16.1	4.6561	0.5628	N/A		4.0933	4.5814	1374.42	0.00	0.00	0.00	0.00	0.00	1374.42	2608.45	0.18	7222.66	3.51	0.00	0.00	
1:00	4.2	1.2146	0.5628	N/A		0.6518	0.7295	218.86	0.00	0.00	0.00	0.00	0.00	218.86	2968.07	0.21	7441.32	3.61	0.00	0.00	MAX DEPTH
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.29	0.21	7441.11	3.61	0.00	0.00	
	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.24	0.21	7440.90	3.61	0.00	0.00	
1:15	0	0.0000	0.5628	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3025.18	0.21	7440.69	3.61	0.00	0.00	
					Total volume (cf)			7442.75								Total Overflow (cf)			0.00		

3 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	1.3	0.48	0.56	0.44	0.0484	0.0541	16.24	0.00	0.00	0.00	0.00	0.00	16.24	1078.00	0.07	16.16	0.01	0.00	0.00
0:10	1.3	0.48	0.56	0.44	0.0484	0.0541	16.24	0.00	0.00	0.00	0.00	0.00	16.24	1082.23	0.08	32.33	0.02	0.00	0.00
0:15	1.1	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1086.46	0.08	45.99	0.02	0.00	0.00
0:20	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1090.04	0.08	64.65	0.03	0.00	0.00
0:25	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1094.92	0.08	83.31	0.04	0.00	0.00
0:30	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1099.80	0.08	119.08	0.06	0.00	0.00
0:35	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1109.16	0.08	137.74	0.07	0.00	0.00
0:40	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1114.04	0.08	173.51	0.08	0.00	0.00
0:45	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1123.40	0.08	209.28	0.10	0.00	0.00
0:50	1.5	0.56	0.56	0.50	0.0558	0.0625	18.74	0.00	0.00	0.00	0.00	0.00	18.74	1132.76	0.08	227.93	0.11	0.00	0.00
0:55	1.6	0.60	0.56	0.54	0.0595	0.0666	19.99	0.00	0.00	0.00	0.00	0.00	19.99	1137.65	0.08	247.84	0.12	0.00	0.00
1:00	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	1142.86	0.08	283.61	0.14	0.00	0.00
1:05	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1152.22	0.08	369.34	0.18	0.00	0.00
1:10	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1174.65	0.08	455.06	0.22	0.00	0.00
1:15	2.2	0.82	0.56	N/A	0.2556	0.2860	85.81	0.00	0.00	0.00	0.00	0.00	85.81	1197.08	0.08	540.79	0.26	0.00	0.00
1:20	2	0.74	0.56	N/A	0.1812	0.2028	60.83	0.00	0.00	0.00	0.00	0.00	60.83	1219.52	0.08	601.53	0.29	0.00	0.00
1:25	2.6	0.97	0.56	N/A	0.4044	0.4526	135.77	0.00	0.00	0.00	0.00	0.00	135.77	1235.41	0.09	737.22	0.36	0.00	0.00
1:30	2.7	1.00	0.56	N/A	0.4416	0.4942	148.26	0.00	0.00	0.00	0.00	0.00	148.26	1270.92	0.09	885.40	0.43	0.00	0.00
1:35	2.4	0.89	0.56	N/A	0.3300	0.3693	110.79	0.00	0.00	0.00	0.00	0.00	110.79	1309.70	0.09	996.10	0.48	0.00	0.00
1:40	2.7	1.00	0.56	N/A	0.4416	0.4942	148.26	0.00	0.00	0.00	0.00	0.00	148.26	1338.66	0.09	1144.27	0.56	0.00	0.00
1:45	3.3	1.23	0.56	N/A	0.6648	0.7440	223.21	0.00	0.00	0.00	0.00	0.00	223.21	1377.44	0.10	1367.38	0.66	0.00	0.00
1:50	3.1	1.15	0.56	N/A	0.5904	0.6608	198.23	0.00	0.00	0.00	0.00	0.00	198.23	1435.82	0.10	1565.51	0.76	0.00	0.00
1:55	2.9	1.08	0.56	N/A	0.5160	0.5775	173.25	0.00	0.00	0.00	0.00	0.00	173.25	1487.67	0.10	1738.65	0.84	0.00	0.00
2:00	3	1.12	0.56	N/A	0.5532	0.6191	185.74	0.00	0.00	0.00	0.00	0.00	185.74	1532.98	0.11	1924.28	0.93	0.00	0.00
2:05	3.1	1.15	0.56	N/A	0.5904	0.6608	198.23	0.00	0.00	0.00	0.00	0.00	198.23	1581.56	0.11	2122.39	1.03	0.00	0.00
2:10	4.2	1.56	0.56	N/A	0.9996	1.1188	335.63	0.00	0.00	0.00	0.00	0.00	335.63	1633.40	0.11	2457.91	1.19	0.00	0.00
2:15	5	1.86	0.56	N/A	1.2972	1.4518	435.55	0.00	0.00	0.00	0.00	0.00	435.55	1721.20	0.12	2893.34	1.40	0.00	0.00
2:20	3.5	1.30	0.56	N/A	0.7392	0.8273	248.19	0.00	0.00	0.00	0.00	0.00	248.19	1835.15	0.13	3141.40	1.53	0.00	0.00
2:25	6.8	2.53	0.56	N/A	1.9668	2.2013	660.39	0.00	0.00	0.00	0.00	0.00	660.39	1900.06	0.13	3801.66	1.85	0.00	0.00
2:30	7.3	2.72	0.56	N/A	2.1528	2.4095	722.84	0.00	0.00	0.00	0.00	0.00	722.84	2072.84	0.14	4524.36	2.20	0.00	0.00
2:35	8.2	3.05	0.56	N/A	2.4876	2.7842	835.26	0.00	0.00	0.00	0.00	0.00	835.26	2261.96	0.16	5359.46	2.60	0.00	0.00
2:40	5.9	2.19	0.56	N/A	1.6320	1.8266	547.97	0.00	0.00	0.00	0.00	0.00	547.97	2480.50	0.17	5907.26	2.87	0.00	0.00
2:45	2	0.74	0.56	N/A	0.1812	0.2028	60.83	0.00	0.00	0.00	0.00	0.00	60.83	2623.85	0.18	5967.90	2.90	0.00	0.00
2:50	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	2639.72	0.18	6003.56	2.91	0.00	0.00
2:55	1.8	0.67	0.56	N/A	0.1068	0.1195	35.85	0.00	0.00	0.00	0.00	0.00	35.85	2649.05	0.18	6039.23	2.93	0.00	0.00
3:00	0.6	0.22	0.56	0.20	0.0223	0.0250	7.49	0.00	0.00	0.00	0.00	0.00	7.49	2658.38	0.18	6046.54	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.30	0.18	6046.35	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.25	0.18	6046.17	2.94	0.00	0.00
3:15	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.20	0.18	6045.98	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.15	0.18	6045.80	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.10	0.18	6045.61	2.94	0.00	0.00
3:30	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.05	0.18	6045.43	2.94	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2660.01	0.18	6045.24	2.93	0.00	0.00
	0	0.00	0.56	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2659.96	0.18	6045.06	2.93	0.00	0.00
					Total volume (cf)		6050.36								Total Overflow (cf)			0.00	

6 Hour Storm in 5 minute increments

Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:05	0.5	0.23	0.56	0.20	0.0227	0.0255	7.64	0.00	0.00	0.00	0.00	0.00	7.64	1078.00	0.07	7.56	0.00	0.00	0.00
0:10	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1079.98	0.07	16.65	0.01	0.00	0.00
0:15	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1082.36	0.08	25.74	0.01	0.00	0.00
0:20	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1084.73	0.08	34.82	0.02	0.00	0.00
0:25	0.6	0.27	0.56	0.25	0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	1087.11	0.08	43.91	0.02	0.00	0.00
0:30	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1089.49	0.08	54.52	0.03	0.00	0.00
0:35	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1092.27	0.08	65.14	0.03	0.00	0.00
0:40	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1095.05	0.08	75.75	0.04	0.00	0.00
0:45	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1097.82	0.08	86.37	0.04	0.00	0.00
0:50	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1100.60	0.08	96.98	0.05	0.00	0.00
0:55	0.7	0.32	0.56	0.29	0.0318	0.0356	10.69	0.00	0.00	0.00	0.00	0.00	10.69	1103.38	0.08	107.59	0.05	0.00	0.00
1:00	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1106.16	0.08	119.73	0.06	0.00	0.00
1:05	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1109.33	0.08	131.87	0.06	0.00	0.00
1:10	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1112.51	0.08	144.01	0.07	0.00	0.00
1:15	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1115.69	0.08	156.15	0.08	0.00	0.00
1:20	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1118.86	0.08	168.29	0.08	0.00	0.00
1:25	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1122.04	0.08	180.43	0.09	0.00	0.00
1:30	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1125.22	0.08	192.57	0.09	0.00	0.00
1:35	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1128.39	0.08	204.71	0.10	0.00	0.00
1:40	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1131.57	0.08	216.84	0.11	0.00	0.00
1:45	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1134.75	0.08	228.98	0.11	0.00	0.00
1:50	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1137.92	0.08	241.12	0.12	0.00	0.00
1:55	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1141.10	0.08	253.26	0.12	0.00	0.00
2:00	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1144.27	0.08	266.92	0.13	0.00	0.00
2:05	0.8	0.36	0.56	0.33	0.0364	0.0407	12.22	0.00	0.00	0.00	0.00	0.00	12.22	1147.85	0.08	279.06	0.14	0.00	0.00
2:10	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1151.03	0.08	292.72	0.14	0.00	0.00
2:15	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1154.60	0.08	306.39	0.15	0.00	0.00
2:20	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1158.18	0.08	320.05	0.16	0.00	0.00
2:25	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1161.75	0.08	333.71	0.16	0.00	0.00
2:30	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1165.33	0.08	347.38	0.17	0.00	0.00
2:35	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1168.90	0.08	361.04	0.18	0.00	0.00
2:40	0.9	0.41	0.56	0.37	0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	1172.48	0.08	374.70	0.18	0.00	0.00
2:45	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1176.05	0.08	389.89	0.19	0.00	0.00
2:50	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1180.03	0.08	405.08	0.20	0.00	0.00
2:55	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1184.00	0.08	420.27	0.20	0.00	0.00
3:00	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1187.98	0.08	435.46	0.21	0.00	0.00
3:05	1	0.45	0.56	0.41	0.0455	0.0509	15.27	0.00	0.00	0.00	0.00	0.00	15.27	1191.95	0.08	450.65	0.22	0.00	0.00
3:10	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1195.93	0.08	467.36	0.23	0.00	0.00
3:15	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1200.30	0.08	484.08	0.24	0.00	0.00
3:20	1.1	0.50	0.56	0.45	0.0500	0.0560	16.80	0.00	0.00	0.00	0.00	0.00	16.80	1204.68	0.08	500.79	0.24	0.00	0.00
3:25	1.2	0.55	0.56	0.49	0.0546	0.0611	18.33	0.00	0.00	0.00	0.00	0.00	18.33	1209.05	0.08	519.03	0.25	0.00	0.00
3:30	1.3	0.59	0.56	0.53	0.0591	0.0662	19.85	0.00	0.00	0.00	0.00	0.00	19.85	1213.82	0.08	538.80	0.26	0.00	0.00
3:35	1.4	0.64	0.56	N/A	0.0739	0.0827	24.81	0.00	0.00	0.00	0.00	0.00	24.81	1219.00	0.08	563.52	0.27	0.00	0.00
3:40	1.4	0.64	0.56	N/A	0.0739	0.0827	24.81	0.00	0.00	0.00	0.00	0.00	24.81	1225.47	0.09	588.24	0.29	0.00	0.00
3:45	1.5	0.68	0.56	N/A	0.1194	0.1336	40.08	0.00	0.00	0.00	0.00	0.00	40.08	1231.93	0.09	628.23	0.31	0.00	0.00
3:50	1.5	0.68	0.56	N/A	0.1194	0.1336	40.08	0.00	0.00	0.00	0.00	0.00	40.08	1242.40	0.09	668.22	0.32	0.00	0.00
3:55	1.6	0.73	0.56	N/A	0.1648	0.1845	55.35	0.00	0.00	0.00	0.00	0.00	55.35	1252.86	0.09	723.48	0.35	0.00	0.00
4:00	1.6	0.73	0.56	N/A	0.1648	0.1845	55.35	0.00	0.00	0.00	0.00	0.00	55.35	1267.33	0.09	778.74	0.38	0.00	0.00
4:05	1.7	0.77	0.56	N/A	0.2103	0.2354	70.62	0.00	0.00	0.00	0.00	0.00	70.62	1281.79	0.09	849.27	0.41	0.00	0.00
4:10	1.8	0.82	0.56	N/A	0.2558	0.2863	85.89	0.00	0.00	0.00	0.00	0.00	85.89	1300.24	0.09	935.07	0.45	0.00	0.00
4:15	1.9	0.86	0.56	N/A	0.3013	0.3372	101.16	0.00	0.00	0.00	0.00	0.00	101.16	1322.70	0.09	1036.14	0.50	0.00	0.00

4:20	2	0.91	0.56	N/A		0.3468	0.3881	116.43	0.00	0.00	0.00	0.00	0.00	116.43	1349.14	0.09	1152.48	0.56	0.00	0.00
4:25	2.1	0.96	0.56	N/A		0.3922	0.4390	131.70	0.00	0.00	0.00	0.00	0.00	131.70	1379.59	0.10	1284.09	0.62	0.00	0.00
4:30	2.1	0.96	0.56	N/A		0.3922	0.4390	131.70	0.00	0.00	0.00	0.00	0.00	131.70	1414.03	0.10	1415.69	0.69	0.00	0.00
4:35	2.2	1.00	0.56	N/A		0.4377	0.4899	146.97	0.00	0.00	0.00	0.00	0.00	146.97	1448.47	0.10	1562.57	0.76	0.00	0.00
4:40	2.3	1.05	0.56	N/A		0.4832	0.5408	162.25	0.00	0.00	0.00	0.00	0.00	162.25	1486.90	0.10	1724.71	0.84	0.00	0.00
4:45	2.4	1.09	0.56	N/A		0.5287	0.5917	177.52	0.00	0.00	0.00	0.00	0.00	177.52	1529.33	0.11	1902.12	0.92	0.00	0.00
4:50	2.4	1.09	0.56	N/A		0.5287	0.5917	177.52	0.00	0.00	0.00	0.00	0.00	177.52	1575.76	0.11	2079.52	1.01	0.00	0.00
4:55	2.5	1.14	0.56	N/A		0.5742	0.6426	192.79	0.00	0.00	0.00	0.00	0.00	192.79	1622.18	0.11	2272.20	1.10	0.00	0.00
5:00	2.6	1.18	0.56	N/A		0.6196	0.6935	208.06	0.00	0.00	0.00	0.00	0.00	208.06	1672.60	0.12	2480.14	1.20	0.00	0.00
5:05	3.1	1.41	0.56	N/A		0.8470	0.9480	284.41	0.00	0.00	0.00	0.00	0.00	284.41	1727.02	0.12	2764.44	1.34	0.00	0.00
5:10	3.6	1.64	0.56	N/A		1.0744	1.2026	360.77	0.00	0.00	0.00	0.00	0.00	360.77	1801.42	0.13	3125.08	1.52	0.00	0.00
5:15	3.9	1.77	0.56	N/A		1.2109	1.3553	406.58	0.00	0.00	0.00	0.00	0.00	406.58	1895.79	0.13	3531.53	1.71	0.00	0.00
5:20	4.2	1.91	0.56	N/A		1.3473	1.5080	452.40	0.00	0.00	0.00	0.00	0.00	452.40	2002.15	0.14	3983.78	1.93	0.00	0.00
5:25	4.7	2.14	0.56	N/A		1.5747	1.7625	528.75	0.00	0.00	0.00	0.00	0.00	528.75	2120.50	0.15	4512.39	2.19	0.00	0.00
5:30	5.6	2.55	0.56	N/A		1.9840	2.2206	666.19	0.00	0.00	0.00	0.00	0.00	666.19	2258.83	0.16	5178.42	2.51	0.00	0.00
5:35	1.9	0.86	0.56	N/A		0.3013	0.3372	101.16	0.00	0.00	0.00	0.00	0.00	101.16	2433.12	0.17	5279.41	2.56	0.00	0.00
5:40	0.9	0.41	0.56	0.37		0.0409	0.0458	13.74	0.00	0.00	0.00	0.00	0.00	13.74	2459.55	0.17	5292.99	2.57	0.00	0.00
5:45	0.6	0.27	0.56	0.25		0.0273	0.0305	9.16	0.00	0.00	0.00	0.00	0.00	9.16	2463.10	0.17	5301.98	2.57	0.00	0.00
5:50	0.5	0.23	0.56	0.20		0.0227	0.0255	7.64	0.00	0.00	0.00	0.00	0.00	7.64	2465.46	0.17	5309.44	2.58	0.00	0.00
5:55	0.3	0.14	0.56	0.12		0.0136	0.0153	4.58	0.00	0.00	0.00	0.00	0.00	4.58	2467.41	0.17	5313.85	2.58	0.00	0.00
6:00	0.2	0.09	0.56	0.08		0.0091	0.0102	3.05	0.00	0.00	0.00	0.00	0.00	3.05	2468.56	0.17	5316.73	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.32	0.17	5316.56	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.27	0.17	5316.39	2.58	0.00	0.00
6:15	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.23	0.17	5316.22	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.18	0.17	5316.05	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.14	0.17	5315.88	2.58	0.00	0.00
6:30	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.09	0.17	5315.71	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.05	0.17	5315.53	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2469.00	0.17	5315.36	2.58	0.00	0.00
6:45	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.96	0.17	5315.19	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.91	0.17	5315.02	2.58	0.00	0.00
	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.87	0.17	5314.85	2.58	0.00	0.00
7:00	0	0.00	0.56	0.00		0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2468.82	0.17	5314.68	2.58	0.00	0.00
					Total volume (cf)			5323.63								Total Overflow (cf)			0.00	

24 Hour Storm in 15 minute increments

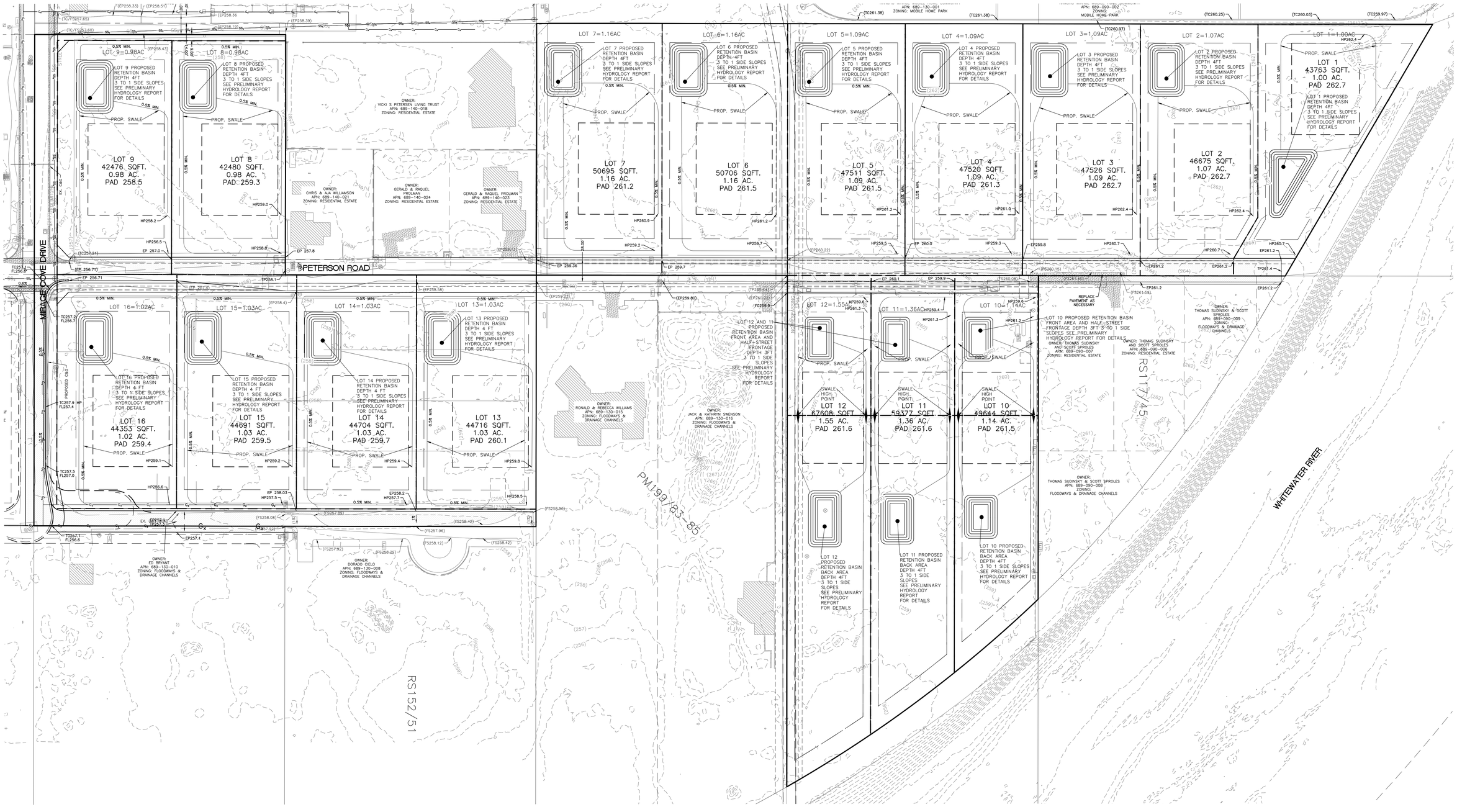
Time	Pattern %	Storm Rain (in/hr)	Loss Rate Value Max.	Min.	Effective Rain (in/hr	Flow Rate (cfs)	Flow Vol. (cf)	Outside Input (cf)	Drywell Retention Area (sf)	Drywell Period Perc. (cf)	Drywell Storage Vol. (cf)	Drywell Storage Depth (ft)	Overflow To Basin (cf)	Retention Area (sf)	Basin Period Perc. (cf)	Basin Storage Vol. (cf)	Basin Storage Depth (ft	Overflow Vol. (cf)	Overflow Rate (cfs)
0:15	0.2	0.04	0.99	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1078.00	0.22	3.85	0.00	0.00	0.00
0:30	0.3	0.06	0.98	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1079.01	0.22	9.72	0.00	0.00	0.00
0:45	0.3	0.06	0.97	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1080.54	0.23	15.60	0.01	0.00	0.00
1:00	0.4	0.08	0.95	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1082.08	0.23	23.52	0.01	0.00	0.00
1:15	0.3	0.06	0.94	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1084.15	0.23	29.40	0.01	0.00	0.00
1:30	0.3	0.06	0.93	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1085.69	0.23	35.27	0.02	0.00	0.00
1:45	0.3	0.06	0.92	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1087.23	0.23	41.15	0.02	0.00	0.00
2:00	0.4	0.08	0.91	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1088.77	0.23	49.06	0.02	0.00	0.00
2:15	0.4	0.08	0.90	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1090.84	0.23	56.98	0.03	0.00	0.00
2:30	0.4	0.08	0.89	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1092.91	0.23	64.89	0.03	0.00	0.00
2:45	0.5	0.10	0.88	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1094.98	0.23	74.83	0.04	0.00	0.00
3:00	0.5	0.10	0.87	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1097.58	0.23	84.78	0.04	0.00	0.00
3:15	0.5	0.10	0.85	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1100.19	0.23	94.72	0.05	0.00	0.00
3:30	0.5	0.10	0.84	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1102.79	0.23	104.67	0.05	0.00	0.00
3:45	0.5	0.10	0.83	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1105.39	0.23	114.61	0.06	0.00	0.00
4:00	0.6	0.12	0.82	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1107.99	0.23	126.59	0.06	0.00	0.00
4:15	0.6	0.12	0.81	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1111.13	0.23	138.57	0.07	0.00	0.00
4:30	0.7	0.14	0.80	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1114.26	0.23	152.58	0.07	0.00	0.00
4:45	0.7	0.14	0.79	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1117.93	0.23	166.59	0.08	0.00	0.00
5:00	0.8	0.16	0.78	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1121.59	0.23	182.63	0.09	0.00	0.00
5:15	0.6	0.12	0.77	0.11	0.0121	0.0136	12.21	0.00	0.00	0.00	0.00	0.00	12.21	1125.79	0.23	194.61	0.09	0.00	0.00
5:30	0.7	0.14	0.76	0.13	0.0141	0.0158	14.24	0.00	0.00	0.00	0.00	0.00	14.24	1128.93	0.24	208.62	0.10	0.00	0.00
5:45	0.8	0.16	0.75	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1132.59	0.24	224.66	0.11	0.00	0.00
6:00	0.8	0.16	0.74	0.15	0.0162	0.0181	16.28	0.00	0.00	0.00	0.00	0.00	16.28	1136.79	0.24	240.70	0.12	0.00	0.00
6:15	0.9	0.18	0.73	0.16	0.0182	0.0203	18.31	0.00	0.00	0.00	0.00	0.00	18.31	1140.99	0.24	258.78	0.13	0.00	0.00
6:30	0.9	0.18	0.72	0.16	0.0182	0.0203	18.31	0.00	0.00	0.00	0.00	0.00	18.31	1145.72	0.24	276.85	0.13	0.00	0.00
6:45	1	0.20	0.71	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1150.45	0.24	296.96	0.14	0.00	0.00
7:00	1	0.20	0.70	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1155.71	0.24	317.07	0.15	0.00	0.00
7:15	1	0.20	0.69	0.18	0.0202	0.0226	20.35	0.00	0.00	0.00	0.00	0.00	20.35	1160.97	0.24	337.17	0.16	0.00	0.00
7:30	1.1	0.22	0.68	0.20	0.0222	0.0249	22.38	0.00	0.00	0.00	0.00	0.00	22.38	1166.23	0.24	359.31	0.17	0.00	0.00
7:45	1.2	0.24	0.67	0.22	0.0242	0.0271	24.42	0.00	0.00	0.00	0.00	0.00	24.42	1172.03	0.24	383.49	0.19	0.00	0.00
8:00	1.3	0.26	0.66	0.24	0.0263	0.0294	26.45	0.00	0.00	0.00	0.00	0.00	26.45	1178.35	0.25	409.69	0.20	0.00	0.00
8:15	1.5	0.30	0.66	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1185.21	0.25	439.97	0.21	0.00	0.00
8:30	1.5	0.30	0.65	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1193.13	0.25	470.24	0.23	0.00	0.00
8:45	1.6	0.32	0.64	0.29	0.0323	0.0362	32.56	0.00	0.00	0.00	0.00	0.00	32.56	1201.06	0.25	502.55	0.24	0.00	0.00
9:00	1.7	0.34	0.63	0.31	0.0343	0.0384	34.59	0.00	0.00	0.00	0.00	0.00	34.59	1209.51	0.25	536.89	0.26	0.00	0.00
9:15	1.9	0.38	0.62	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1218.50	0.25	575.29	0.28	0.00	0.00
9:30	2	0.40	0.61	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1228.55	0.26	615.73	0.30	0.00	0.00
9:45	2.1	0.42	0.60	0.38	0.0424	0.0475	42.73	0.00	0.00	0.00	0.00	0.00	42.73	1239.13	0.26	658.21	0.32	0.00	0.00
10:00	2.2	0.44	0.59	0.40	0.0444	0.0497	44.77	0.00	0.00	0.00	0.00	0.00	44.77	1250.24	0.26	702.71	0.34	0.00	0.00
10:15	1.5	0.30	0.58	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1261.89	0.26	732.97	0.36	0.00	0.00
10:30	1.5	0.30	0.58	0.27	0.0303	0.0339	30.52	0.00	0.00	0.00	0.00	0.00	30.52	1269.81	0.26	763.23	0.37	0.00	0.00
10:45	2	0.40	0.57	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1277.73	0.27	803.66	0.39	0.00	0.00
11:00	2	0.40	0.56	0.36	0.0404	0.0452	40.70	0.00	0.00	0.00	0.00	0.00	40.70	1288.31	0.27	844.09	0.41	0.00	0.00
11:15	1.9	0.38	0.55	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1298.89	0.27	882.48	0.43	0.00	0.00
11:30	1.9	0.38	0.54	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1308.93	0.27	920.86	0.45	0.00	0.00
11:45	1.7	0.34	0.53	0.31	0.0343	0.0384	34.59	0.00	0.00	0.00	0.00	0.00	34.59	1318.98	0.27	955.18	0.46	0.00	0.00
12:00	1.8	0.36	0.53	0.33	0.0364	0.0407	36.63	0.00	0.00	0.00	0.00	0.00	36.63	1327.96	0.28	991.53	0.48	0.00	0.00
12:15	2.5	0.51	0.52	0.45	0.0505	0.0565	50.87	0.00	0.00	0.00	0.00	0.00	50.87	1337.47	0.28	1042.12	0.51	0.00	0.00
12:30	2.6	0.53	0.51	0.47	0.0525	0.0588	52.90	0.00	0.00	0.00	0.00	0.00	52.90	1350.71	0.28	1094.75	0.53	0.00	0.00
12:45	2.8	0.57	0.50	N/A	0.0622	0.0697	62.69	0.00	0.00	0.00	0.00	0.00	62.69	1364.48	0.28	1157.15	0.56	0.00	0.00

13:00	2.9	0.59	0.50	N/A	0.0900	0.1008	90.69	0.00	0.00	0.00	0.00	0.00	90.69	1380.81	0.29	1247.55	0.61	0.00	0.00
13:15	3.4	0.69	0.49	N/A	0.1985	0.2222	199.99	0.00	0.00	0.00	0.00	0.00	199.99	1404.47	0.29	1447.24	0.70	0.00	0.00
13:30	3.4	0.69	0.48	N/A	0.2059	0.2305	207.45	0.00	0.00	0.00	0.00	0.00	207.45	1456.72	0.30	1654.39	0.80	0.00	0.00
13:45	2.3	0.46	0.47	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1510.93	0.31	1700.87	0.83	0.00	0.00
14:00	2.3	0.46	0.47	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1523.09	0.32	1747.35	0.85	0.00	0.00
14:15	2.7	0.55	0.46	N/A	0.0862	0.0965	86.81	0.00	0.00	0.00	0.00	0.00	86.81	1535.26	0.32	1833.85	0.89	0.00	0.00
14:30	2.6	0.53	0.45	N/A	0.0730	0.0817	73.53	0.00	0.00	0.00	0.00	0.00	73.53	1557.89	0.32	1907.06	0.93	0.00	0.00
14:45	2.6	0.53	0.45	N/A	0.0799	0.0894	80.50	0.00	0.00	0.00	0.00	0.00	80.50	1577.05	0.33	1987.23	0.96	0.00	0.00
15:00	2.5	0.51	0.44	N/A	0.0665	0.0745	67.01	0.00	0.00	0.00	0.00	0.00	67.01	1598.03	0.33	2053.91	1.00	0.00	0.00
15:15	2.4	0.48	0.43	N/A	0.0530	0.0594	53.43	0.00	0.00	0.00	0.00	0.00	53.43	1615.48	0.34	2107.00	1.02	0.00	0.00
15:30	2.3	0.46	0.43	0.42	0.0465	0.0520	46.80	0.00	0.00	0.00	0.00	0.00	46.80	1629.37	0.34	2153.46	1.05	0.00	0.00
15:45	1.9	0.38	0.42	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1641.53	0.34	2191.78	1.06	0.00	0.00
16:00	1.9	0.38	0.41	0.35	0.0384	0.0430	38.66	0.00	0.00	0.00	0.00	0.00	38.66	1651.56	0.34	2230.10	1.08	0.00	0.00
16:15	0.4	0.08	0.41	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1661.59	0.35	2237.89	1.09	0.00	0.00
16:30	0.4	0.08	0.40	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1663.62	0.35	2245.68	1.09	0.00	0.00
16:45	0.3	0.06	0.39	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1665.66	0.35	2251.44	1.09	0.00	0.00
17:00	0.3	0.06	0.39	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1667.17	0.35	2257.20	1.10	0.00	0.00
17:15	0.5	0.10	0.38	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1668.68	0.35	2267.02	1.10	0.00	0.00
17:30	0.5	0.10	0.38	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1671.25	0.35	2276.85	1.11	0.00	0.00
17:45	0.5	0.10	0.37	0.09	0.0101	0.0113	10.17	0.00	0.00	0.00	0.00	0.00	10.17	1673.82	0.35	2286.67	1.11	0.00	0.00
18:00	0.4	0.08	0.37	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1676.39	0.35	2294.46	1.11	0.00	0.00
18:15	0.4	0.08	0.36	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1678.43	0.35	2302.25	1.12	0.00	0.00
18:30	0.4	0.08	0.35	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1680.47	0.35	2310.04	1.12	0.00	0.00
18:45	0.3	0.06	0.35	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1682.51	0.35	2315.79	1.12	0.00	0.00
19:00	0.2	0.04	0.34	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1684.01	0.35	2319.51	1.13	0.00	0.00
19:15	0.3	0.06	0.34	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1684.99	0.35	2325.27	1.13	0.00	0.00
19:30	0.4	0.08	0.34	0.07	0.0081	0.0090	8.14	0.00	0.00	0.00	0.00	0.00	8.14	1686.49	0.35	2333.05	1.13	0.00	0.00
19:45	0.3	0.06	0.33	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1688.53	0.35	2338.81	1.14	0.00	0.00
20:00	0.2	0.04	0.33	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1690.03	0.35	2342.52	1.14	0.00	0.00
20:15	0.3	0.06	0.32	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1691.01	0.35	2348.28	1.14	0.00	0.00
20:30	0.3	0.06	0.32	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1692.51	0.35	2354.03	1.14	0.00	0.00
20:45	0.3	0.06	0.31	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1694.02	0.35	2359.78	1.15	0.00	0.00
21:00	0.2	0.04	0.31	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1695.52	0.35	2363.50	1.15	0.00	0.00
21:15	0.3	0.06	0.31	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1696.50	0.35	2369.25	1.15	0.00	0.00
21:30	0.2	0.04	0.30	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1698.00	0.35	2372.96	1.15	0.00	0.00
21:45	0.3	0.06	0.30	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1698.97	0.35	2378.71	1.15	0.00	0.00
22:00	0.2	0.04	0.30	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1700.48	0.35	2382.43	1.16	0.00	0.00
22:15	0.3	0.06	0.29	0.05	0.0061	0.0068	6.10	0.00	0.00	0.00	0.00	0.00	6.10	1701.45	0.35	2388.18	1.16	0.00	0.00
22:30	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1702.95	0.35	2391.89	1.16	0.00	0.00
22:45	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1703.93	0.35	2395.61	1.16	0.00	0.00
23:00	0.2	0.04	0.29	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1704.90	0.36	2399.32	1.16	0.00	0.00
23:15	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1705.87	0.36	2403.04	1.17	0.00	0.00
23:30	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1706.84	0.36	2406.75	1.17	0.00	0.00
23:45	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1707.81	0.36	2410.47	1.17	0.00	0.00
24:00	0.2	0.04	0.28	0.04	0.0040	0.0045	4.07	0.00	0.00	0.00	0.00	0.00	4.07	1708.79	0.36	2414.18	1.17	0.00	0.00
	0	0.00	0.28	0.00	0.0000	0.0000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1709.76	0.36	2413.82	1.17	0.00	0.00
					Total volume (cf)		2442.09									Total Overflow (cf)		0.00	

EXHIBITS

PRELIMINARY HYDROLOGY PLAN
TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA



LEGEND:

- - - - LOT WATERSHEDS

NORTH

0 50' 100' 150' 200'

SCALE 1"=50'

PRELIMINARY

DATE: 07/09/2024

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL: REGISTERED PROFESSIONAL ENGINEER — PHILLIP K. FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

FOR REVIEW PURPOSES ONLY DATE: _____

PHILLIP K. FOMOTOR PE., PLS.
R.C.E. NO. 47284

PRELIMINARY HYDROLOGY PLAN FOR TENTATIVE TRACT MAP NO. 38971

PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

Appendix G

AGREEMENTS – CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP

Recording requested by:

City of Rancho Mirage

When recorded mail to:

City of Rancho Mirage
69825 Highway 111
Rancho Mirage, CA, 92270
Attn: City Clerk

APNs: 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022

Space above this line for Recorder's use

(Exempt from recording fees pursuant to Government Code Sections 6103 and 27383)

Water Quality Management Plan and Urban Runoff BMP Transfer, Access and Maintenance Agreement and Covenant

THIS WATER QUALITY MANAGEMENT PLAN AND URBAN RUNOFF BMP TRANSFER, ACCESS AND MAINTENANCE AGREEMENT AND COVENANT ("Agreement and Covenant") is made and entered into in Rancho Mirage, California, this _____day of _____, by and between Horti Caesaris LLC, herein after referred to as "Owner," and the City of Rancho Mirage, a municipal corporation, located in the County of Riverside, State of California hereinafter referred to as "City."

RECITALS

WHEREAS, Owner owns real property ("Property") having a common address of: Peterson Road, in the City of Rancho Mirage, County of Riverside, State of California, having Assessor's Parcel Number(s) of 689-090-003, 689-130-004, -005, -013, -014, -018 & 689-140-022, more specifically described in **Exhibit "A"** and depicted in **Exhibit "B"** both of which exhibits are attached hereto and incorporated herein by this reference; and

WHEREAS, the California Regional Water Quality Control Board – Colorado River Basin Region (CRWQCB-CRB), pursuant to Order No. R7-2008-001 issued to the City, along with the County of Riverside, the Coachella Valley Water District (CVWD), and the cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, and Palm Springs (collectively, "Co-Permittees"), a permit dated May 21, 2008 and identified as: Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer System (MS4) within the Whitewater River Watershed Riverside County Flood Control and Water Conservation District, Owner/Operator County of Riverside, Owner/Operator, Coachella Valley Water District, Owner/Operator, and Incorporated Cities of Riverside County within the Whitewater River Basin, Owners/Operators, which also serves as the National Pollutant Discharge

Elimination System (NPDES) Permit No. CAS617002 ("NPDES Permit"), pursuant to the Federal Clean Water Act; and

WHEREAS, the NPDES Permit provides that the City, as a co-permittee, must implement appropriate procedures to regulate the entry of pollutants and non-storm water discharges into the county storm water conveyance system; and

WHEREAS, the NPDES requires the City adopt Best Management Practices ("BMP") pursuant to the NPDES Permit; and

WHEREAS, these BMP and other regulations are supplemented by the City's Storm Water Management and Discharge Control Ordinance codified as Chapter 7.03 of the Rancho Mirage Municipal Code; and

WHEREAS, when the City Council on Month? Date?, Year?, approved Owner's request for Development Agreement Case No. DAXXXXXX for development of a 20.05 acre proposed tract map residential project site (TTM 38971) is located on Peterson Road, in the City of Rancho Mirage, County of Riverside, California, the Owner was required to employ BMPs to minimize pollutants in urban runoff; and

WHEREAS, Owner has chosen to install and/or implement BMPs as described in the Water Quality Management Plan, on file with the City, hereinafter referred to as "WQMP," to minimize pollutants in urban runoff and to minimize other adverse impacts of urban runoff; and

WHEREAS, the parties acknowledge that the WQMP on file with the City is incorporated herein by this reference; and

WHEREAS, said WQMP has been certified by the Owner, reviewed and approved by the City, and summarized by selected excerpts attached hereto and incorporated herein by this reference as **Exhibit "C"**; and

WHEREAS, said BMPs, with installation and/or implementation on private property and draining only private property, are part of a private facility with all maintenance or replacement, therefore, the sole responsibility of the Owner in accordance with the terms of this Agreement; and

WHEREAS, the Owner is aware that periodic and continuous maintenance, including, but not necessarily limited to, filter material replacement and sediment removal, is required to assure peak performance of all BMPs in the WQMP and that, furthermore, such maintenance activity will require compliance with all Local, State, or Federal laws and regulations, including those pertaining to confined space and waste disposal methods, in effect at the time such maintenance occurs.

COVENANT

NOW THEREFORE in consideration of the foregoing, it is mutually stipulated and agreed as follows:

1. Owner hereby provides the City or City's designee complete access, of any duration, to the BMPs and their immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by City's Director of Public Works ("Director") on advance notice, for the purpose of inspection, sampling, testing of the BMPs and in case of emergency, to undertake all necessary repairs or other preventative measures at Owner's expense as provided in paragraph 3 below. City shall make every effort at all times to minimize or avoid interference with Owner's use of the Property.

2. Owner shall use its best efforts diligently to maintain all BMPs in a manner assuring peak performance at all times. All reasonable precautions shall be exercised by Owner and Owner's representative or contractor in the removal and extraction of any material(s) from the BMPs and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. As may be requested from time to time by the City, the Owner shall provide the City with documentation identifying the material(s) removed, the quantity, and disposal destination.

3. In the event Owner, or its successors or assigns, fails to accomplish the necessary maintenance contemplated by this Agreement, within five (5) days of being given written notice by the City, the City is hereby authorized to cause any maintenance necessary to be done and charge the entire cost and expense to the Owner or Owner's successors or assigns, including administrative costs, attorneys fees and interest thereon at the maximum rate authorized by the Civil Code from the date of the notice of expense until paid in full.

4. The City may require the Owner to post security in form and for a time period satisfactory to the City to guarantee the performance of the obligations stated herein. Should the Owner fail to perform the obligations under the Agreement, the City may, in the case of a cash bond, act for the Owner using the proceeds from it, or in the case of a surety bond, require the sureties to perform the obligations of the Agreement. As an additional remedy, the Director may withdraw any previous Urban Runoff-related approval with respect to the property on which BMPs have been installed and/or implemented until such time as Owner repays to City its reasonable costs incurred in accordance with paragraph 3 above.

5. This Agreement and Covenant shall be recorded in the Office of the Recorder of Riverside County, California, at the expense of the Owner and shall constitute notice to all successors and assigns of the title to said Property of the obligation herein set forth, and also a lien in such amount as will fully reimburse the City, including interest as herein above set forth, subject to foreclosure in event of default in payment.

6. In event of legal action occasioned by any default or action of the Owner, or its successors or assigns, the Owner and its successors or assigns agree(s) to pay all costs incurred by the City in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same shall become a part of the lien against said Property.

7. It is the intent of the parties hereto that burdens and benefits herein undertaken shall constitute covenants that run with said Property and constitute a lien there against.

8. The obligations herein undertaken shall be binding upon the heirs, successors, executors, administrators and assigns of the parties hereto. The term "Owner" shall include not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner shall notify any successor to title of all or part of the Property about the existence of this Agreement and Covenant. Owner shall provide such notice prior to such successor obtaining an interest in all or part of the Property. Owner shall provide a copy of such notice to the City at the same time such notice is provided to the successor.

9. Time is of the essence in the performance of this Agreement and Covenant.

10. Any notice to a party required or called for in this Agreement and Covenant shall be served in person, or by deposit in the U.S. Mail, first class postage prepaid, to the address set forth below. Notice(s) shall be deemed effective upon receipt, or seventy-two (72) hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice thereof to the other party.

IF TO CITY:

City of Rancho Mirage
69825 Highway 111
Rancho Mirage, CA 92270
Attn: Leland Cole, City Engineer
Ph. 760-770-3224

IF TO OWNER:

Konstantinos Patis
Horti Caesaris LLC
9401 Wilshire Blvd., 12th Floor
Beverly Hills, CA 90212-2928
Ph. 30(210)812-8242

[THE REMAINDER OF THIS PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS THEREOF, the parties hereto have affixed their signatures as of the date first written above.

CITY OF RANCHO MIRAGE

Leland Cole, R.C.E. 47159

City Engineer
Title

ATTEST:

Kristie Ramos, City Clerk

APPROVED AS TO FORM:

Steve Quintanilla, City Attorney

OWNER

Name

Title

Name

Title

NOTARIES ON FOLLOWING PAGE

EXHIBIT A
(Legal Description)

EXHIBIT B
(Map/Illustration)

EXHIBIT C
(Summary Excerpts from WQMP)

[TO BE ATTACHED]

LIST OF WQMP EXCERPTS INCLUDED IN EXHIBIT C

1. **COVER SHEET SUMMARY PAGE (INCLUDES WQMP PREPARATION/REVISION DATE) (1 PAGE)**
2. **SITE PLAN (REDUCED COPY OF PLAN FROM FULL WQMP) (1 PAGE)**
3. **OWNER'S CERTIFICATION AND NOTARY ATTACHMENT (2 PAGES)**
4. **SECTION I: "PROJECT DESCRIPTION" AND "ADDITIONAL PERMITS/APPROVALS TABLE" (2 PAGES)**
5. **SECTION II: "SITE CHARACTERIZATION" AND "RECEIVING WATERS TABLE" (2 PAGES)**
6. **SECTION III: "POLLUTANTS OF CONCERN" SUMMARY TABLE (1 PAGE)**
7. **SECTION IV: "HYDROLOGIC CONDITIONS OF CONCERN" CHECKBOXES & TABLE (2 PAGES)**
8. **SECTION V: "BEST MANAGEMENT PRACTICES" CHECKBOXES, SUMMARY, & LIST OF APPLICABLE IMPROVEMENT PLANS ON FILE AT THE CITY (3 PAGES)**
9. **SECTION VI: "OPERATION AND MAINTENANCE RESPONSIBILITY FOR BMPS" SUMMARY (1 PAGE)**
10. **SECTION VII: "FUNDING" SUMMARY (1 PAGE)**
11. **SUMMARY LIST OF DOCUMENTS IN FULL WQMP APPENDICES, INCLUDING DATES (1 PAGE)**
12. **SUMMARY OF HYDROLOGY / HYDRAULIC STUDY (2 PAGES)**
13. **"PROJECT-SPECIFIC WQMP SUMMARY DATA FORM" (APP. I) (1 PAGE)**

Appendix H

PHASE 1 ENVIRONMENTAL SITE ASSESSMENT – SUMMARY OF SITE REMEDIATION CONDUCTED AND USE RESTRICTIONS

N/A

Appendix I

PROJECT-SPECIFIC WQMP SUMMARY DATA FORM

Project-Specific WQMP Summary Data Form

Applicant Information	
Name and Title	Konstantinos Patis, Owner
Company	Horti Caesaris LLC
Phone	30(210)812-8242
Email	kpatis@centralicd.ch
Project Information	
Project Name (as shown on project application/project-specific WQMP)	Tentative Tract Map 38971
Street Address	Peterson Road
Nearest Cross Streets	Mirage Cove Drive
Municipality (City or Unincorporated County)	Rancho Mirage, CA
Zip Code	92270
Tract Number(s) and/or Assessor Parcel Number(s)	Tentative Tract Map 38971
Other (other information to help identify location of project)	

Indicate type of project.	**Priority Development Projects (Use an "X" in cell preceding project type):**	
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 25%
		SF hillside residence; impervious area ≥ 10,000 sq. ft.; Slope ≥ 10% & erosive soils
		Commercial or Industrial ≥ 100,000 sq. ft.
		Automotive repair shop
		Retail Gasoline Outlet disturbing > 5,000 sq. ft.
		Restaurant disturbing > 5,000 sq. ft.
	X	Home subdivision ≥ 10 housing units
		Parking lot ≥ 5,000 sq. ft. or ≥ 25 parking spaces

Date Project-Specific WQMP Submitted	
Size of Project Area (nearest 0.1 acre)	20.1
Will the project replace more than 50% of the impervious surfaces on an existing developed site?	No
Project Area managed with LID/Site Design BMPs (nearest 0.1 acre)	20.1
Are Treatment Control BMPs required?	No
Is the project subject to onsite retention by ordinance or policy?	Yes
Did the project meet the 100% LID/Site Design Measurable Goal?	Yes
Name of the entity that will implement, operate, and maintain the post-construction BMPs	Horti Caesaris LLC
Contact Name	Konstantinos Patis
Street or Mailing Address	9401 Wilshire Blvd., 12th Floor
City	Beverly Hills, CA
Zip Code	90212-2928
Phone	30(210)812-8242
Space Below for Use by City/County Staff Only	
Preceding Information Verified by (consistent with information in project-specific WQMP)	**Name:** **Date:**
Date Project-Specific WQMP Approved:	
Data Entered by	**Name:** **Date:**

Other Comments	

APPENDIX E

Sladden Engineering

45090 Golf Center Parkway, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite C, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
www.Sladdenengineering.com

June 7, 2024

Project No. 544-22493
24-06-294

Konstantinos Patis
c/o Horti Caesaris ,LLC
9401 Wilshire Boulevard, 12th Floor
Beverly Hills, California 90212-2928

Project: Tract Map No. 68971
APN's 689-130-005, 014,017,018
APN's 689-090-003 & 689-140-022
Peterson Road
Rancho Mirage, California

Subject: Geotechnical Update

Ref: Geotechnical Investigation report prepared by Sladden Engineering dated October 19, 2010; Project No. 544-10159, Report No. 10-10-237
Geotechnical Update prepared by Sladden Engineering dated December 7, 2022; Project No. 544-22493, Report No. 22-12-717

In accordance with your request, we have reviewed the above referenced Geotechnical Investigation report and Geotechnical Update as they relate to the design and construction of the residences proposed for the properties identified as APN's 689-130-005, 014,017,018, 689-090-003 & 689-140-022 located on Peterson Road north of Mirage Cove Drive in the City of Rancho Mirage, California. It is our understanding that the proposed residential structures will be of relatively lightweight wood-frame or light gauge steel-frame construction and will be supported by conventional shallow spread footings and concrete slabs on grade.

The referenced reports include recommendations pertaining to the design and construction of residential structure foundations. Based upon our review of the referenced report, our previous experience on the project site and our understanding of the proposed construction, it is our opinion that the structural values and remedial grading recommendations included in this report remain applicable for the design and construction of the residential structures, except as amended herein.

The proposed residential buildings may be supported upon conventional shallow spread footings. Conventional shallow spread footings should be bottomed into properly compacted engineered fill soil a minimum of 12 inches below lowest adjacent grade. Continuous footings should be at least 12 inches wide and isolated pad footings should be at least 2 feet wide. Continuous footings and isolated pad footings may be designed utilizing allowable bearing pressures of 1800 psf and 2000 psf, respectively. Allowable increases of 250 psf for each additional 1 foot of width and 250 psf for each additional 6 inches of depth may be utilized, if desired. The maximum allowable bearing pressure should be 2500 psf. The recommended allowable bearing pressures may be increased by one-third for wind and seismic loading.

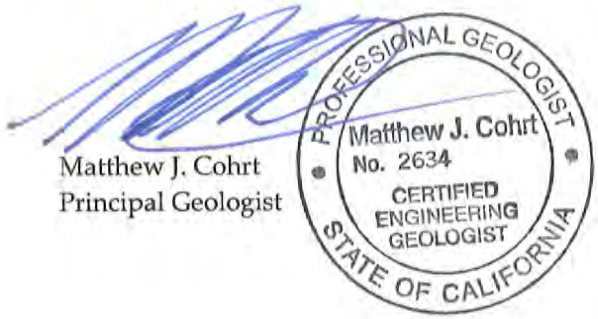
To provide firm and uniform foundation bearing conditions, the primary foundation bearing soil should be over-excavated and recompacted. Over-excavation should extend to a minimum depth of 5 feet below existing grade or 5 feet below the bottom of the footings, whichever is deeper. Once adequate removals have been verified, the exposed native soil should be moisture conditioned to near optimum moisture content and compacted to at least 90 percent relative compaction. The previously removed material may then be placed in thin lifts at near optimum moisture content and compacted to at least 90 percent relative compaction compacted engineered fill. Removals should extend at least 5 feet laterally beyond the footing limits.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this letter or the referenced report, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING



Brett L. Anderson
Principal Engineer



Matthew J. Cohrt
Principal Geologist

SER/cg

Copies: pdf/ Addressee

SITE-SPECIFIC GROUND MOTION ANALYSIS
(ASCE 7-16)

Project: PROPOSED RESIDENTIAL SUBDIVISIONS
Project Number: 544-22493
Client: KONSTANTINOS PATIS
Site Lat/Long: 33.7690/-116.4391
Controlling Seismic Source: San Andreas Fault

REFERENCE	NOTATION	VALUE
Site Class	C, D, D default, or E	D measured
Site Class D - Table 11.4-1	F_a	1.0
Site Class D - 21.3(ii)	F_v	2.5
$0.2*(S_{D1}/S_{DS})$	T_0	0.205
S_{D1}/S_{DS}	T_S	1.027
Fundamental Period (12.8.2)	T	Period
Seismic Design Maps or Fig 22-14	T_L	8
Equation 11.4-4 - $2/3*S_{M1}$	S_{D1}	1.0433
Equation 11.4-2 - F_V*S_1 [1]	S_{M1}	1.5650

[1] - F_v as determined by Section 21.3

REFERENCE	NOTATION	VALUE
Fv (Table 11.4-2)[Used for General Spectrum]	F_v	1.7
Design Maps	S_s	1.524
Design Maps	S_1	0.626
Equation 11.4-1 - F_A*S_S	S_{MS}	1.524*
Equation 11.4-3 - $2/3*S_{MS}$	S_{DS}	1.016*
Design Maps	PGA	0.668
Table 11.8-1	F_{PGA}	1.1
Equation 11.8-1 - $F_{PGA}*PGA$	PGA_M	0.735*
Section 21.5.3	80% of PGA_M	0.588
Design Maps	C_{RS}	0.913
Design Maps	C_{R1}	0.894

REFERENCE	NOTATION	VALUE
$0.2*(S_{D1}/S_{DS})$	T_0	0.14*
S_{D1}/S_{DS}	T_S	0.698*
Equation 11.4-4 - $2/3*S_{M1}$	S_{D1}	0.709*
Equation 11.4-2 - F_V*S_1	S_{M1}	1.064*

RISK COEFFICIENT

Cr - At Perods <=0.2, Cr=C_{RS}	C_{RS}	0.913
Cr - At Periods >=1.0, Cr=C_{R1}	C_{R1}	0.894

Cr - At Periods between 0.2 and 1.0 use trendline formula to complete

Period	Cr
0.200	0.913
0.300	0.911
0.400	0.908
0.500	0.906
0.600	0.904
0.680	0.902
1.000	0.894

* Code based design value. See accompanying data for Site Specific Design values.

Mapped values from https://hazards.atcouncil.org/
https://www.seismicmaps.org/

Sladden Engineering

PROBABILISTIC SPECTRA[1]
2% in 50 year Exceedence

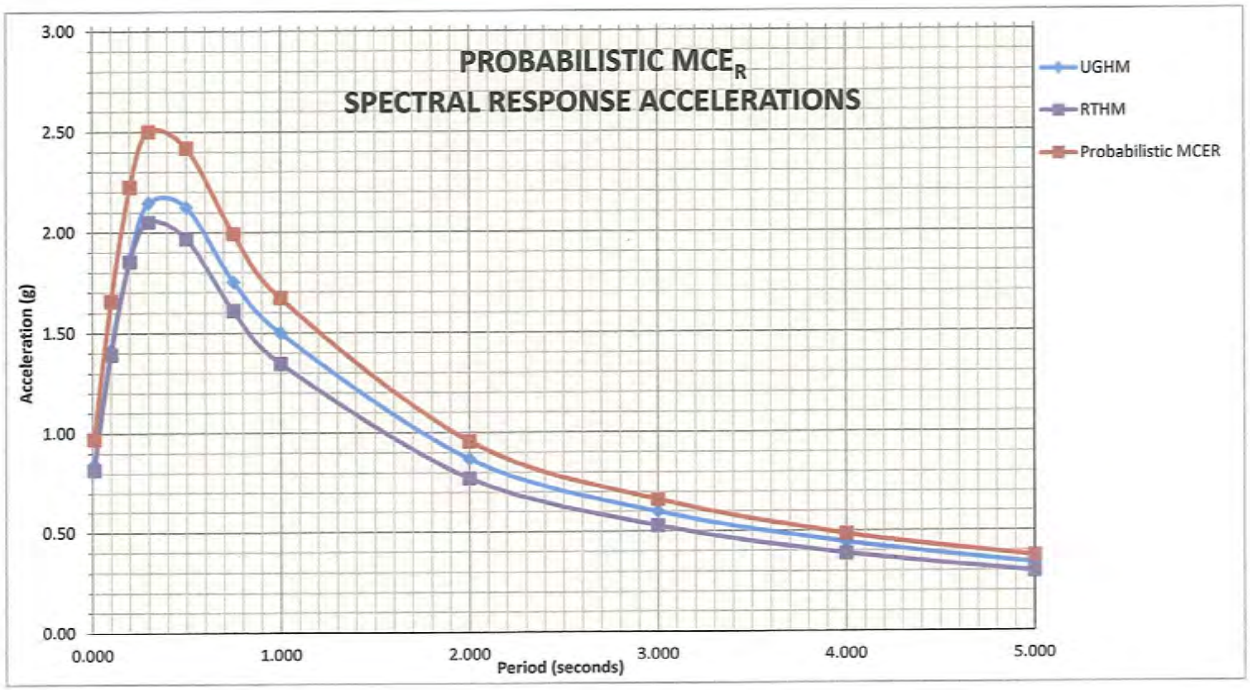
Project No: 544-22493

Period	UGHM	RTGM	Max Directional Scale Factor[2]	Probabilistic MCE
0.010	0.844	0.816	1.19	0.971
0.100	1.418	1.392	1.19	1.656
0.200	1.868	1.853	1.20	2.224
0.300	2.145	2.050	1.22	2.501
0.500	2.123	1.967	1.23	2.419
0.750	1.750	1.606	1.24	1.991
1.000	1.497	1.346	1.24	1.669
2.000	0.867	0.770	1.24	0.955
3.000	0.597	0.527	1.25	0.659
4.000	0.441	0.386	1.25	0.483
5.000	0.337	0.297	1.26	0.374

[1] Data Sources:
https://earthquake.usgs.gov/hazards/interactive/
https://earthquake.usgs.gov/designmaps/rtgm/

[2] Shahi-Baker RotD100/RotD50 Factors (2014)

Probabilistic PGA: 0.844
Is Probabilistic $Sa_{(max)}$<1.2F_a? NO



Sladden Engineering

DETERMINISTIC SPECTRUM

Largest Amplitudes of Ground Motions Considering All Sources Calculated using Weighted Mean of Attenuation Equations[1]

Controlling Source: San Andreas Fault

Is Probabilistic $Sa_{(max)}$<1.2Fa? NO

Project No: 544-22493

Period	Deterministic PSa Median + 1.σ for 5% Damping	Max Directional Scale Factor[2]	Deterministic MCE	Section 21.2.2 Scaling Factor Applied
0.010	0.685	1.19	0.815	0.815
0.020	0.685	1.19	0.815	0.815
0.030	0.695	1.19	0.827	0.827
0.050	0.739	1.19	0.880	0.880
0.075	0.886	1.19	1.054	1.054
0.100	1.052	1.19	1.252	1.252
0.150	1.296	1.20	1.555	1.555
0.200	1.453	1.20	1.743	1.743
0.250	1.562	1.21	1.889	1.889
0.300	1.620	1.22	1.976	1.976
0.400	1.636	1.23	2.012	2.012
0.500	1.583	1.23	1.947	1.947
0.750	1.283	1.24	1.591	1.591
1.000	1.079	1.24	1.338	1.338
1.500	0.779	1.24	0.966	0.966
2.000	0.595	1.24	0.738	0.738
3.000	0.409	1.25	0.512	0.512
4.000	0.289	1.25	0.361	0.361
5.000	0.215	1.26	0.271	0.271

Is Determinstic $Sa_{(max)}$<1.5*Fa? NO

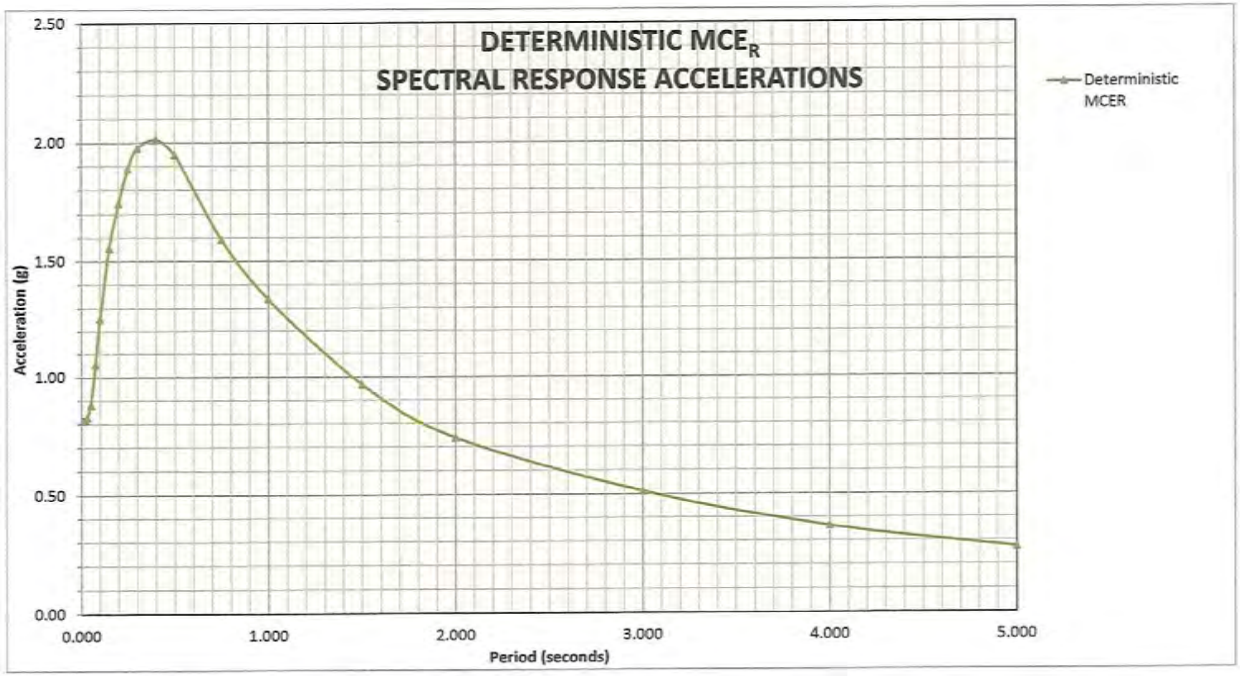
Section 21.2.2 Scaling Factor: N/A

Deterministic PGA: 0.685

Is Deterministic PGA >=F_{PGA}*0.5? YES

[1] NGAWest 2 GMPE worksheet and Uniform California Earthquake Rupture Forecast, Version 3 (UCERF3) - Time Dependent Model

[2] Shahi-Baker RotD100/RotD50 Factors (2014)



Sladden Engineering

SITE SPECIFIC SPECTRA

Period	Probabilistic MCE	Deterministic MCE	Site-Specific MCE	Design Response Spectrum (Sa)
0.010	0.971	0.815	0.815	0.543
0.100	1.656	1.252	1.252	0.835
0.200	2.224	1.743	1.743	1.162
0.300	2.501	1.976	1.976	1.318
0.500	2.419	1.947	1.947	1.298
0.750	1.991	1.591	1.591	1.061
1.000	1.669	1.338	1.338	0.892
2.000	0.955	0.738	0.738	0.492
3.000	0.659	0.512	0.512	0.341
4.000	0.483	0.361	0.361	0.241
5.000	0.374	0.271	0.271	0.181

ASCE 7-16: Section 21.4

Site Specific

	Calculated Value	Design Value
SDS:	1.186	1.186
SD1:	1.024	1.024
SMS:	1.779	1.779
SM1:	1.536	1.536
Site Specific PGAm:	0.685	0.685
Site Class:	D measured	

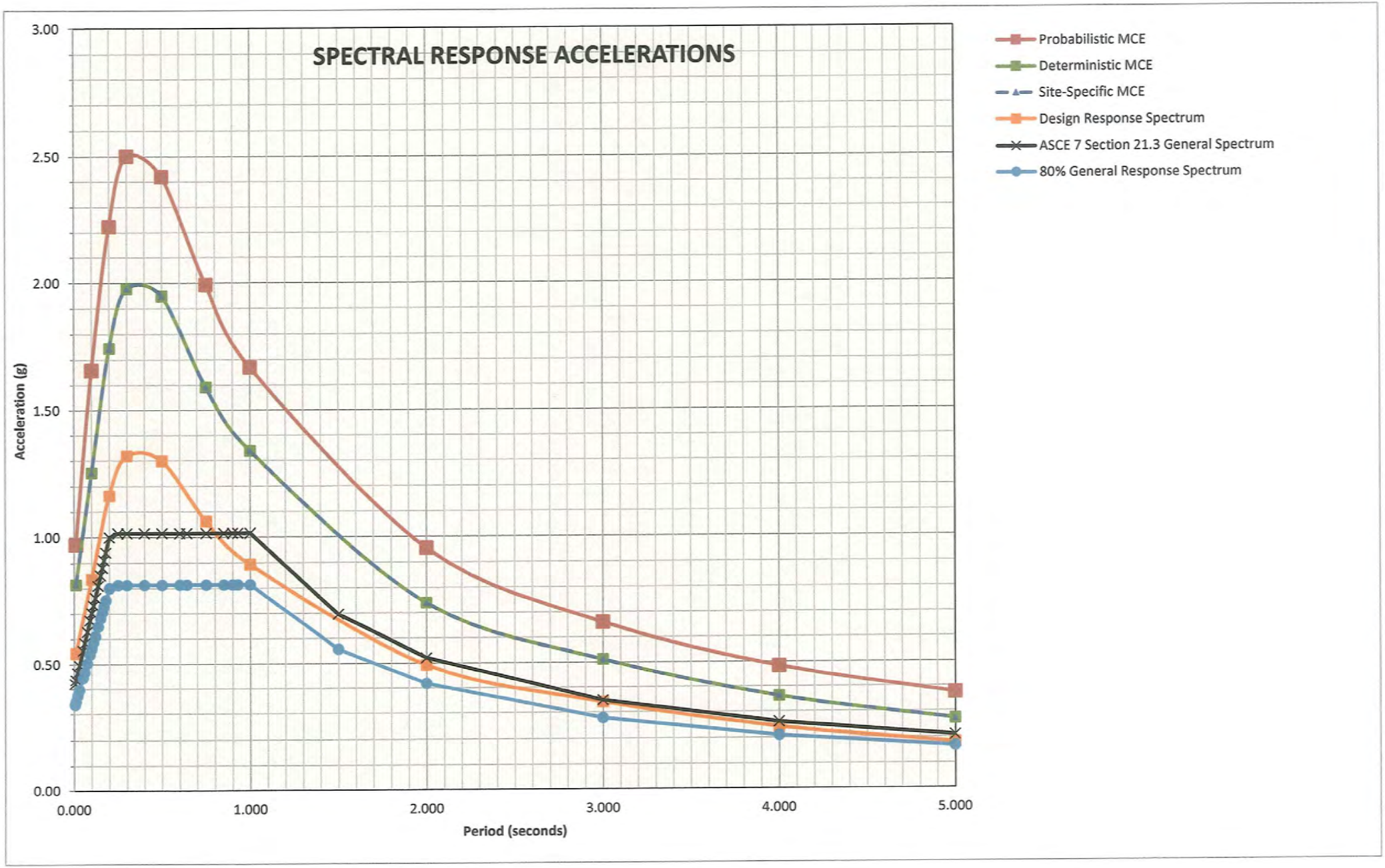
Seismic Design Category - Short* D

Seismic Design Category - 1s* D

* Risk Categories I, II, or III

Period	ASCE 7 SECTION 21.3 General Spectrum	80% General Response Spectrum
0.005	0.421	0.337
0.010	0.436	0.349
0.020	0.466	0.373
0.030	0.495	0.396
0.050	0.555	0.444
0.060	0.584	0.468
0.075	0.629	0.503
0.090	0.674	0.539
0.100	0.703	0.563
0.110	0.733	0.586
0.120	0.763	0.610
0.136	0.810	0.648
0.150	0.852	0.681
0.160	0.881	0.705
0.170	0.911	0.729
0.180	0.941	0.753
0.200	1.000	0.800
0.250	1.016	0.813
0.300	1.016	0.813
0.400	1.016	0.813
0.500	1.016	0.813
0.600	1.016	0.813
0.640	1.016	0.813
0.750	1.016	0.813
0.850	1.016	0.813
0.900	1.016	0.813
0.930	1.016	0.813
1.000	1.016	0.813
1.500	0.696	0.556
2.000	0.522	0.417
3.000	0.348	0.278
4.000	0.261	0.209
5.000	0.209	0.167

Project No: 544-22493


SPECTRAL RESPONSE ACCELERATIONS
Probabilistic MCE
Deterministic MCE
Site-Specific MCE
Design Response Spectrum
ASCE 7 Section 21.3 General Spectrum
80% General Response Spectrum
Acceleration (g)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0.000
1.000
2.000
3.000
4.000
5.000
Period (seconds)

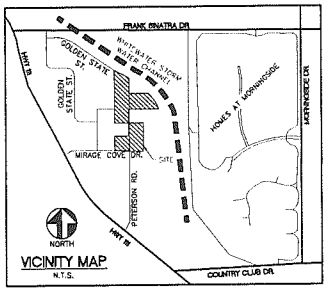
PRELIMINARY

TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FOMOTOR ENGINEERING

APRIL 2024



VICINITY MAP
N.T.S.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF RANCHO MIRAGE IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:
THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM 1/16TH OF ALL COAL, OIL, GAS, AND OTHER MINERAL DEPOSITS IN SAID LAND, RESERVED IN PATENT FROM THE STATE OF CALIFORNIA, RECORDED DECEMBER 03, 1923 IN
BOOK 8, PAGE 398 OF PATENTS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

(APN 689-130-014)

PARCEL 2:
THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN.

(APN 689-130-017; APN 689-130-018)

PARCEL 3:
THAT PORTION OF THE NORTHERLY 247.50 FEET OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND
MERIDIAN, ACCORDING TO UNITED STATES GOVERNMENT SURVEY THEREOF, LYING WESTERLY OF THE WESTERLY LINE OF THE COACHELLA VALLEY STORM WATER CHANNEL.

(APN 689-130-004)

PARCEL 3A:
A NON-EXCLUSIVE EASEMENT FOR ROAD AND PUBLIC UTILITIES, OVER THE WESTERLY 15 FEET OF THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST
QUARTER, AND THE WESTERLY 15 FEET OF THE WEST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER, AND THE EASTERLY 15 FEET OF SOUTHEAST
QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, AND THE EASTERLY 15 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST
QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER IN SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO UNITED STATES
GOVERNMENT SURVEY THEREOF.

PARCEL 4:
THAT PORTION OF THE NORTH HALF OF THE NORTH HALF QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN
BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 247.50 FEET SOUTH OF THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5, RANGE 5 EAST SAN
BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF; THENCE CONTINUING SOUTH 00°34'50" EAST TO THE SOUTHWEST CORNER OF THE SOUTH HALF OF THE NORTH HALF OF THE
NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2; THENCE EASTERLY AND PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST QUARTER OF THE
NORTHWEST QUARTER OF SAID SECTION 2, TO THE WESTERLY BOUNDARY LINE OF THE COACHELLA VALLEY STORM WATER CANAL; THENCE NORTHWESTERLY ON THE WESTERLY BOUNDARY LINE OF
THE COACHELLA VALLEY STORM WATER CANAL TO A POINT 247.50 FEET SOUTH OF THE NORTH BOUNDARY LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2,
WHEN MEASURED ON A LINE PARALLEL WITH THE EASTERLY LINE OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2; THENCE WESTERLY
AND PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2, TO THE POINT OF BEGINNING.

(APN 689-130-005)

PARCEL 5:
THE EASTERLY RECTANGULAR 330.79 FEET OF GOVERNMENT LOT 4, SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, LYING SOUTHERLY OF THE SOUTH RIGHT OF WAY OF THE COACHELLA VALLEY STORM WATER CHANNEL.

(APN 689-090-003)

PARCEL 6:
THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN, IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

EXCEPTING THEREFROM THE WESTERLY 15 FEET.

ALSO EXCEPTING THEREFROM, 1/16TH OF ALL COAL, OIL, GAS, AND OTHER MINERAL DEPOSITS CONTAINED IN SAID LAND, AS RESERVED TO THE STATE OF CALIFORNIA IN THE PATENT RECORDED
DECEMBER 03, 1923 IN BOOK 8, PAGE 398 OF PATENTS, RIVERSIDE COUNTY RECORDS.

(APN 689-140-022)

PARCEL 7:
PARCEL A, IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON EXHIBIT "A" ATTACHED TO CERTIFICATE OF COMPLIANCE RECORDED SEPTEMBER 30,
1997 AS INSTRUMENT NO. 355737 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA. WEST ½ OF THE SOUTHWEST ¼ OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 2,
TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ONE-SIXTEENTH OF ALL COAL, OIL, GAS, AND MINERAL DEPOSITS IN SAID LAND RESERVED IN PATENT FROM THE STATE OF CALIFORNIA, RECORDED DECEMBER 03, 1923 IN
BOOK 8, PAGE 398 OF PATENTS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

(APN 689-130-013)

EASEMENT NOTES

1. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

3. RIGHTS OF THE PUBLIC IN AND TO ANY PORTION OF SAID LAND, LYING WITHIN ANY LAWFULLY ESTABLISHED STREETS, ROADS, OR HIGHWAYS.

4. ANY RIGHT, TITLE, AND INTEREST OF THE STATE OF CALIFORNIA IN AND TO ALL COAL, OIL, OILSHALE, GAS, PHOSPHATE, SODIUM, AND OTHER MINERAL DEPOSITS UNDER THE PROVISIONS OF CHAPTER 303, STATUTES OF 1921, EXCEPT AS TO A 15/16THS OF ALL OIL AND GAS RESERVED IN PATENT RECORDED DECEMBER 03, 1923 IN BOOK 8, PAGE 398 OF PATENTS.

5. ANY RIGHT, TITLE, AND INTEREST OF THE STATE OF CALIFORNIA, IN AND TO ALL COAL, OIL, OILSHALE, GAS PHOSPHATE, SODIUM, AND OTHER MINERAL DEPOSITS, UNDER THE PROVISIONS OF CHAPTER 303, STATUTES OF 1921, EXCEPT AS TO 15/16THS OF ALL OIL AND GAS.

△6 6. EASEMENT IN FAVOR OF HARVEY E. PETERSON AND EDNA P. PETERSON FOR ROAD PURPOSES RECORDED APRIL 23, 1947 IN BOOK 832, PAGE 53 O.R. AFFECTS PARCELS 1 AND 6.

△7 7. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR UTILITIES PURPOSES RECORDED MARCH 23, 1948 IN BOOK 899, PAGE 277 O.R. AFFECTS PARCEL 6. (CENTERLINE OF UNDISCLOSED WIDTH)

△8 8. EASEMENT IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR THE TRANSMISSION OF ELECTRIC ENERGY PURPOSES RECORDED JANUARY 26, 1949 IN BOOK 1047, PAGE 72 O.R.
AFFECTS: PARCELS 2 AND 5

△9 9. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR THE TRANSMISSION OF ELECTRIC ENERGY PURPOSES RECORDED APRIL 25, 1950 IN BOOK 1167, PAGE 229 O.R.
AFFECTS: PARCELS 1, 2, AND 5. (CENTERLINE OF UNDISCLOSED WIDTH)

10. MATTERS CONTAINED IN THAT CERTAIN DOCUMENT ENTITLED "AGREEMENT" RECORDED AUGUST 10, 1950 IN BOOK 1186, PAGE 186 O.R.

△11 11. EASEMENTS FOR FLOOD CONTROL PURPOSES RECORDED APRIL 11, 1951 IN BOOK 1261, PAGE 183 O.R. AFFECTS: PARCELS 2, 4, AND 5

△12 12. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR UTILITIES PURPOSES RECORDED NOVEMBER 30, 1951 IN BOOK 1323, PAGE 415 O.R.
AFFECTS: PARCEL 6. (CENTERLINE OF UNDISCLOSED WIDTH)

13. EASEMENTS IN FAVOR OF FLOYD ALTON GILES FOR UNDERGROUND PIPELINES PURPOSES, RECORDED NOVEMBER 13, 1956 IN BOOK 2363, PAGE 7 O.R.
LOCATED FROM THE WELL PUMPING PLANT TO THE NORTH LINE OF SAID LAND.
AFFECTS: PARCELS 2, 3, 4, 5, AND 6
(THE LOCATION CANNOT BE DETERMINED FROM THE RECORD DOCUMENT)

△14 14. EASEMENTS FOR ROAD AND PUBLIC UTILITIES PURPOSES RECORDED JUNE 22, 1959 AS INSTRUMENT NO. 53997 O.R. ALSO RECORDED JUNE 22, 1959 AS INSTRUMENT NO. 53998 O.R.

△15 15. EASEMENTS IN FAVOR OF FLOYD A. GILES FOR UNDERGROUND PIPELINES PURPOSES RECORDED NOVEMBER 09, 1959 AS INSTRUMENT NO. 95489 O.R.

△16 16. EASEMENTS IN FAVOR OF GENERAL TELEPHONE COMPANY OF CALIFORNIA FOR THE TRANSMISSION OF ELECTRIC ENERGY FOR COMMUNICATION PURPOSES RECORDED OCTOBER 31, 1980 AS INSTRUMENT NO. 203643 O.R.

△17 17. EASEMENTS IN FAVOR OF GENERAL TELEPHONE COMPANY OF CALIFORNIA FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 15, 1981 AS INSTRUMENT NO. 7907 O.R.

18. DOCUMENT RECORDED MAY 01, 1981 IN 78588 O.R.
(IT IS NOT ON, OR DOES NOT TOUCH, THE SURVEYED PROPERTY)

△19 19. EASEMENTS IN FAVOR OF; THE CITY OF RANCHO MIRAGE FOR FLOOD CONTROL FACILITIES PURPOSES RECORDED MARCH 30, 1983 AS INSTRUMENT NO. 59319 O.R.

△20 20. EASEMENTS IN FAVOR OF; THE CITY OF RANCHO MIRAGE FOR STORM WATER CONTROL FACILITIES PURPOSES RECORDED AUGUST 03, 1984 AS INSTRUMENT NO. 169692 O.R.

21. THE LAND DESCRIBED HEREIN IS INCLUDED WITHIN A PROJECT AREA OF THE REDEVELOPMENT AGENCY SHOWN BELOW, AND THAT PROCEEDINGS FOR THE REDEVELOPMENT OF SAID PROJECT HAVE BEEN INSTITUTED UNDER THE REDEVELOPMENT LAW (SUCH REDEVELOPMENT TO PROCEED ONLY AFTER THE ADOPTION OF THE REDEVELOPMENT PLAN) AS DISCLOSED BY A DOCUMENT.
REDEVELOPMENT AGENCY: RANCHO MIRAGE REDEVELOPMENT AGENCY
RECORDING DATE: FEBRUARY 27, 2004
RECORDING NO: 2004-0134828 OF OFFICIAL RECORDS

△22 22. EASEMENTS IN FAVOR OF; SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO. 2009-0017714 O.R.

△23 23. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017715 O.R.

△24 24. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017716 O.R.

△25 25. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017717 O.R.

△26 26. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017718 O.R.

31. ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.

OWNER/APPLICANT

HORTI CAESARIS LLC
9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928

CONTACT:
KONSTANTINOS PATIS
CEO LAV
OFFICE: +302108128242
MOBILE: +306947378121
KPATIS@CENTRALICO.CH

VANJA HABEKOVIC
ERVIN COHEN & JESSUP LLP.
OFFICE: (310) 281-6377
FAX: (310) 877-6818

ENGINEER/SURVEYROR

FOMOTOR ENGINEERING
225. S. CIVIC DR. SUIT 1-5
PALM SPRINGS, CA 92262
PHILLIP FOMOTOR, CIVIL ENGINEER
EMAIL: SURVEY@FOMOTOR.COM
TEL: (760) 323-1842

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTER SECTION LINE OF SECTION 2, BEING N00°10'53"W PER RS 152/51.

FEMA ZONE

ZONE X (0.2% ANNUAL CHANCE FLOOD HAZARD OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREA OF LESS THAN ONE SQUARE MILE) PER FEMA MAP NO. 06065C1595G EFFECTIVE 08/28/2008.

ASSESSOR PARCEL NUMBER(S)

689-090-003, 689-130-004, 689-130-005, 689-130-013, 689-130-014, 689-130-017, 689-130-018, 689-140-022

EXISTING ZONING

RESIDENTIAL – ESTATE (R-E)
OPEN SPACE – FLOODWAYS & DRAINAGE CHANNELS (OS-W)

PROPOSED ZONING

RESIDENTIAL – ESTATE (RE)

BUILDING SETBACK

FRONT – 25'
REAR – 25'
SIDE (INTERIOR) – 10'
SIDE (STREET) – 25'

SCHOOL DISTRICT

RANCHO MIRAGE SCHOOL DISTRICT

LOT TABULATION

NO.	TYPE	GROSS ACRES
LOT(S) 1-16	RESIDENTIAL LOTS	17.38 AC.
LOT A	PUBLIC STREET	1.33 AC.
LOT B	PUBLIC STREET	0.70 AC.
LOT C	PUBLIC STREET	0.06 AC.
LOT D	PRIVATE STREET	0.34 AC.
TOTAL:	19.81 AC.	

UTILITIES:

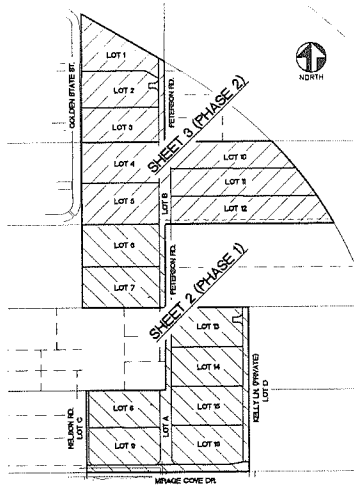
ELECTRIC: SOUTHERN CALIFORNIA EDISON
6899 OLD WOMAN SPRING RD.
YUCCA VALLEY, CA 92284
(760) 369-5413

WATER/SEWER: COACHELLA VALLEY WATER DISTRICT
51501 TYLER ST.
COACHELLA, CA 92236
(760) 398-2851

GAS: SOCAL GAS
PO BOX 1626
MONTEREY PARK, CA 91754-8626
(909) 305-8261

TELEPHONE: FRONTIER
1980 ORANGE TREE LN. STE 210
REDLANDS, CA 92374
(951) 992-1715

CABLE: GCI SYSTEMS (SPECTRUM)
105 KENT ST.
IRON MOUNTAIN, MI 49801
(800) 338-9289



INDEX MAP
SCALE 1"= 200'

DATE: 5/1/2024

DIGALERT — CALL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL — REGISTERED PROFESSIONAL ENGINEER — PHILIP K. FOMOTOR — No. 47264 — CIVIL — STATE OF CALIFORNIA

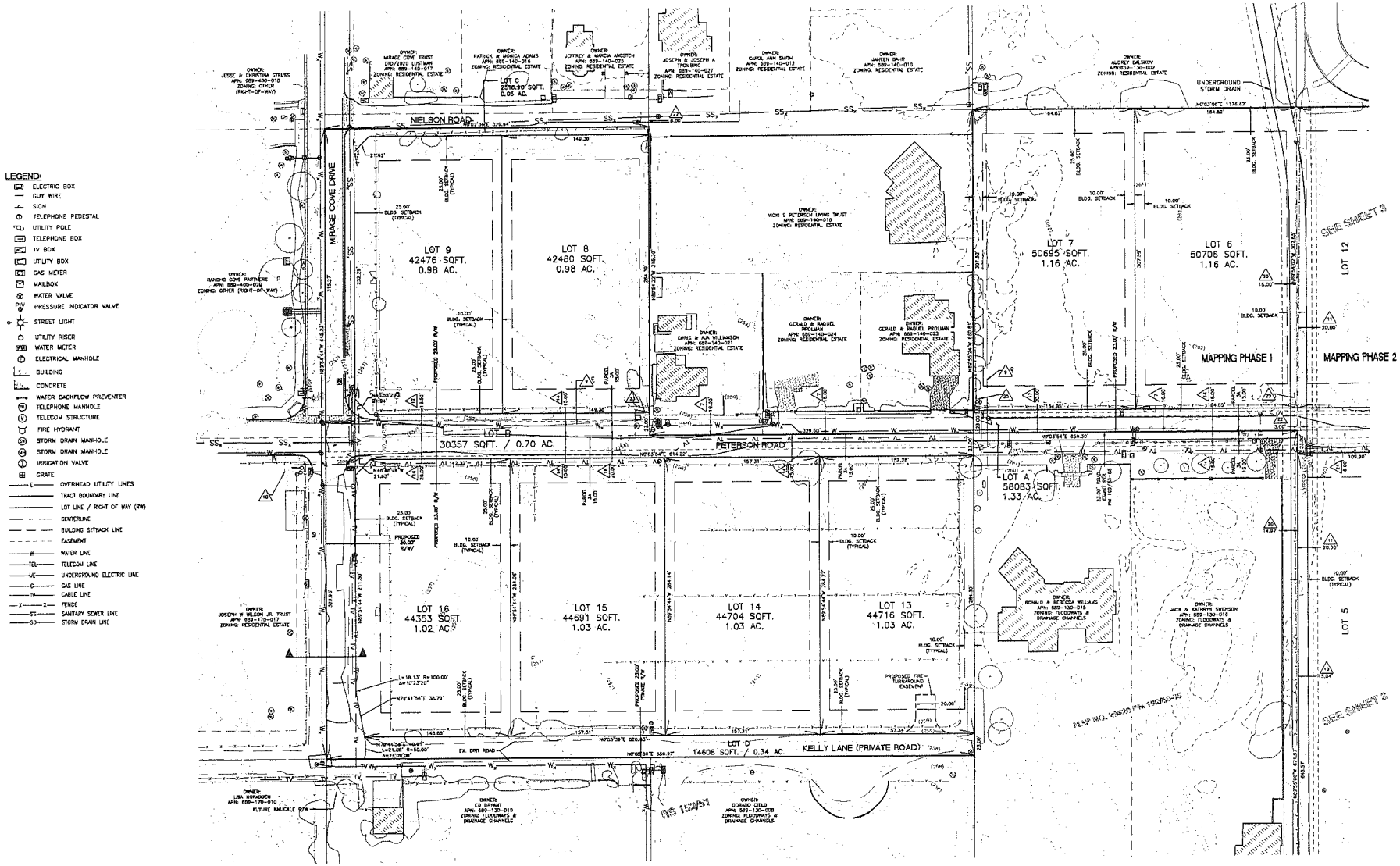
PRELIMINARY

PHILIP K. FOMOTOR PE., PLS. DATE:
R.C.E. NO. 47264

TRACT MAP NO. 68971
OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928
SITE: PETERSON RD.
RANCHO MIRAGE, CA 92270

PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

PRELIMINARY



DATE: 5/1/2024

DIGALERT — CALL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL — REGISTERED PROFESSIONAL ENGINEER — PHILLIP K. FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

PRELIMINARY

DATE: _____

PHILLIP K. FOMOTOR P.E., P.L.S.
R.C.E. NO. 47284

TRACT MAP NO. 68971

OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928

SITE: PETERSON RD.
RANCHO MIRAGE, CA 92270

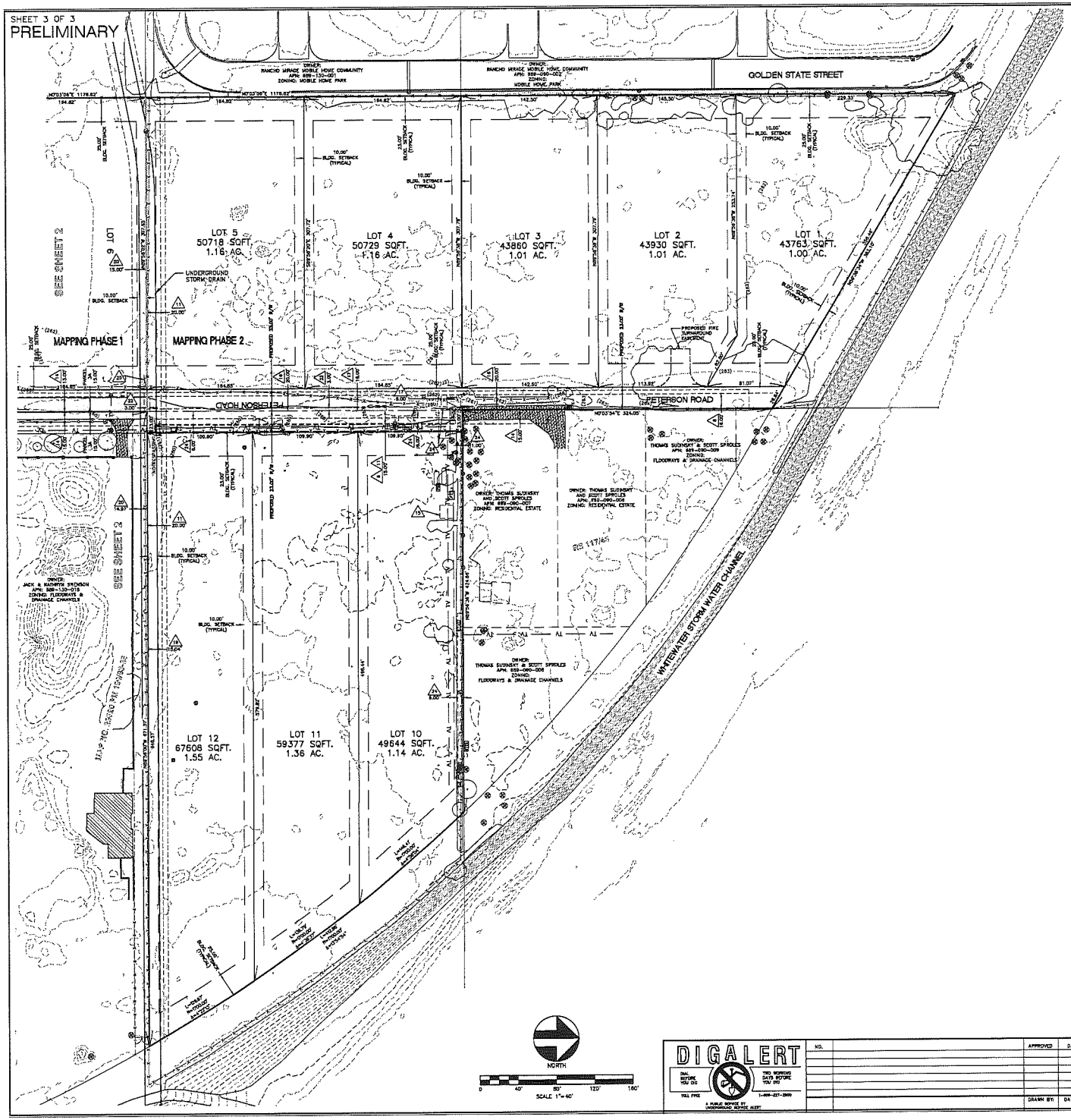
PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1049 FAX (760) 323-1742

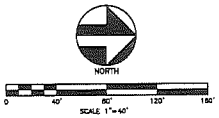
SHEET 3 OF 3
PRELIMINARY

TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FOMOTOR ENGINEERING — APRIL 2024





DATE: 5/1/2024

DIGALERT — CALL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE — 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL — REGISTERED PROFESSIONAL ENGINEER — PHILLIP K. FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

PRELIMINARY — DATE: _____

PHILLIP K. FOMOTOR PE, PLS.
R.C.E. NO. 47284

TRACT MAP NO. 68971

OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2925

SITE: PETERSON RD.
RANCHO MIRAGE, CA 92270

PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-3
PALM SPRINGS, CA. 92262
(760) 323-1942 FAX (760) 323-1742

GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
PETERSON ROAD - 20 ACRES
RANCHO MIRAGE, CALIFORNIA

-Prepared By-

Sladden Engineering

45090 Golf Center Parkway, Suite F
Indio, California 92201
(760) 772-3893

Sladden Engineering

45090 Golf Center Parkway, Suite F, Indio, California 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
800 E. Florida Avenue, Hemet, CA 92543 (951) 766-8777 Fax (951) 766-8778

October 19, 2010

Project No. 544-10159
10-10-237

IMH Special Asset NT 100, LLC
4900 North Scottsdale Blvd, Suite 5000
Scottsdale, Arizona 85251

Project: Proposed Residential Subdivision
Peterson Road - 20 Acres
Rancho Mirage, California

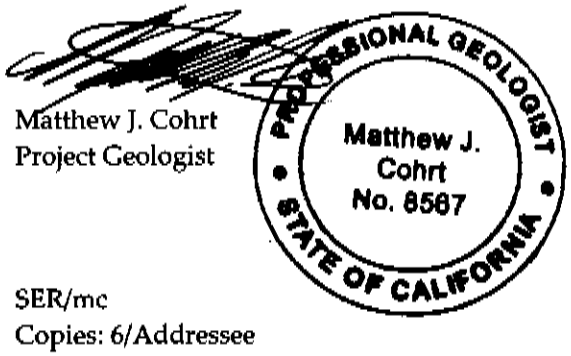
Subject: Geotechnical Investigation

Sladden Engineering is pleased to present the results of our geotechnical investigation for the proposed residential subdivision to be constructed adjacent to Peterson Road and north of Mirage Cove Drive in the City of Rancho Mirage, California. Our services were completed in accordance with our proposal for geotechnical engineering services dated August 31, 2010 and your authorization to proceed with the work. The purpose of our investigation was to explore the subsurface conditions at the site in order to provide recommendations for foundation design and site preparation. Evaluation of environmental issues and hazardous wastes was not included within the scope of services provided.

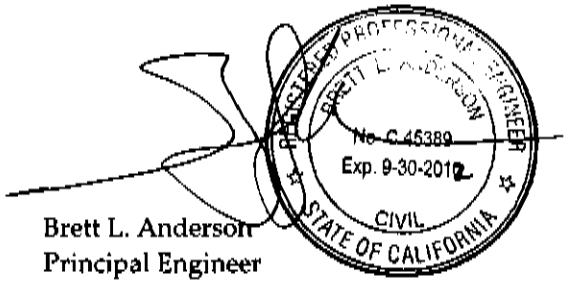
The opinions, recommendations and design criteria presented in this report are based on our field exploration program, laboratory testing and engineering analyses. Based on the results of our investigation, it is our professional opinion that the proposed project is feasible provided the recommendations presented in this report are implemented in the design and carried out through construction.

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this report, please contact the undersigned.

Respectfully submitted,
SLADDEN ENGINEERING



Matthew J. Cohrt
Project Geologist



Brett L. Anderson
Principal Engineer

SER/mc
Copies: 6/Addressee

GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
PETERSON ROAD - 20 ACRES
RANCHO MIRAGE, CALIFORNIA

October 19, 2010

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INTRODUCTION

This report presents the results of the geotechnical investigation performed by Sladden Engineering (Sladden) for the proposed future residential development to be located adjacent to Peterson Road and north of Mirage Cove Drive in the City of Rancho Mirage, California. The site consists of seven (7) parcels that are located on the NW ¼ of Section 2, Township 5 South, Range 5 East (SBBM) at approximately 33.76919° north latitude and 116.43917° west longitude. The approximate location of the site is indicated on the Site Location Map (Figure 1).

Our investigation was conducted in order to evaluate the engineering properties of the subsurface materials, to evaluate their *in-situ* characteristics, and to provide engineering recommendations and design criteria for site preparation, foundation design and the design of various site improvements. This study also includes a review of published and unpublished geotechnical and geological literature regarding seismicity at and near the subject site.

PROJECT DESCRIPTION

Based on our preliminary conversations, it is our understanding that future construction at the site will consist of constructing a new residential subdivision. Sladden anticipates that the proposed project will also include new concrete flatwork, paved roads and various other associated site improvements. For our analyses we expect that the future residences will consist of relatively lightweight one-story or two-story, wood-frame structures supported on conventional shallow spread footings and concrete slabs-on-grade.

Grading plans and finished floor elevation were not available at the time of this report. However, based on the relatively level nature of the site, Sladden expects that grading will be limited to minor cuts and fills in order to accomplish the desired pad elevations and provide adequate gradients for site drainage. This does not include the removal and recompaction of foundation bearing soil within the building envelope. Upon completion of precise grading plans, Sladden should be retained in order to ensure that the recommendations presented within in this report are incorporated into the design of the proposed project.

Structural foundation loads were not available at the time of this report. Based on our experience with relatively lightweight structures, we expect that isolated column loads will be less than 20 kips and continuous wall loads will be less than 2.0 kips per linear foot. If these assumed loads vary significantly from the actual loads, we should be consulted to verify the applicability of the recommendations provided.

SCOPE OF SERVICES

The purpose of our investigation was to determine specific engineering characteristics of the surface and near surface soil in order to develop foundation design criteria and recommendations for site preparation. Exploration of the site was achieved by drilling ten (10) exploratory boreholes to depths between approximately 21.5 and 51.5 feet below (existing) ground surface (bgs). Specifically, our site characterization consisted of the following tasks:

- Site reconnaissance to assess the existing surface conditions on and adjacent to the site.
- Advancing ten (10) exploratory boreholes to depths between approximately 21.5 and 51.5 feet bgs in order to characterize the subsurface soil conditions. Representative samples of the soil were classified in the field and retained for laboratory testing and engineering analyses.
- Performing laboratory testing on selected samples to evaluate their engineering characteristics.
- Reviewing geologic literature and discussing geologic hazards.
- Performing engineering analyses to develop recommendations for foundation design and site preparation.
- The preparation of this report summarizing our work at the site.

SITE CONDITIONS

The subject site is located on east and west of Peterson Road and north of Mirage Cove Drive in the City of Rancho Mirage. The site consists of seven (7) undeveloped parcels that occupy a combined area of approximately 20 acres. The site is located in an area of custom residential homes and is generally bounded by residential structures to the immediate west, Mirage Cove Drive to the south, residential properties to the east and the Whitewater River Channel to the immediate north. At the time of our investigation, the site had been cleared of vegetative cover and structures.

Based on our review of the United States Geological Survey (USGS) 7.5' Cathedral City Quadrangle map (1981) and Riverside County Land Information System (RCLIS, 2010), the site is situated at an approximate elevation of 260 feet above mean sea level (AMSL).

No natural ponding of water or surface seeps were observed at or near the site during our investigation conducted on September 29, 2010. Site drainage appears to be controlled via sheet flow and surface infiltration. Regional drainage is provided by the Whitewater River that is located to the immediate north of the site.

GEOLOGIC SETTING

The project site is located within the Colorado Desert Physiographic Province (also referred to as the Salton Trough) that is characterized as a northwest-southeast trending structural depression extending from the Gulf of California to the Banning Pass. The Salton Trough is dominated by several northwest trending faults, most notably the San Andreas Fault system. The Salton Trough is bounded by the Santa Rosa – San Jacinto Mountains on the southwest, the San Bernardino Mountains on the north, the Little San Bernardino - Chocolate – Orocopia Mountains on the east, and extends through the Imperial Valley into the Gulf of California on the south.

A relatively thick sequence (20,000 feet) of sediment have been deposited in the Coachella Valley portion of the Salton Trough from Miocene to present times. These sediments are predominately terrestrial in nature with some lacustrian (lake) and minor marine deposits. The major contributor of these sediments has been the Colorado River. The mountains surrounding the Coachella Valley are composed primarily of Precambrian metamorphic and Mesozoic "granitic" rock.

The Salton Trough is an internally draining area with no readily available outlet to Gulf of California and with portions well below sea level (-253' msl). The region is intermittently blocked from the Gulf of California by the damming effects of the Colorado River delta (current elevation +30'msl). Between about 300AD and 1600 AD (to 1700 ?) the Salton Trough has been inundated by the River's water, forming ancient Lake Cahuilla (max. elevation +58' msl). Since that time the floor of the Trough has been repeatedly flooded with other "fresh" water lakes (1849, 1861, and 1891), the most recent and historically long lived being the current Salton Sea (1905). The sole outlet for these waters is evaporation, leaving behind vast amounts of terrestrial sediment materials and evaporite minerals.

The site has been mapped by Rogers (1965) to be immediately underlain by undifferentiated Quaternary-age alluvium and sand (Qal-Qs). The regional geologic setting for the site vicinity is presented on the Regional Geologic Map (Figure 2).

SUBSURFACE CONDITIONS

The subsurface conditions at the site were investigated by drilling ten (10) exploratory boreholes to depths between approximately 21.5 and 51.5 feet bgs. The approximate locations of the boreholes are illustrated on the Borehole Location Plan (Figure 3). The boreholes were advanced using a truck-mounted Mobile B-61 drill rig equipped with 8-inch outside diameter (O.D.) hollow stem augers. A representative of Sladden was on-site to log the materials encountered and retrieve samples for laboratory testing and engineering analysis.

During our field investigation, a thin mantle of artificial fill soil on the order of five (5) feet bgs was encountered directly overlying alluvium consisting of silty sand, sand and silt. Detailed descriptions of the subsurface materials encountered are included in Appendix A of this report.

Groundwater was not encountered during our field investigation. Based on our field investigation and previous experience in the project vicinity, it is our opinion that groundwater should not be a factor during the construction of the proposed project.

SEISMICITY AND FAULTING

The southwestern United States is a tectonically active and structurally complex region, dominated by northwest trending dextral faults. The faults of the region are often part of complex fault systems, composed of numerous subparallel faults which splay or step from main fault traces. Strong seismic shaking could be produced by any of these faults during the design life of the proposed project.

We consider the most significant geologic hazard to the project to be the potential for moderate to strong seismic shaking that is likely to occur during the design life of the project. The proposed project is located in the highly seismic Southern California region within the influence of several fault systems that are considered to be active or potentially active. An active fault is defined by the State of California as a "sufficiently active and well defined fault" that has exhibited surface displacement within the Holocene epoch (about the last 11,000 years). A potentially active fault is defined by the State as a fault with a history of movement within Pleistocene time (between 11,000 and 1.6 million years ago).

As previously stated, the site has been subjected to strong seismic shaking related to active faults that traverse through the region. Some of the more significant seismic events near the subject site within recent times include: M6.0 North Palm Springs (1986), M6.1 Joshua Tree (1992), M7.3 Landers (1992), M6.2 Big Bear (1992) and M7.1 Hector Mine (1999).

Table 1 lists the closest known potentially active faults that was generated in part using the EQFAULT computer program (Blake, 2000), as modified using the fault parameters from The Revised 2002 California Probabilistic Seismic Hazard Maps (Cao et al, 2003). This table does not identify the probability of reactivation or the on-site effects from earthquakes occurring on any of the other faults in the region.

TABLE 1
CLOSEST KNOWN ACTIVE FAULTS

Fault Name	Distance (Km)	Maximum Event
San Andreas - Coachella	12.2	7.2
San Andreas - Southern	12.2	7.2
San Andreas - San Bernardino	17.6	7.5
Burnt Mountain	20.4	6.5
Eureka Peak	24.1	6.4
San Jacinto - Anza	30.7	7.2
San Jacinto - Coyote Creek	35.3	6.8
Pinto Mountain	36.3	7.2

2007 CBC SEISMIC DESIGN PARAMETERS

Sladden has reviewed the 2007 California Building Code (CBC) and summarized the current seismic design parameters for the proposed residential structures. The seismic design category for a structure may be determined in accordance with Section 1613 of the 2007 CBC or ASCE7. According to the 2007 CBC, Site Class D may be used to estimate design seismic loading for the proposed structure. The period of the structures should be less than ½ second. This assumption should be verified by the project structural engineer. The 2007 CBC Seismic Design Parameters are summarized below.

Occupancy Category (Table 1604.5): II
Site Class (Table 1613.5.5): D
Ss (Figure 1613.5.1): 1.500g
S1 (Figure 1613.5.1): 0.600g
Fa (Table 1613.5.3(1)): 1.0
Fv (Table 1613.5.3(2)): 1.5
S_{MS} (Equation 16-37 {Fa X Ss}): 1.500g
S_{M1} (Equation 16-38 {Fv X S1}): 0.900g
S_{DS} (Equation 16-39 {2/3 X S_{MS}}): 1.000g
S_{D1} (Equation 16-40 {2/3 X S_{M1}}): 0.600g
Seismic Design Category: D

GEOLOGIC HAZARDS

The subject site is located in an active seismic zone and will likely experience strong seismic shaking during the design life of the proposed project. In general, the intensity of ground shaking will depend on several factors including: the distance to the earthquake focus, the earthquake magnitude, the response characteristics of the underlying materials, and the quality and type of construction. Geologic hazards and their relationship to the site are discussed below.

I. Surface Rupture. Surface rupture is expected to occur along preexisting, known active fault traces. However, surface rupture could potentially splay or step from known active faults or rupture along unidentified traces. Based on our review of Rogers (1965), Jennings (1994), Hart and Bryant (1997), and RCLIS (2010), no known faults are currently mapped on or projecting towards the site. In addition, no signs of active surface faulting were observed during our review of non-stereo digitized photographs of the site and site vicinity (Google, 2010; Terra Server 2002). Finally, no signs of active surface fault rupture or secondary seismic effects (lateral spreading, lurching etc.) were identified on-site during our field investigation. Therefore, it is our opinion that risks associated with primary surface ground rupture should be considered "low".

II. Ground Shaking. The site has been subjected to past ground shaking by faults that traverse through the region. Strong seismic shaking from nearby active faults is expected to produce strong seismic shaking during the design life of the proposed project. A probabilistic approach was employed to estimate the peak ground acceleration (a_{max}) that could be experienced at the site. Based on the USGS Probabilistic Hazard Curves (USGS, 2009) the site could be subjected to ground motions on the order of 0.4957g. The peak ground acceleration at the site is judged to have a 475 year return period and a 10 percent chance of exceedence in 50 years.

III. Liquefaction. Liquefaction is the process in which loose, saturated granular soil loses strength as a result of cyclic loading. The strength loss is a result of a decrease in granular sand volume and a positive increase in pore pressures. Generally, liquefaction can occur if all of the following conditions apply: liquefaction-susceptible soil, groundwater within a depth of 50 feet or less, and strong seismic shaking.

According to the County of Riverside, the site is situated within a "Moderate" liquefaction potential zone (RCLIS, 2010). Based on our review of groundwater maps of the site vicinity (>50 feet bgs; Tyley, 1975), risks associated with liquefaction and liquefaction related hazards should be considered negligible.

IV. Tsunamis and Seiches. Because the site is situated at an inland location, and is not immediately adjacent to any impounded bodies of water, risk associated with tsunamis and seiches is considered negligible.

V. Slope Failure, Landsliding, Rock Falls. The project site is located on relatively flat ground and not immediately adjacent to any hillsides. Accordingly, risks associated with slope instability is considered "low".

VI. Expansive Soil. Generally, the site soil consists of interbedded silty sand (SM), sand (SP) and silt (ML). Based on the results of our laboratory testing (EI=0), the materials underlying the site are considered to have a "very low" expansive potential and the risk of structural damage caused by volumetric changes in the subgrade soil is considered "negligible".

VII. Settlement. Settlement resulting from the anticipated foundation loads should be tolerable provided that the recommendations included in this report are considered in foundation design and construction. The estimated ultimate settlement is calculated to be less that approximately one inch when using the recommended bearing values. As a practical matter, differential settlement between footings can be assumed as one-half of the total settlement.

VIII. Subsidence. The site situated within a "Susceptible" subsidence zone (RCLIS, 2010). Land subsidence can occur in valleys where aquifer systems have been subjected to extensive groundwater pumping, such that groundwater pumping exceeds groundwater recharge. Generally, pore water reduction can result in a rearrangement of skeletal grains and could result in elastic (recoverable) or inelastic (unrecoverable) deformation of an aquifer system. Recent published literature indicates that the Upper Coachella Valley region between 1996 and 2005 has been subjected to groundwater withdrawal related subsidence (USGS, 2007).

Although recent investigations have documented limited subsidence within the Rancho Mirage area (USGS, 2007), no fissures or other surficial evidence of subsidence were observed at the subject site. With the exception of isolated tension zones typically manifested on the ground surface as fissures and/or ground cracks, subsidence related to groundwater depletion is generally areal in nature with very little differential settlement over short distances such as across individual buildings.

The Coachella Valley Water District has publically acknowledged regional subsidence throughout the southern portion of the Coachella Valley and has indicated a commitment to groundwater replenishment programs that are intended to limit future subsidence. At this time, subsidence is considered a regional problem requiring regional mitigation not specific to the project vicinity.

Locally, no fissures or other surficial evidence of subsidence were observed at or near the subject site. Although the site specific effects resulting from long term regional subsidence is beyond the scope of our investigation the location of the site suggests that the potential for subsidence is negligible.

IX. Debris Flows. Debris flows are viscous flows consisting of poorly sorted mixtures of sediment and water and are generally initiated on slopes steeper than approximately six horizontal to one vertical (6H:1V)(Boggs, 2001). Based on the relatively flat nature of the site, risks associated with debris flows should be considered "low".

X. Flooding and Erosion. No signs of flooding or erosion were observed during our field investigation. Accordingly, risks associated with flooding and erosion should be considered "low".

CONCLUSIONS

Based on the results of our investigation, it is our professional opinion that the project is feasible from a soil mechanic's standpoint provided the recommendations of this report are incorporated in the design and carried out through construction. The main geotechnical concern in the construction of the proposed project is the presence of potentially compressible artificial fill and native soil near the surface.

The surface soil on the site is considered loose, potentially compressible and not suitable for support of shallow foundations or concrete slabs in its existing condition. Because of the somewhat loose and potentially compressible condition of the near surface soil, remedial grading including overexcavation and recompaction is recommended for the proposed building and foundation areas. We recommend that remedial grading within the proposed building area include overexcavation and recompaction of the foundation bearing soil. Specific recommendations for site preparation are presented in the Earthwork and Grading section of this report.

Caving did occur to varying degrees within each of our exploratory bores and the surface soil may be susceptible to caving within deeper excavations. All excavations should be constructed in accordance with the normal CalOSHA excavation criteria. On the basis of our observations of the materials encountered, we anticipate that the subsoil will conform to that described by CalOSHA as Type B or C. Soil conditions should be verified in the field by a "Competent person" employed by the Contractor.

The following recommendations present more detailed design criteria that have been developed on the basis of our field and laboratory investigation.

EARTHWORK AND GRADING

All earthwork including excavation, backfill and preparation of the subgrade soil should be performed in accordance with the geotechnical recommendations presented in this report and portions of the local regulatory requirements, as applicable. All earthwork should be performed under the observation and testing of a qualified soil engineer. The following geotechnical engineering recommendations for the proposed project are based on observations from the field investigation program, laboratory testing and geotechnical engineering analysis.

a. Stripping. Due to the reported presence of previous structures and improvements on portions of the site, proper clearing will be important. Areas to be graded should be cleared of any existing structures, vegetation, associated root systems, and debris. All areas scheduled to receive fill should be cleared of old fills and any irreducible matter. The strippings should be removed off site, or stockpiled for later use in landscape areas. Voids left by obstructions should be properly backfilled in accordance with the compaction recommendations of this report.

b. Preparation of the Building Areas. In order to achieve firm and uniform bearing conditions, we recommend overexcavation and recompaction throughout the building areas. Near surface soil should be removed to a depth of at least 5 feet below existing grade or 5 feet below the bottom of the footings, whichever is deeper. Remedial grading should extend laterally, a minimum of five feet beyond the building perimeter. The exposed surface should then be scarified, moisture conditioned to within two percent of optimum moisture content, and compacted to at least 90 percent relative compaction. Testing of the native soil within the excavation bottoms should be performed during grading to verify adequacy.

c. Compaction. Soil to be used as engineered fill should be free of organic material, debris, and other deleterious substances, and should not contain irreducible matter greater than three inches in maximum dimension. All fill materials should be placed in thin lifts, not exceeding six inches in their loose state. If import fill is required, the material should be of a low to non-expansive nature and should meet the following criteria:

Plastic Index	Less than 12
Liquid Limit	Less than 35
Percent Soil Passing #200 Sieve	Between 15% and 35%
Maximum Aggregate Size	3 inches

The subgrade and all fills should be compacted with acceptable compaction equipment, to at least 90 percent relative compaction. The bottom of the exposed subgrade should be observed by a representative of Sladden Engineering prior to fill placement. Compaction testing should be performed on all lifts in order to ensure proper placement of the fill materials. Table 2 provides a summary of the excavation and compaction recommendations.

Table 2
SUMMARY OF RECOMMENDATIONS

*Remedial Grading	Excavation and recompaction within the building envelope and extending laterally for 5 feet beyond the building limits and to a minimum of 5 feet below existing grade or 5 feet below the bottom of the footings, whichever is deeper.
Native / Import Engineered Fill	Place in thin lifts not exceeding 6 inches in the loose state, compact to a minimum of 90 percent relative compaction within 2 percent of the optimum moisture content.
Driveway and Flatwork	Compact the top 12 inches to at least 95 percent compaction within 2 percent of optimum moisture content.

*Actual depth may vary and should be determined by a representative of Sladden Engineering in the field during construction.

d. Shrinkage and Subsidence. Volumetric shrinkage of the material that is excavated and replaced as controlled compacted fill should be anticipated. We estimate that this shrinkage could vary from 15 to 20 percent. Subsidence of the surfaces that are scarified and compacted should be between 1 and 3 tenths of a foot. This will vary depending upon the type of equipment used, the moisture content of the soil at the time of grading and the actual degree of compaction attained.

FOUNDATION: CONVENTIONAL SPREAD FOOTINGS

Load bearing walls may be supported on continuous spread footings and interior columns may be supported on isolated pad footings. All footings should be founded upon properly engineered fill and should have a minimum embedment depth of 12 inches measured from the lowest adjacent finished grade. Continuous and isolated footings should have a minimum width of 12 inches and 24 inches respectively. Continuous and isolated footings placed on such materials may be designed using an allowable (net) bearing pressures of 1800 and 2000 pounds per square foot (psf), respectively. Allowable increases of 250 psf for each additional 1 foot in width and 250 psf for each additional 6 inches in depth may be utilized, if desired. The maximum allowable bearing pressure should be 2,500 psf. The allowable bearing pressure applies to combined dead and sustained live loads.

The allowable bearing pressure may be increased by one-third when considering transient live loads, including seismic and wind forces. All footings should be reinforced in accordance with the project structural engineer's recommendations.

Based on the allowable bearing pressures recommended above, total settlement of the shallow footings are anticipated to be less than one-inch, provided foundation preparations conform to the recommendations described in this report. Differential settlement is anticipated to be less than one half the total settlement for similarly loaded footings spaced up to approximately 40 feet apart.

Lateral load resistance for the spread footings will be developed by passive soil pressure against the sides of the footings below grade and by friction acting at the base of the concrete footings bearing on compacted fill. An allowable passive pressure of 300 psf per foot of depth may be used for design purposes. An allowable coefficient of friction 0.45 may be used for dead and sustained live loads to compute the frictional resistance of the footing placed directly on compacted fill. Under seismic and wind loading conditions, the passive pressure and frictional resistance may be increased by one-third.

All footing excavations should be observed by a representative of the project geotechnical consultant to verify adequate embedment depths prior to placement of forms, steel reinforcement or concrete. The excavations should be trimmed neat, level and square. All loose, disturbed, sloughed or moisture-softened soils and/or any construction debris should be removed prior to concrete placement. Excavated soil generated from footing and/or utility trenches should not be stockpiled within the building envelope or in areas of exterior concrete flatwork.

SLABS-ON-GRADE

In order to reduce the risk of cracking and settlement, concrete slabs-on-grade must be placed on properly compacted fill as outlined in the previous sections. The slab subgrades should remain near optimum moisture content and should not be permitted to dry. Prior to concrete pour, all slab subgrades should be firm and unyielding. Disturbed soils should be removed and then replaced and compacted to a minimum of 90 percent relative compaction.

We recommend a minimum slab thickness of 4.0 inches. Slab thickness and reinforcement should be determined by the structural engineer. All slab reinforcement should be supported on concrete chairs to ensure that reinforcement is placed at slab mid-height.

Slabs with moisture sensitive surfaces should be underlain with a moisture vapor retarder consisting of a polyvinyl chloride membrane such as 10-mil Visqueen, or equivalent. All laps within the membrane should be sealed and at least 2 inches of clean sand should be placed over the membrane to prevent damage and to promote uniform curing of the concrete. To reduce the potential for punctures, the membrane should be placed on a pad surface that has been graded smooth without any sharp protrusions. If a smooth surface can not be achieved by grading, consideration should be given to placing a 1-inch thick leveling course of sand across the pad surface prior to placement of the membrane.

SOLUBLE SULFATES

Soluble sulfate concentrations were determined to be "negligible" (less that 1,000 ppm) based upon our laboratory testing. Based upon our preliminary testing the use of Type V and/or sulfate resistant mix design should not be necessary. The soluble sulfate content of the surface soil should be reevaluated after grading and appropriate concrete mix designs should be established based upon post-grading test results.

UTILITY TRENCH BACKFILL

All utility trench backfill should be compacted to a minimum relative compaction of 90 percent. Trench backfill materials should be placed in lifts no greater than six inches in their loose state, moisture conditioned (or air-dried) as necessary to achieve near optimum moisture conditions, and then mechanically compacted in place to a minimum relative compaction of 90 percent. A representative of the project soil engineer should test the backfill to verify adequate compaction.

EXTERIOR CONCRETE FLATWORK

To minimize cracking of concrete flatwork, the subgrade soil below concrete flatwork areas should be compacted to a minimum relative compaction of 90 percent. A representative of the project geotechnical consultant should observe and verify the density and moisture content of the soil prior to concrete placement.

DRAINAGE

All final grades should be provided with positive gradients away from foundations to provide rapid removal of surface water runoff to an adequate discharge point. No water should be allowed to be pond on or immediately adjacent to foundation elements. In order to reduce water infiltration into the subgrade soil, surface water should be directed away from building foundations to an adequate discharge point. Subgrade drainage should be evaluated upon completion of the precise grading plans and in the field during grading. Drainage should also be diverted away from the descending slope that faces the eastern side of the lot.

LIMITATIONS

The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between the exploratory boring locations and extrapolation of these conditions throughout the proposed building area. Should conditions encountered during grading appear different than those indicated in this report, this office should be notified.

The use of this report by other parties or for other projects is not authorized. The recommendations of this report are contingent upon monitoring of the grading operation by a representative of Sladden Engineering. All recommendations are considered to be tentative pending our review of the grading operation and additional testing, if indicated. If others are employed to perform any soil testing, this office should be notified prior to such testing in order to coordinate any required site visits by our representative and to assure indemnification of Sladden Engineering.

We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

ADDITIONAL SERVICES

Once completed, final project plans and specifications should be reviewed by use prior to construction to confirm that the full intent of the recommendations presented herein have been applied to design and construction. Following review of plans and specifications, observation should be performed by the Soil Engineer during construction to document that foundation elements are founded on/or penetrate into the recommended soil, and that suitable backfill soil is placed upon competent materials and properly compacted at the recommended moisture content.

Tests and observations should be performed during grading by the Soil Engineer or his representative in order to verify that the grading is being performed in accordance with the project specifications. Field density testing shall be performed in accordance with acceptable ASTM test methods. The minimum acceptable degree of compaction should be 90 percent for subgrade soils and 95 percent for Class II aggregate base as obtained by the ASTM D1557-91 test method. Where testing indicates insufficient density, additional compactive effort shall be applied until retesting indicates satisfactory compaction.

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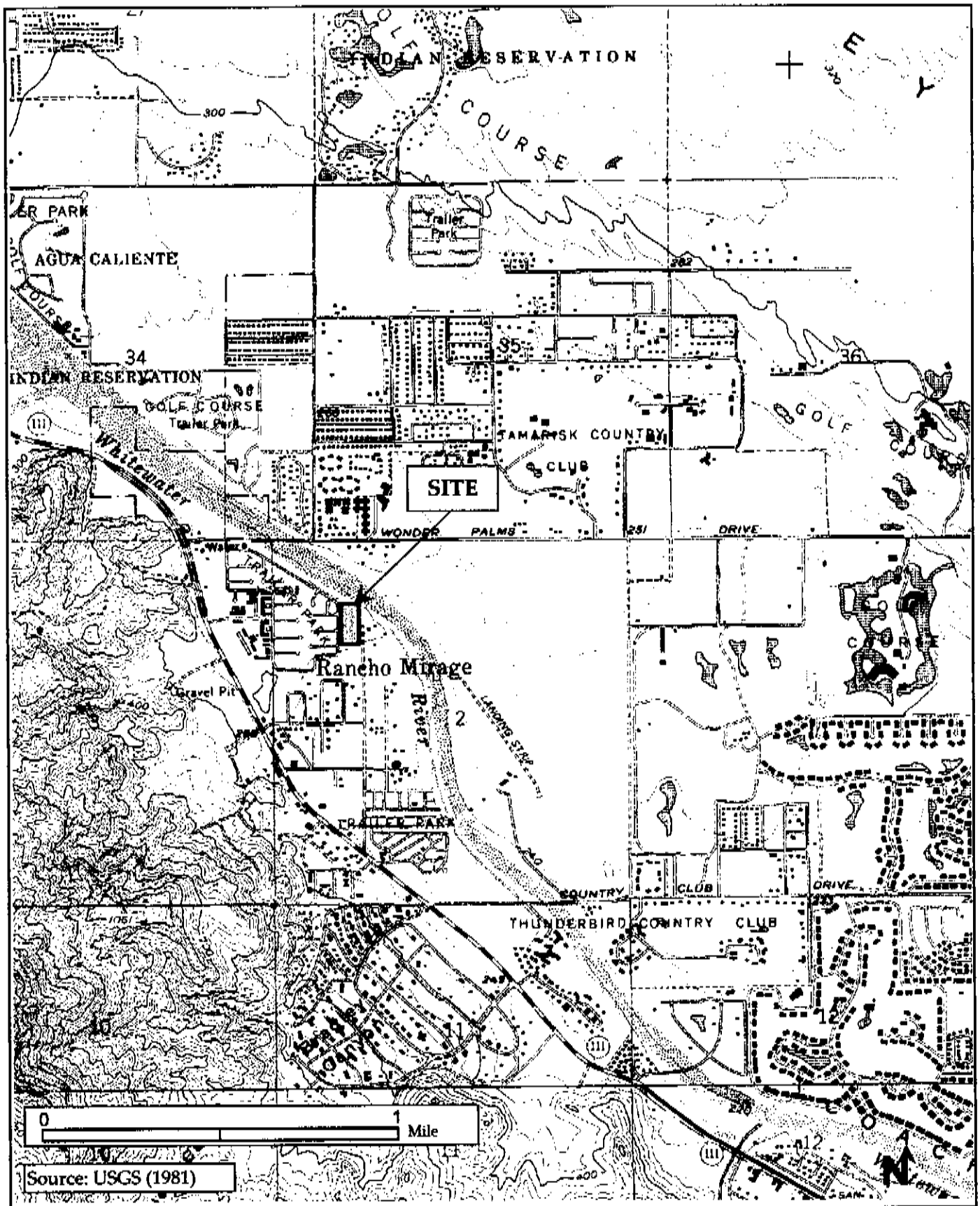
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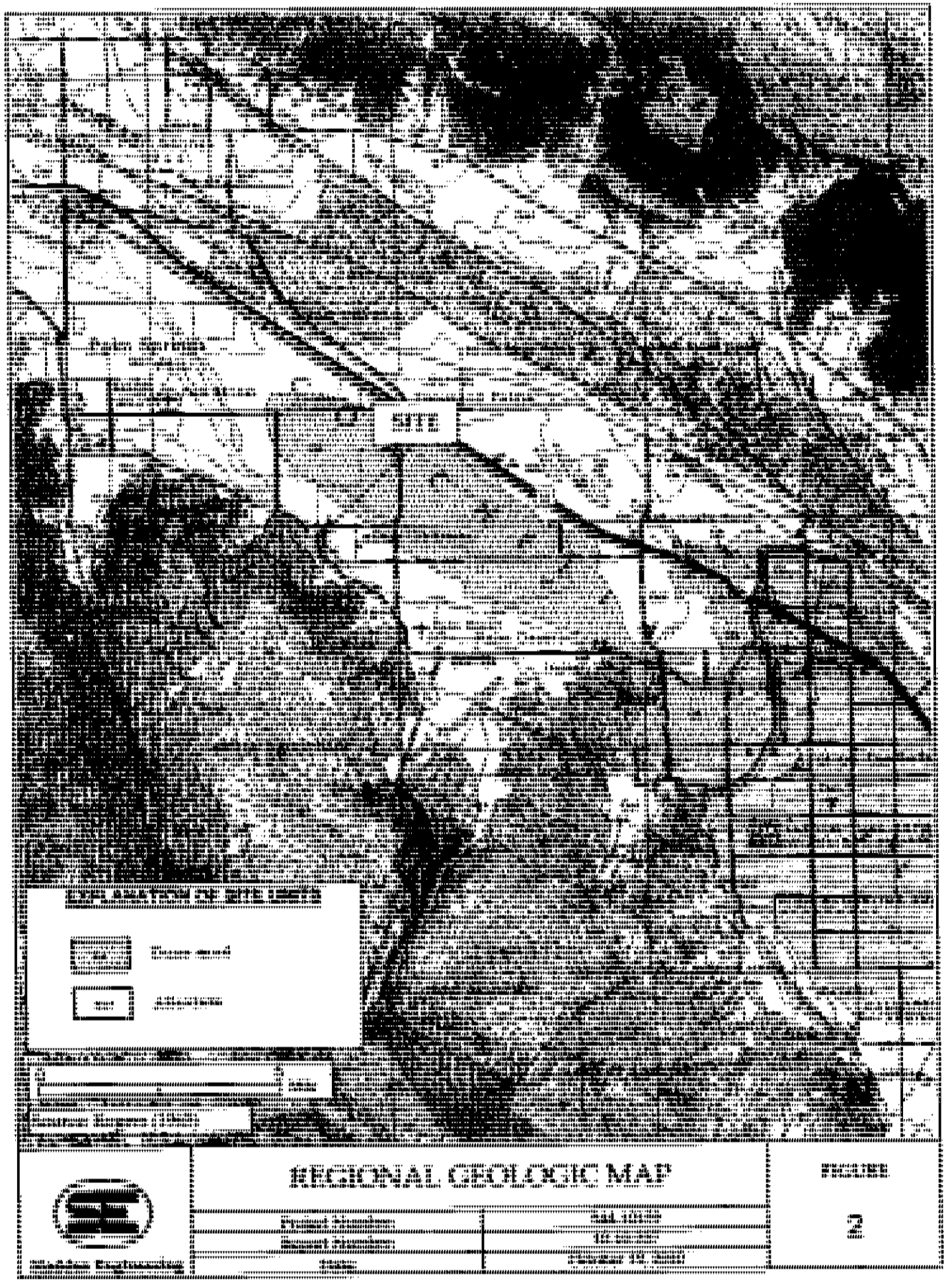
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FIGURES

SITE LOCATION MAP
REGIONAL GEOLOGIC MAP
BOREHOLE LOCATION PLAN

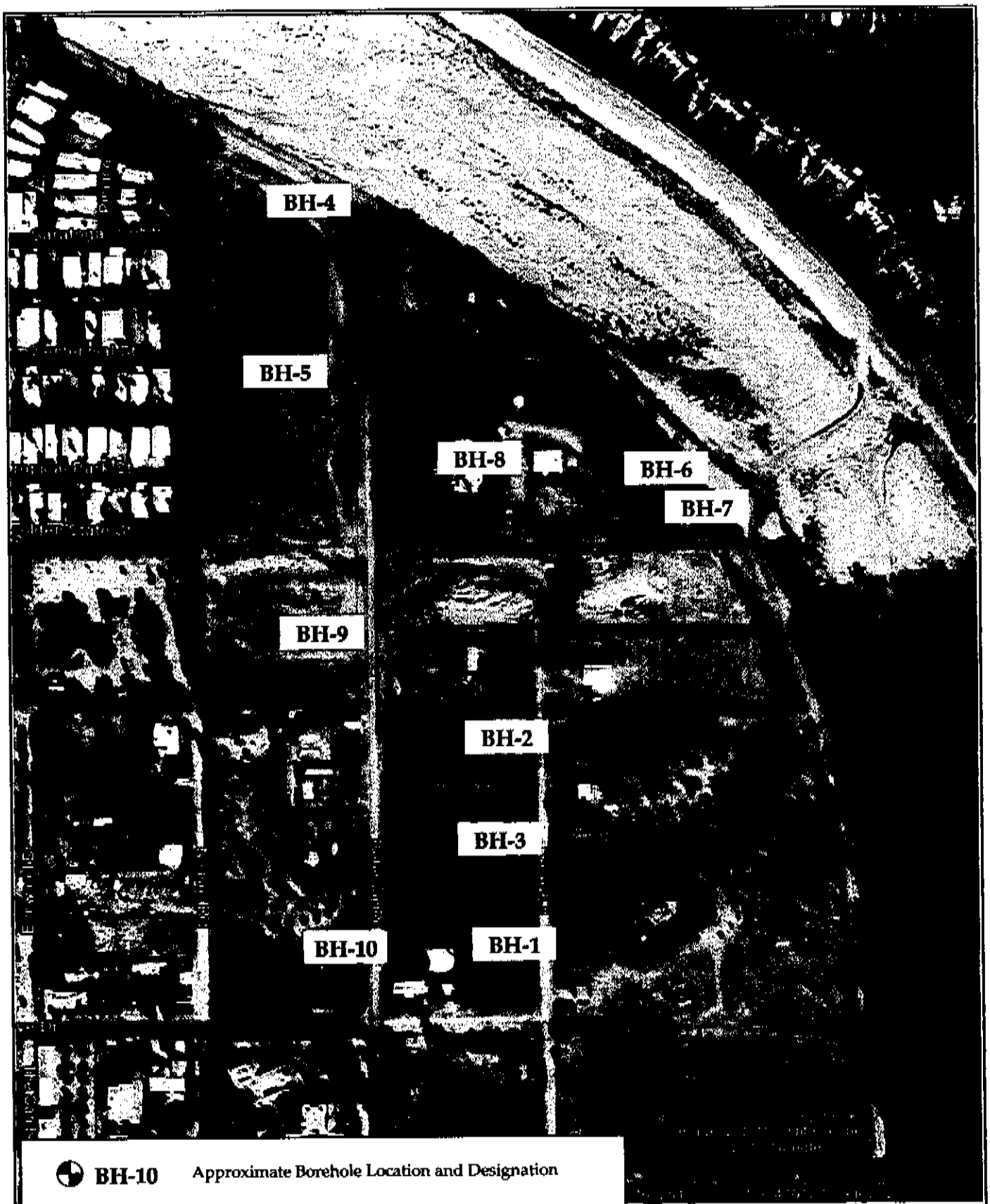


Sladden Engineering	SITE LOCATION MAP	FIGURE 1
	Project Number: 544-10159	
	Report Number: 10-10-237	
	Date: October 19, 2010	



REGIONAL GEOLOGIC MAP

FIGURE 2



Sladden Engineering

BOREHOLE LOCATION PHOTOGRAPH

FIGURE 3

Project Number:	544-10159
Report Number:	10-10-237
Date:	October 19, 2010

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

For our field investigation ten (10) exploratory borings were excavated on September 29, 2010 utilizing a truck mounted hollow stem auger rig (Mobile B-61). Continuous logs of the materials encountered were made by a representative of Sladden Engineering. Materials encountered in the boreholes were classified in accordance with the Unified Soil Classification System which is presented in this appendix.

Representative undisturbed samples were obtained within our borings by driving a thin-walled steel penetration sampler (California split spoon sampler) or a Standard Penetration Test (SPT) sampler with a 140 pound automatic-trip hammer dropping approximately 30 inches (ASTM D1586). The number of blows required to drive the samplers 18 inches was recorded in 6-inch increments and blowcounts are indicated on the boring logs.

The California samplers are 3.0 inches in diameter, carrying brass sample rings having inner diameters of 2.5 inches. The standard penetration samplers are 2.0 inches in diameter with an inner diameter of 1.5 inches. Undisturbed samples were removed from the sampler and placed in moisture sealed containers in order to preserve the natural soil moisture content. Bulk samples were obtained from the excavation spoils and samples were then transported to our laboratory for further observations and testing.

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	9/29/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); very pale brown, dry, fine-grained (Fill/Disturbed).
	4/9/11			3.5	0.5	100.8	6		Sand (SP); very pale brown, dry, medium dense, fine-grained (Alluvium).
	4/5/5			5.0	0.9		10		Sand (SP); very pale brown, dry, loose, fine-grained (Alluvium).
	5/6/6			4.6	0.9		16		Sand (SP); very pale brown, dry, medium dense, fine-grained (Alluvium).
	5/7/7			10.7	1.1		20		Sand (SP); very pale brown, dry, medium dense, fine-grained (Alluvium).
							22		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	9/29/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Silty Sand (SM); very pale brown, dry, fine-grained (Fill/Disturbed).
							2		
							4		
■	2/4/4			2.8	1.7		6		Sand (SP); very pale brown, dry, loose, fine-grained (Alluvium).
							8		
■	2/3/3			28.3	3.5		10		Sand (SP); very pale brown, dry, loose, fine-grained (Alluvium).
							12		
							14		
■	2/3/4			68.6	2.1		16		Sandy Silt (ML); very pale brown, dry, medium stiff, low plasticity (Alluvium).
							18		
■	3/4/5			19.0	1.5		20		Silty Sand (SM); very pale brown, dry, loose, fine-grained (Alluvium).
							22		
							24		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	9/29/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-3

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Silty Sand (SM); very pale yellow, dry, fine-grained (Fill/Disturbed).
							2		
							4		
■	2/2/2			67.0	4.0		6		Sandy Silt (ML); very pale yellow, moist, soft, low plasticity (Alluvium).
							8		
■	2/2/4			63.0	5.5		10		Sandy Silt (ML); very pale yellow, moist, medium stiff, low plasticity (Alluvium).
							12		
							14		
■	2/3/4			46.4	5.0		16		Silty Sand (SM); very pale yellow, moist, loose, fine-grained (Alluvium).
							18		
■	2/3/3			52.5	3.2		20		Sandy Silt (ML); very pale yellow, moist, medium stiff, low plasticity (Alluvium).
							22		
							24		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	9/30/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
		1	0				2		Silty Sand (SM); pale yellow, dry, fine-grained (Fill/Disturbed).
	2/3/3			51.7	1.1	89.2	6		Sandy Silt (ML); pale yellow, soft, dry, low plasticity (Alluvium).
	4/6/6			34.0	2.2		10		Silty Sand (SM); pale yellow, dry, medium dense, fine-grained (Alluvium).
	5/7/10			6.3	0.6	99.9	16		Sand (SP); pale yellow, dry, medium dense, fine-grained (Alluvium).
	6/7/8			5.9	0.8		20		Sand (SP); pale yellow, dry, medium dense, fine-grained (Alluvium).
	13/13/14						26		No Recovery
	6/10/11			4.7	0.8		30		Sand (SP); yellowish brown, dry, medium dense, fine-grained (Alluvium).
	6/8/9			16.9	1.5	95.1	36		Silty Sand (SM); yellowish brown, dry, medium dense, fine-grained (Alluvium).
	8/11/12			5.5	1.1		40		Sand with gravel (SP); yellowish brown, dry, medium dense, fine- to coarse-grained (Alluvium).
	9/13/11			34.2	3.2	103.9	46		Silty Sand (SM); yellowish brown, dry, medium dense, fine-grained (Alluvium).
	6/9/11			5.8	1.4		50		Sand (SP); yellowish brown, dry, medium dense, fine-grained (Alluvium)

Completion Notes:
Terminated at ~51.5 Feet bgs.
No Bedrock Encountered.
No Groundwater or Seepage Encountered.

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-5

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							0		Silty Sand (SM); pale yellow, dry, fine-grained (Fill/Disturbed).
■	5/6/5			54.7	1.2		5		Sandy Silt (ML); very pale brown, dry, stiff, low plasticity (Alluvium).
■	6/9/9			6.5	0.4		10		Sand (SP); very pale brown, dry, medium dense, fine-grained (Alluvium).
■	5/7/7			33.7	1.6		15		Silty Sand (SM); very pale brown to yellowish brown, dry, medium dense, fine-grained (Alluvium).
■	9/12/15			6.4	0.5		20		Sand (SP); yellowish brown, dry, medium dense, fine-grained (Alluvium).
							25		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-6

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); pale yellow, dry, fine-grained (Fill/Disturbed).
	3/2/2			54.1	3.3		6		Sandy Silt (ML); very pale brown, dry, soft, low plasticity (Alluvium).
	4/5/6			7.5	1.9		10		Sand (SP); yellowish brown, dry, medium dense, fine-grained (Alluvium).
	4/6/6			5.8	1.6		16		Sand (SP); yellowish brown, dry, medium dense, fine-grained (Alluvium).
	5/6/5			35.2	5.1		20		Silty Sand (SM); very pale brown to yellowish brown, dry, medium dense, fine-grained (Alluvium)
							22		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-7

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); pale yellow, dry, fine-grained (Fill/Disturbed).
	1/1/2			54.3	4.0		6		Sandy Silt (ML); very pale brown, dry, soft, low plasticity, thinly laminated (Alluvium).
	2/4/5			25.4	3.6		10		Silty Sand (SM); very pale brown, dry, loose, fine-grained (Alluvium).
	4/4/4			19.6	3.5		16		Silty Sand (SM); very pale brown, dry, loose, fine-grained (Alluvium).
	3/5/5			13.6	2.8		20		Silty Sand (SM); very pale brown, dry, loose, fine-grained (Alluvium)
							24		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-8

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); pale yellow, dry, fine-grained with surface gravel (Fill/Disturbed).
	3/3/4			68.2	4.6		6		Sandy Silt (ML); very pale brown, dry, medium stiff, low plasticity (Alluvium).
	5/5/7			25.4	1.2		10		Silty Sand (SM); very pale brown, dry, medium dense, fine-grained (Alluvium).
	5/6/7			8.5	1.3		16		Sand (SP); very pale brown, dry, medium dense, fine-grained (Alluvium).
	3/3/3			50.5	8.0		20		Sandy Silt (ML); yellowish brown, moist, medium stiff, low plasticity (Alluvium).
							22		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-9

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); pale yellow, dry, fine- to coarse- grained with surface gravel (Fill/Disturbed).
	2/2/2			34.3	1.4		6		Silty Sand (SM); very pale brown, dry, very loose, fine-grained (Fill).
	2/3/3			21.7	1.4		10		Silty Sand (SM); very pale brown, dry, loose, fine-grained (Alluvium).
	3/4/4			57.7	2.2		16		Sandy Silt (ML); very pale brown, dry, medium stiff, low plasticity (Alluvium).
	5/5/4			7.1	0.9		20		Sand (SP); pale brown, dry, loose, fine-grained (Alluvium).
							22		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							24		
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/4/2010
Elevation:	240 Feet (AMSL)	Boring No:	BH-10

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2		Silty Sand (SM); pale yellowish brown, dry, fine-grained (Fill/Disturbed).
■	3/5/7			3.5	0.4	97.0	6		Sand (SP); pale yellowish brown, dry, loose, fine-grained (Alluvium).
☒	4/6/8						10		No Recovery
■	4/6/9			8.7	0.7	94.9	16		Sand (SP); pale yellowish brown, dry, loose, fine-grained (Alluvium).
■	3/4/5			10.4	0.7	90.9	20		Sand (SP); pale yellowish brown, dry, loose, fine-grained (Alluvium).
							22		
							24		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED RESIDENTIAL SUBDIVISION
PETERSON ROAD - 20 ACRES

Project No: 544-10159
Report No: 10-10-237

APPENDIX B

LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

Representative bulk and relatively undisturbed soil samples were obtained in the field and returned to our laboratory for additional observations and testing. Laboratory testing was generally performed in two phases. The first phase consisted of testing in order to determine the compaction of the existing natural soil and the general engineering classifications of the soils underlying the site. This testing was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics testing. This testing including consolidation, shear strength and expansion testing was performed in order to provide a means of developing specific design recommendations based on the mechanical properties of the soil.

CLASSIFICATION AND COMPACTION TESTING

Unit Weight and Moisture Content Determinations: Each undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to testing in order to determine its moisture content. This was used in order to determine the dry density of the soil in its natural condition. The results of this testing are shown on the Boring Logs.

Maximum Density-Optimum Moisture Determinations: Representative soil types were selected for maximum density determinations. This testing was performed in accordance with the ASTM Standard D1557-91, Test Method A. The results of this testing are presented graphically in this appendix. The maximum densities are compared to the field densities of the soil in order to determine the existing relative compaction to the soil.

Classification Testing: Soil samples were selected for classification testing. This testing consists of mechanical grain size analyses. This provides information for developing classifications for the soil in accordance with the Unified Soil Classification System which is presented in the preceding appendix. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this testing is very useful in detecting variations in the soil and in selecting samples for further testing.

SOIL MECHANIC'S TESTING

Expansion Testing: One (1) bulk sample was selected for Expansion testing. Expansion testing was performed in accordance with the UBC Standard 18-2. This testing consists of remolding 4-inch diameter by 1-inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete.

Direct Shear Tests: One (1) bulk sample was selected for Direct Shear Tests. This test measures the shear strength of the soil under various normal pressures and is used to develop parameters for foundation design and lateral design. Tests were performed using a recompacted test specimen that was saturated prior to tests. Tests were performed using a strain controlled test apparatus with normal pressures ranging from 800 to 2300 pounds per square foot.

Consolidation Test: One (1) relatively undisturbed sample was selected for consolidation testing. For this test, a one-inch thick test specimen was subjected to vertical loads varying from 575 psf to 11520 psf applied progressively. The consolidation at each load increment was recorded prior to placement of each subsequent load. The specimens were saturated at 575 psf or 720 psf load increment.

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Maximum Density/Optimum Moisture

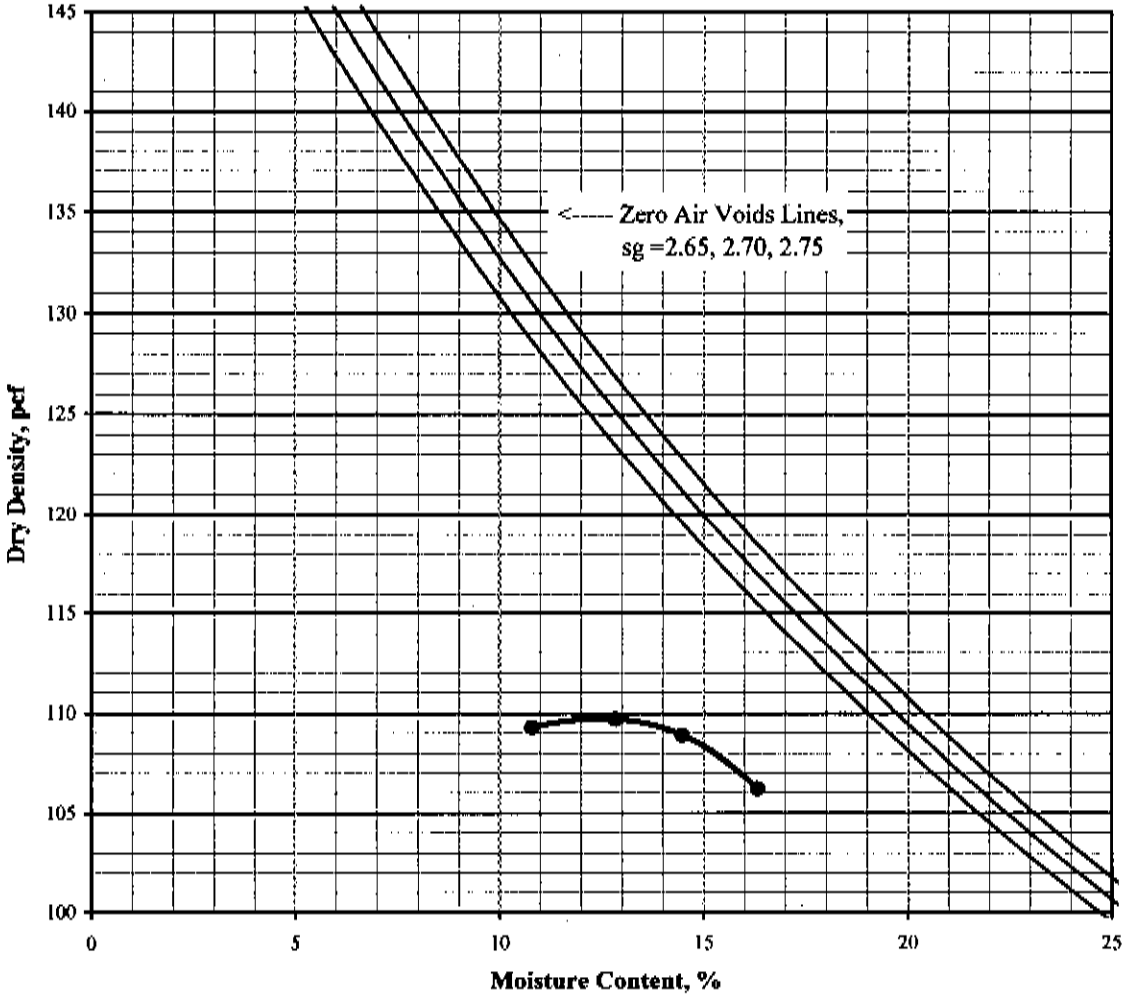
ASTM D698/D1557

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample Location: BH-4 Bulk 1 @ 0-5'
Description: Brown Silty Sand (SM)

ASTM D-1557 A
Rammer Type: Machine

Maximum Density: 110 pcf
Optimum Moisture: 13%

Sieve Size	% Retained
3/4"	
3/8"	
#4	



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Expansion Index

ASTM D 4829

Job Number: 544-10159
Job Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-4 Bulk 1 @ 0-5'
Soil Description: Brown Silty Sand (SM)

Wt of Soil + Ring:	548.9
Weight of Ring:	191.4
Wt of Wet Soil:	357.5
Percent Moisture:	12.0%

Wet Density, pcf:	114.0
Dry Denstiy, pcf:	101.8

% Saturation:	49.5

Expansion **Rack # 4**

Date/Time	10/11/2010	2:25 PM
Initial Reading	0.0000	
Final Reading	0.0002	

Expansion Index **0**

(Final - Initial) x 1000

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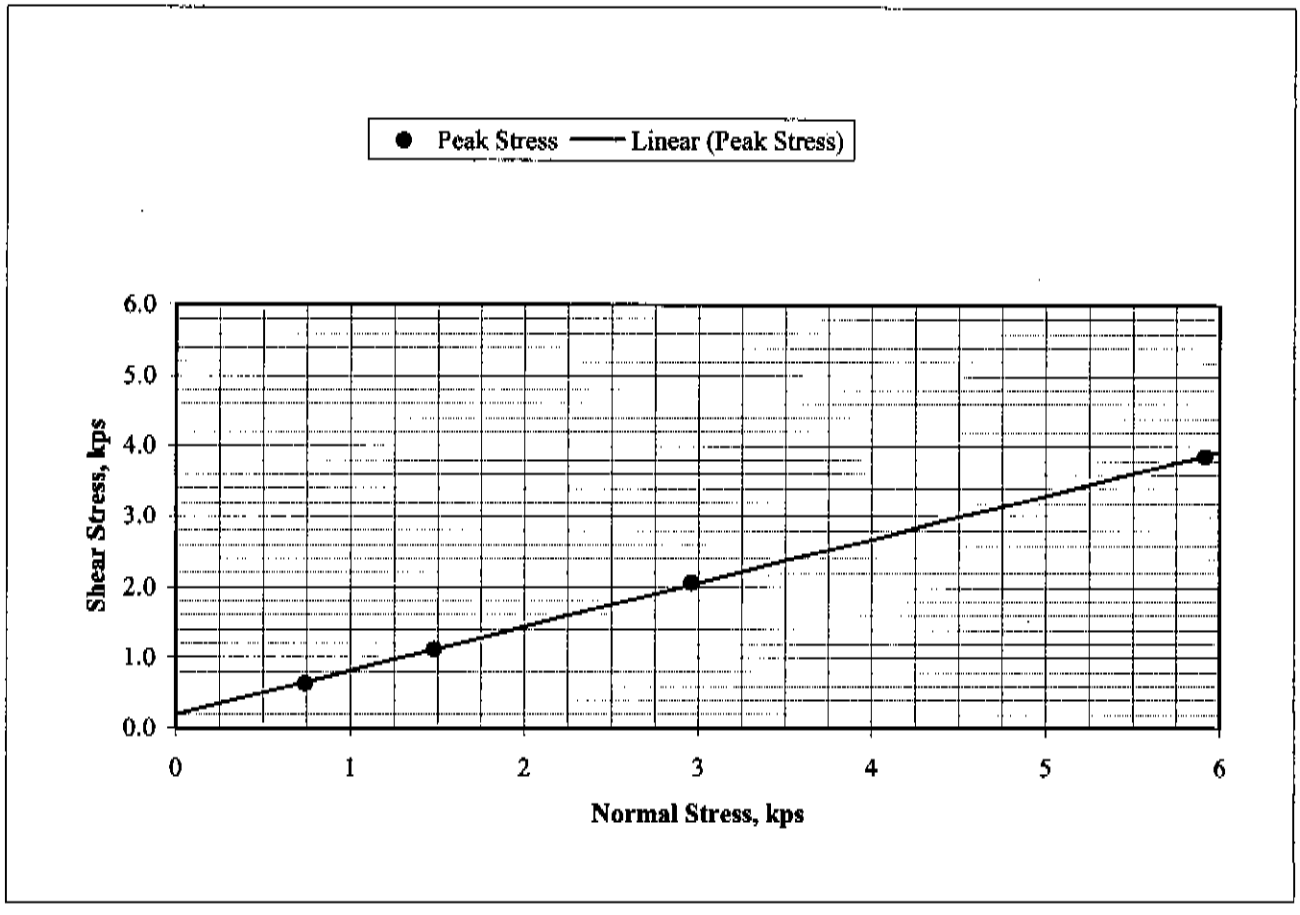
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Direct Shear ASTM D 3080-04
(modified for unconsolidated condition)

Job Number: 544-10159
Job Name Peterson Road Subdivision
Lab ID No. LN6-10381
Sample ID BH-4 Bulk 1 @ 0-5'
Classification Brown Silty Sand (SM)
Sample Type Remolded @ 90% of Maximum Density

Initial Dry Density: 98.7 pcf
Initial Mosture Content: 13.2 %
Peak Friction Angle (Ø): 32°
Cohesion (c): 200 psf

Test Results	1	2	3	4	Average
Moisture Content, %	21.2	21.2	21.2	21.2	21.2
Saturation, %	81.1	81.1	81.1	81.1	81.1
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.636	1.118	2.061	3.860	



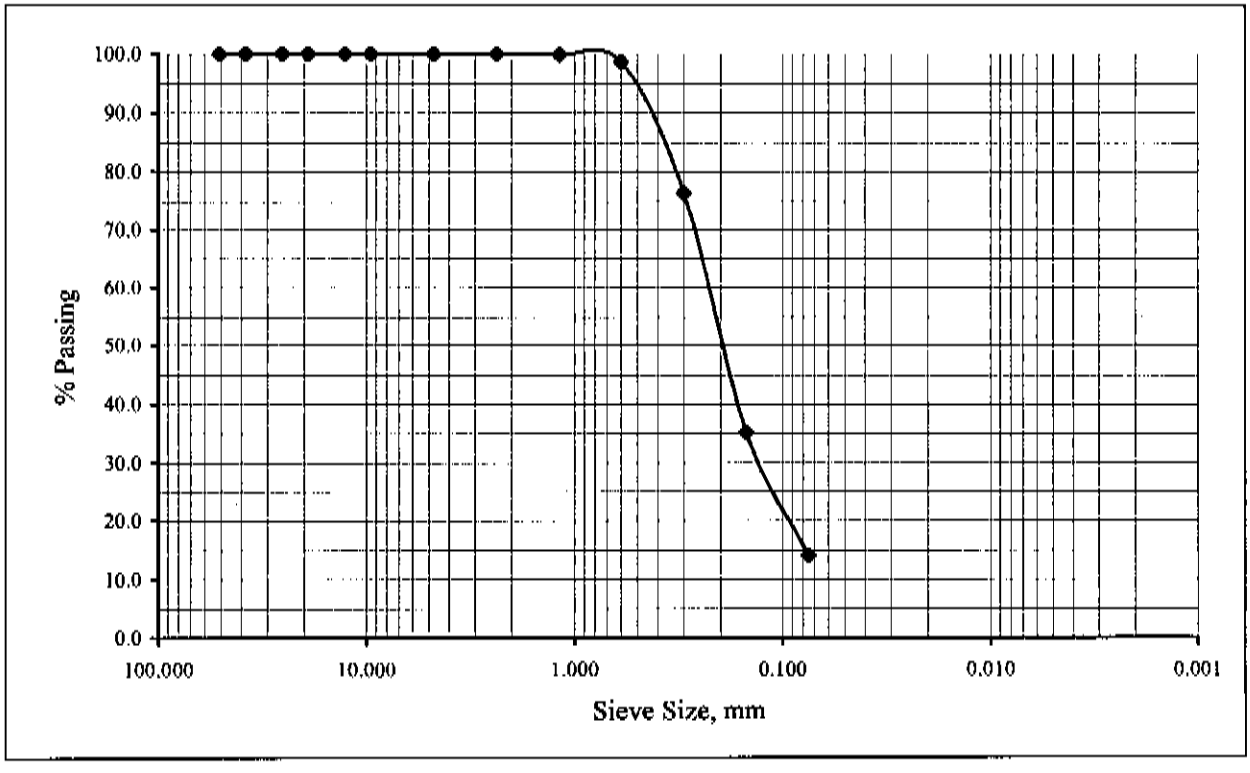
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-4 Bulk 1 @ 0-5' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	100.0
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	99.9
#30	0.60	98.6
#50	0.30	76.4
#100	0.15	35.1
#200	0.075	14.0



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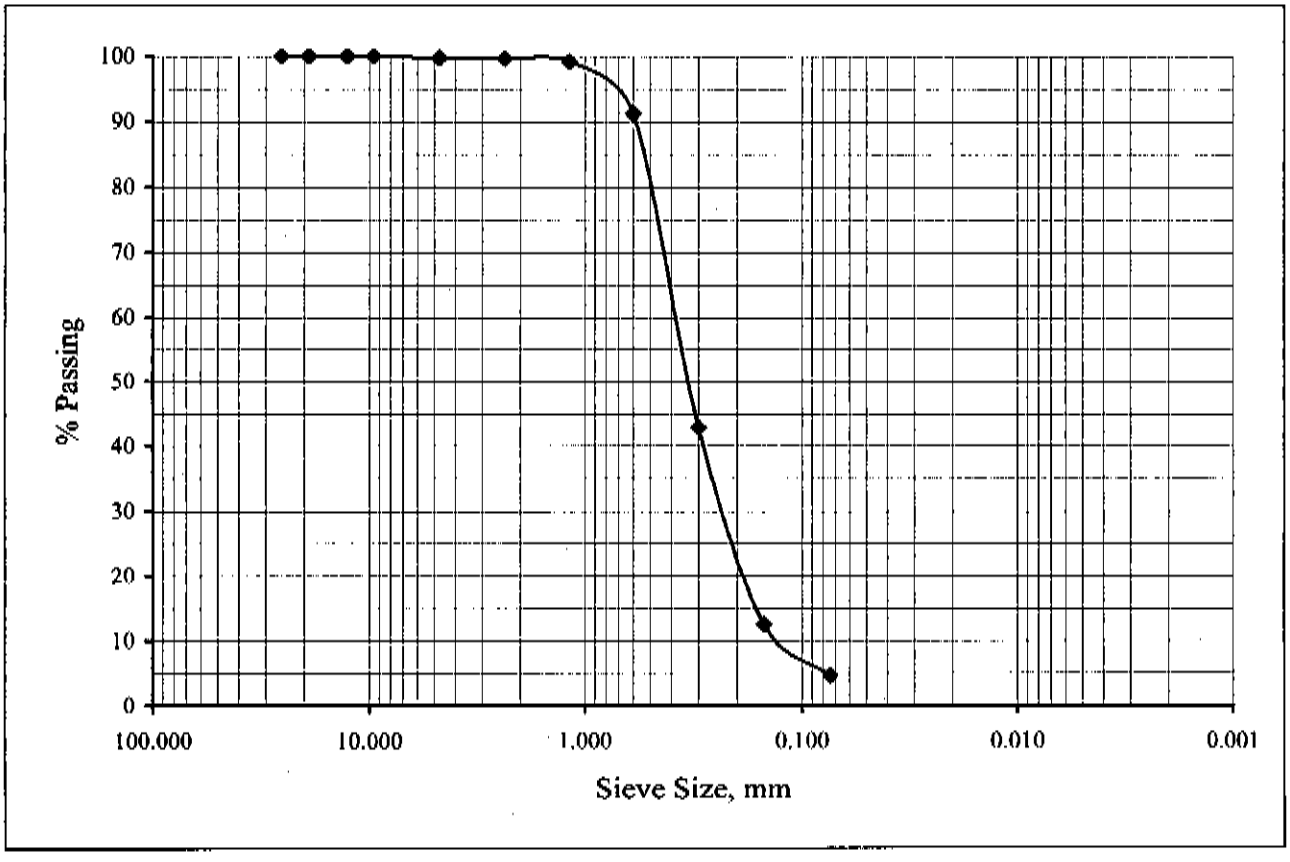
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-1 S-3 @ 15' Soil Classification: SP

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	99.8
#8	2.36	99.6
#16	1.18	99.2
#30	0.60	91.2
#50	0.30	42.9
#100	0.15	12.5
#200	0.074	4.6



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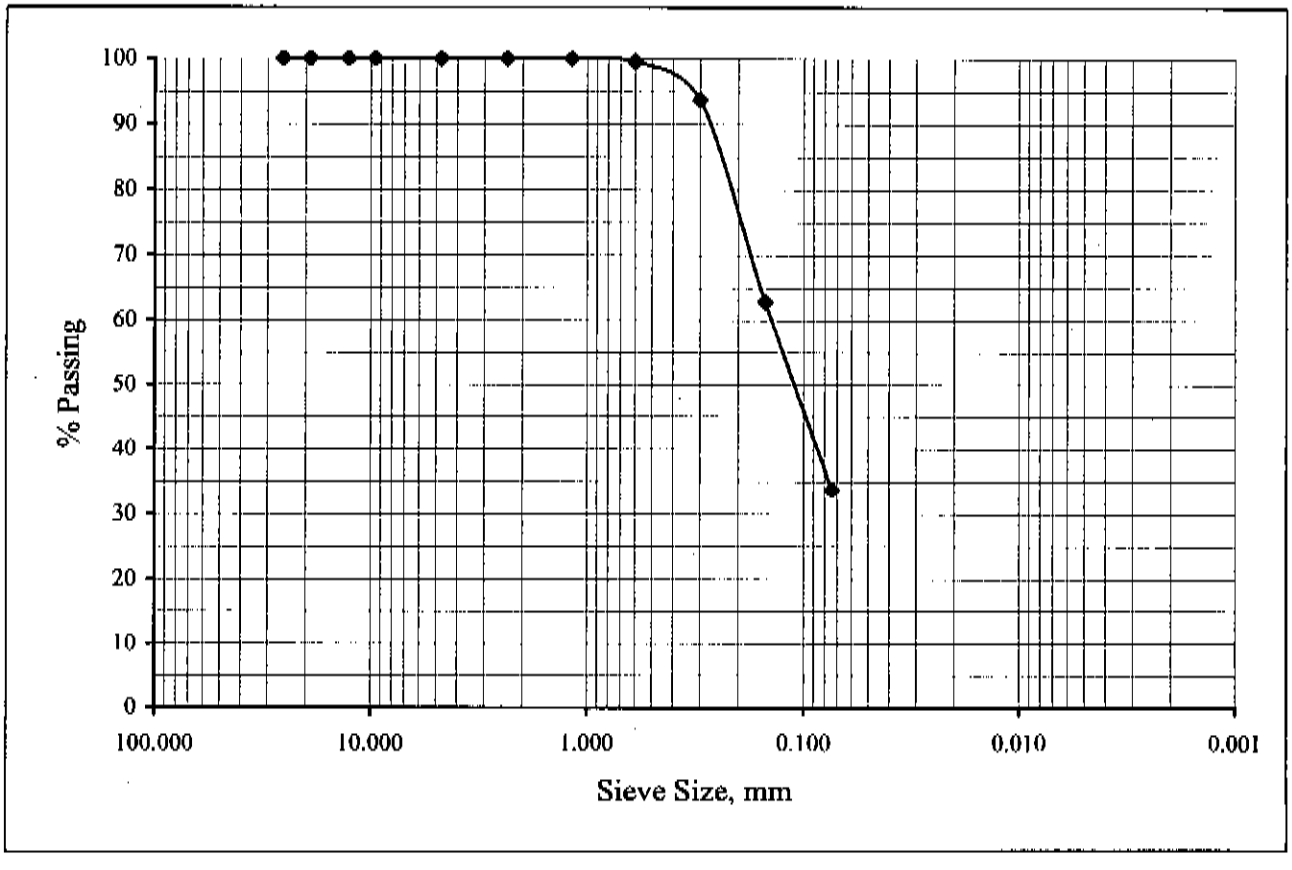
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-5 S-3 @ 15' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
I/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	100.0
#30	0.60	99.6
#50	0.30	93.7
#100	0.15	62.9
#200	0.074	33.7



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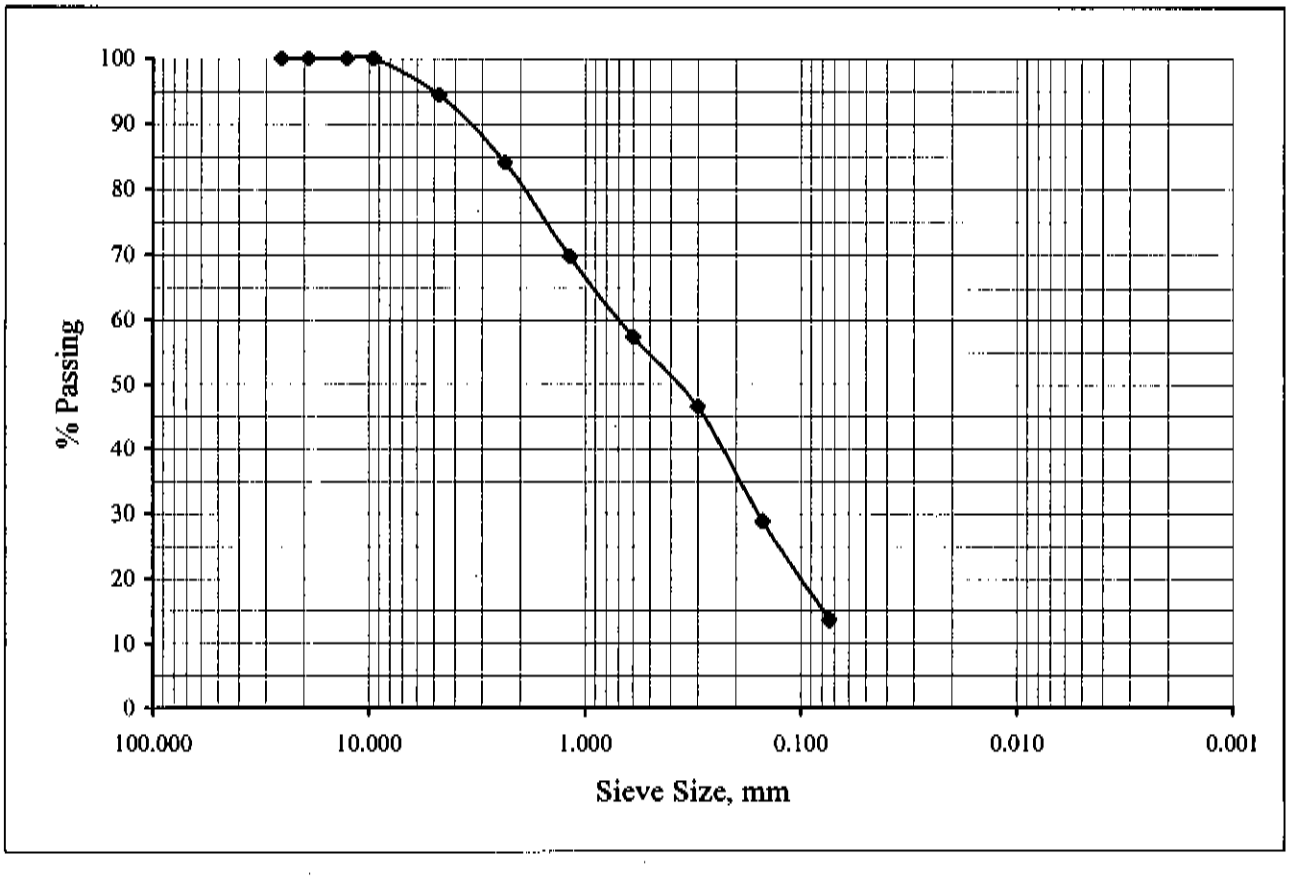
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-7 S-4 @ 20' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	94.5
#8	2.36	84.2
#16	1.18	69.8
#30	0.60	57.4
#50	0.30	46.5
#100	0.15	28.8
#200	0.074	13.6



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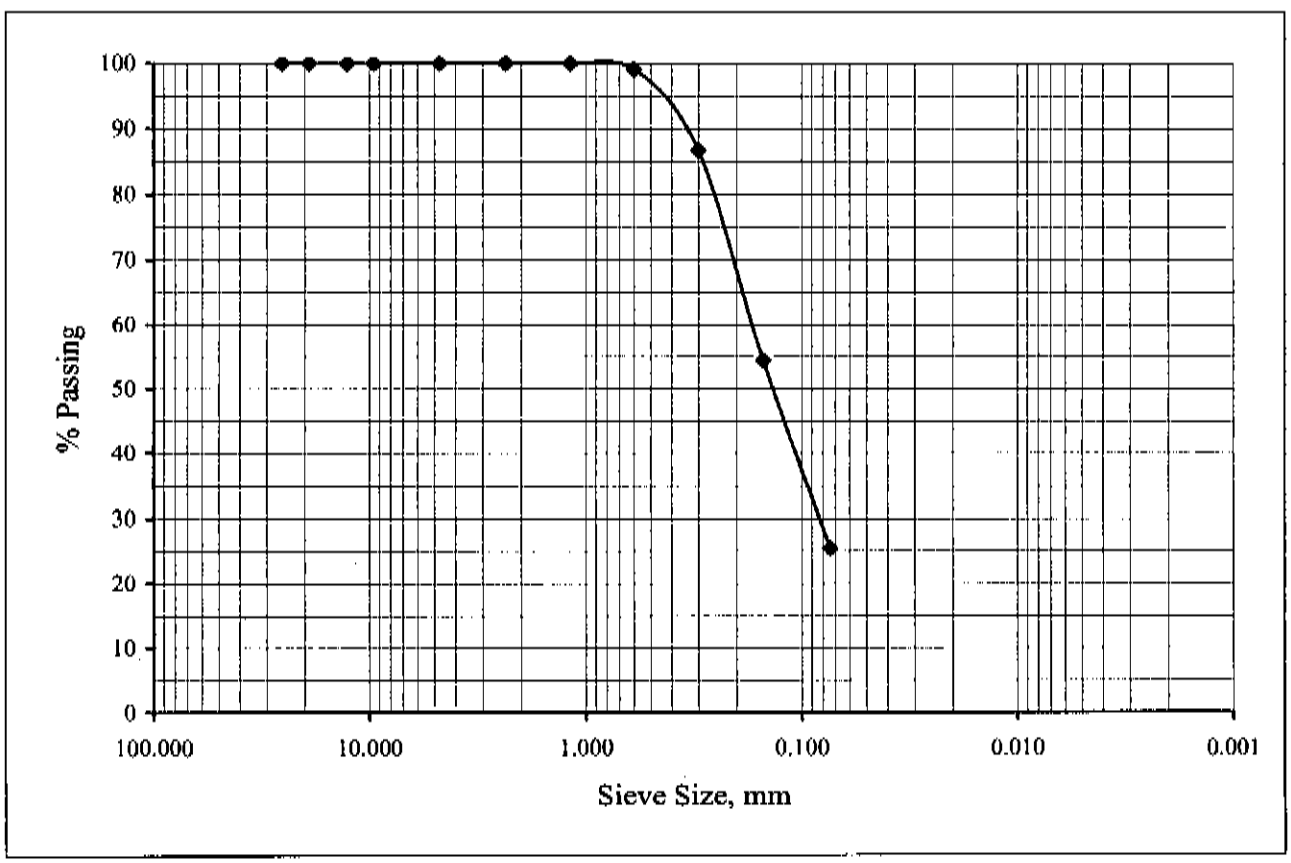
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-8 S-2 @ 10' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	99.9
#30	0.60	99.1
#50	0.30	86.6
#100	0.15	54.3
#200	0.074	25.4



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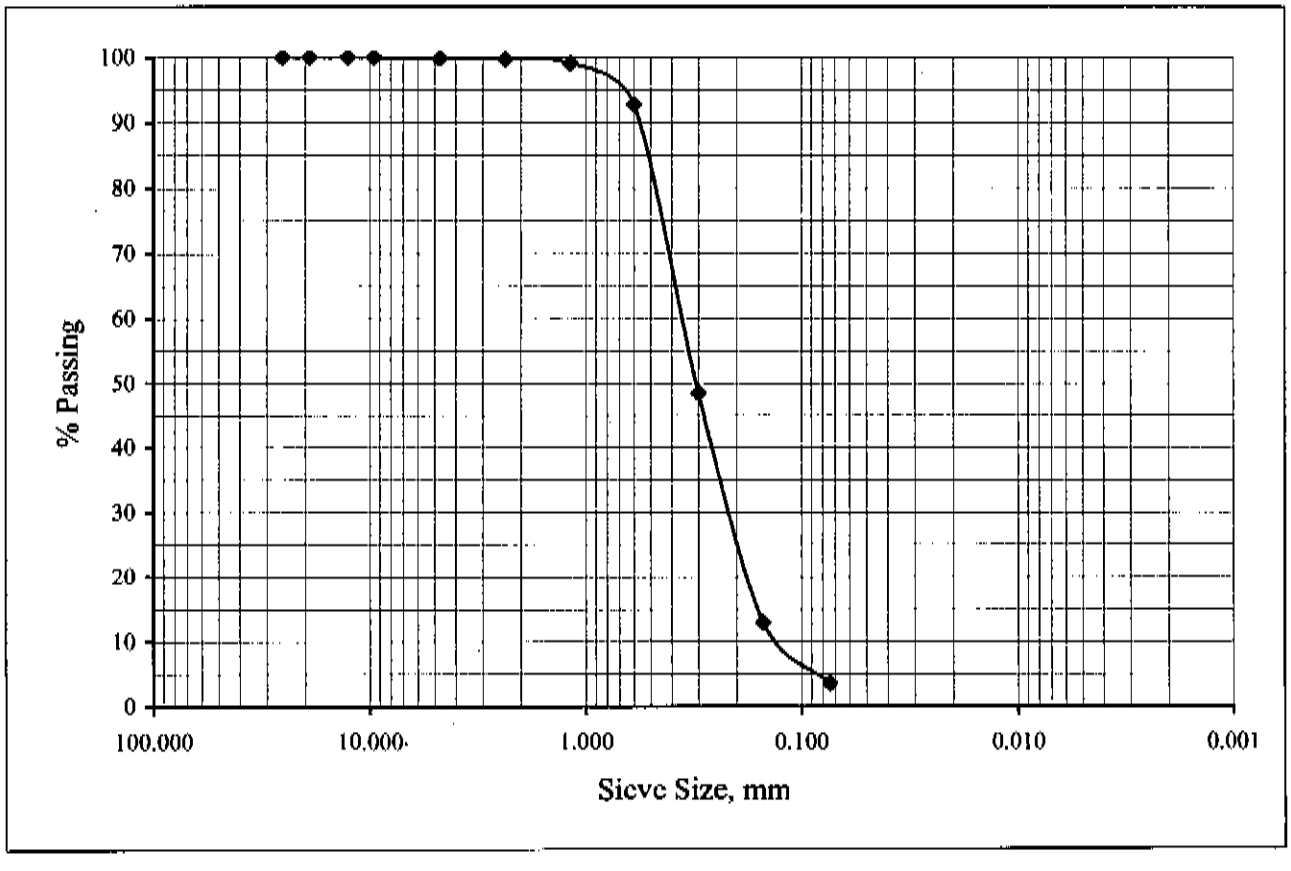
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Gradation

ASTM C117 & C136

Project Number: 544-10159
Project Name: Peterson Road Subdivision
Lab ID Number: LN6-10381
Sample ID: BH-10 R-1 @ 5' Soil Classification: SP

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	99.8
#8	2.36	99.7
#16	1.18	99.1
#30	0.60	92.7
#50	0.30	48.4
#100	0.15	12.9
#200	0.074	3.5



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One Dimensional Consolidation

ASTM D2435 & D5333

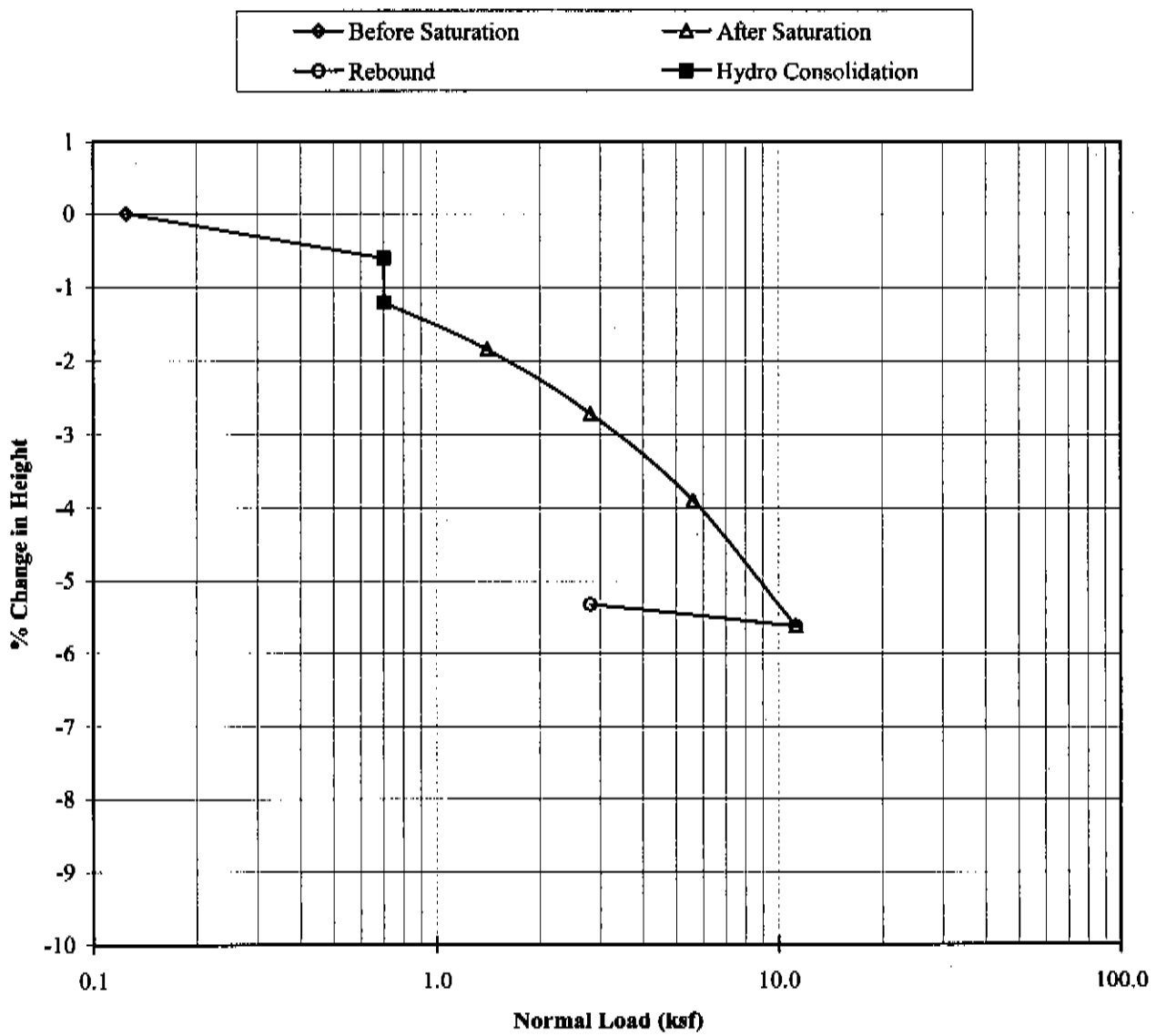
Job Number: 544-10159
Job Name: Peterson Road Subdivision

Lab ID Number: LN6-10381
Sample ID: BH-4 R-1 @ 5'
Soil Description: Brown Sandy Silt (ML)

Initial Dry Density, pcf:	86.7
Initial Moisture, %:	1.1
Initial Void Ratio:	0.923
Specific Gravity:	2.67

Hydrocollapse: 0.6% @ 0.702 ksf

% Change in Height vs Normal Presssure Diagram



Sladden Engineering

6782 Stanton Ave., Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
45090 Golf Center Pkwy, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Date: October 11, 2010

Account No.: 544-10159

Customer: IMH Special Asset NT 100, LLC

Location: Peterson Road, Rancho Mirage

Analytical Report

Corrosion Series

	pH per CA 643	Soluble Sulfates per CA 417 ppm	Soluble Chloride per CA 422 ppm	Min. Resistivity per CA 643 ohm-cm
BH-4 @ 0-5'	8.4	110	60	2900

APPENDIX F

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/1/2024
Case Description: RNCH 005 - Peterson Road 16 Lot Subdivision (TTM 38971)

---- Receptor #1 ----

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Residential Homes	Residential	60	55	50

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	100	10
Compactor (ground)	No	20		83.2	100	10
Concrete Mixer Truck	No	40		78.8	100	10
Concrete Pump Truck	No	20		81.4	100	10
Dump Truck	No	40		76.5	100	10
Excavator	No	40		80.7	100	10
Grader	No	40	85		100	10
Front End Loader	No	40		79.1	100	10
Roller	No	20		80	100	10
Paver	No	50		77.2	100	10
Tractor	No	40	84		100	10
Flat Bed Truck	No	40		74.3	100	10

Results

Equipment	Calculated (dBA) *Lmax	L10	Noise Limits (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10	Noise Limit Exceedance (dBA) Day Lmax	L10	Evening Lmax	L10	Night Lmax	L10
Backhoe	61.5	60.6	85	75	85	60	80	55	None	None	None	0.6	None	5.6
Compactor (ground)	67.2	63.2	85	75	85	60	80	55	None	None	None	3.2	None	8.2
Concrete Mixer Truck	62.8	61.8	85	75	85	60	80	55	None	None	None	1.8	None	6.8
Concrete Pump Truck	65.4	61.4	85	75	85	60	80	55	None	None	None	1.4	None	6.4
Dump Truck	60.4	59.5	85	75	85	60	80	55	None	None	None	None	None	4.4
Excavator	64.7	63.7	85	75	85	60	80	55	None	None	None	3.7	None	8.7
Grader	69	68	85	75	85	60	80	55	None	None	None	8	None	13
Front End Loader	63.1	62.1	85	75	85	60	80	55	None	None	None	2.1	None	7.1
Roller	64	60	85	75	85	60	80	55	None	None	None	None	None	5
Paver	61.2	61.2	85	75	85	60	80	55	None	None	None	1.2	None	6.2
Tractor	68	67	85	75	85	60	80	55	None	None	None	7	None	12
Flat Bed Truck	58.2	57.3	85	75	85	60	80	55	None	None	None	None	None	2.3
Total	69	74	85	75	85	60	80	55	None	None	None	14	None	19

*Calculated Lmax is the Loudest value.

AGUA CALIENTE BAND OF CAHUILLA INDIANS
TRIBAL HISTORIC PRESERVATION

03-008-2023-009

April 29, 2025

[VIA EMAIL TO:pilarf@ranchomirageca.gov]
City of Rancho Mirage
Pilar Fløtterud
68-825 Highway 111
Rancho Mirage, California 92270

Re: EA24-0009

Dear Pilar Fløtterud,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the 16-Lot Subdivision project. We have reviewed the documents and have the following comments:

> *At this time the concerns of the ACBCI THPO have been addressed and proper mitigation measures have been proposed to ensure the protection of tribal cultural resources. This letter shall conclude our AB52 consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 423-3485. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Xitlaly Madrigal
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

AUGUSTINE BAND OF CAHUILLA INDIANS

84-001 AVENUE 54 COACHELLA, CA 92236 | T: 760-398-4722 F: 760-369-7161

TRIBAL CHAIRPERSON: AMANDA AUGUSTINE TRIBAL TREASURER: WILLIAM VANCE

TRIBAL COUNCIL MEMBER: RONNIE VANCE

Date: 03/21/2025

Pilar Flotterud
Senior Planner
Development Services Department
69-825 Highway 111
Rancho Mirage, CA 92270

SUBJECT: Environmental Assessment Case No. EA24-0009 Tentative Tract Map Case No. TTM24-0003 for Tentative Tract Map 38971 – APN: 689-090-003, 689-130-004, 689-130-005, 689-130-014, 689-130-017-689-130-018, 689-140-022

Thank you for contacting Augustine Band of Cahuilla Indians about the proposed **aforementioned project.** We appreciate your consideration of the cultural resources in the project area.

At this time, we are not aware of any specific cultural resources within the project area that would be affected by the proposed development. Therefore, we do not believe that formal consultation is necessary at this stage.

If any cultural resources are discovered during the project, we ask that you contact the California Native American Heritage Commission immediately to take appropriate steps to evaluate and protect them.

Thank you once again for your attention to this important matter.

Very truly yours,

Jacobia Kirksey

Jacobia Kirksey, Tribal Operations Specialist
Augustine Band of Cahuilla Indians



Subject: Environmental Assessment Case No. EA24-0009 Tentative Map Case No. TTM24-0003 for Tentative Tract Map 38971

Jill Mccormick <historicpreservation@quechantribe.com>
to Pilar Fløtterud

Mon, Mar 10, 3:22 PM

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

Good afternoon,

This email is to inform you that the Historic Preservation Office does not wish to comment on this project. We defer to the local Tribes and support their determinations on this matter.

Email correspondence is the preferred method of communication with this office. Hard copies of project letters are not required if an email containing the project documents has been sent to the Historic Preservation Office. Also, please update your contact information for the Quechan Tribe.

All project-based correspondence should be sent to this email address (historicpreservation@quechantribe.com) and President Jordan Joaquin (executivesecretary@quechantribe.com). Per the Tribe's NAHC contact list, please remove Manfred Scott (culturalcommittee@quechantribe.com and scottmanfred@yahoo.com) from the distribution list for the Quechan Tribe.

Jill

H. Jill McCormick, M.A.
Historic Preservation Office
Ft. Yuma Quechan Indian Tribe
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-919-3631
Cell: 928-920-6521

CITY OF RANCHO MIRAGE

May 8, 2025

Pechanga Band of Indians
P.O. Box 2183
Temecula, CA 92593

RE: Environmental Assessment Case No. EA24-0009 Tentative Tract Map Case No. TTM24-0003 for Tentative Tract Map 38971 – APN: 689-090-003, 689-130-004, 689-130-005, 689-130-013, 689-130-014, 689-130-017, 689-130-018, 689-140-022

To Whom It May Concern:

Thank you for your participation in the AB 52 Tribal Consultation process regarding the following project: Environmental Assessment Case No. EA24-0009 and Tentative Tract Map Case No. TTM24-0003 (Tentative Tract Map 38971) located on APNs: 689-090-003, 689-130-004, 689-130-005, 689-130-013, 689-130-014, 689-130-017, 689-130-018, 689-140-022.

To provide full clarity, the following is a summary of the consultation timeline:

- February 11, 2025 – AB 52 notification letter was sent to the Pechanga Tribe via certified mail, initiating the 30-day consultation request period.
- March 7, 2025 – The City received the Tribe's formal request for consultation. Requested materials were provided, and a consultation meeting was scheduled.
- March 10, 2025 – End of the initial 30-day consultation request period. A request from the Pechanga Tribe was sent requesting project documents, which City staff sent documents that same day.
- April 7, 2025 – Consultation meeting was held. The City reviewed proposed mitigation measures and the Tribe requested additional time, until April 21, 2025, to provide further comments.
- April 28, May 1, May 5, and May 7, 2025 – Follow-up emails sent by City requesting a response.
- April 28 and May 5, 2025 – Voicemails left requesting an update.

As of today, the City has not received any additional correspondence from the Pechanga Tribe. In accordance with AB 52, and based on the reasonable and good-faith efforts detailed above, the City concludes that mutual agreement could not be reached. Therefore, the AB 52 Tribal Consultation period will be considered closed within five (5) working days from receipt of this notice, which is being sent via email and certified mail, if no further information is provided by the Tribe.

We sincerely appreciate your time and consideration and welcome future opportunities for collaboration with your tribe.

Sincerely,

Pilar Fløtterud
Senior Planner

RESPONSE TO COMMENTS

TENTATIVE TRACT MAP 38971
16 LOT SUBDIVISION
RANCHO MIRAGE, CALIFORNIA

LEAD AGENCY:

CITY OF RANCHO MIRAGE
69-825 HIGHWAY 111
RANCHO MIRAGE, CALIFORNIA 92270

REPORT PREPARED BY:

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
2211 S. HACIENDA BOULEVARD, SUITE 107
HACIENDA HEIGHTS, CALIFORNIA 91745

OCTOBER 2025

1. INTRODUCTION & PROJECT OVERVIEW

The City of Rancho Mirage is reviewing an application that would involve the subdivision of 16 lots within 8 parcels totaling 19.81 acres. Currently, the three southern parcels would subdivided into 8 lots - Lot 6, 7, 8, 9, 13, 14, 15, and 16. This would be phase 1 of the project. Phase 2 of the project involves the remaining 5 northern parcels which would be subdivided into 8 lots - Lots 1, 2, 3, 4, 5, 10, 11, and 12. The subject parcels are all vacant and undeveloped. The proposed development would connect to a new 8-inch water main and an 8-inch sewer main in Peterson Road. The terrain in the project area is generally level, with ground elevations ranging approximately from 255 feet to 260 feet above mean sea level. The surface soil is composed of light olive gray fine sand. The project is located within what is considered to be the California Creosote Bush Scrub plant community though the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses. The Zoning designation that is applicable to the aforementioned parcels is *Residential Estate (R-E)*. No General Plan Amendment or Zone Change would be required for the proposed residential development.

The City of Rancho Mirage determined, as part of the Initial Study's preparation, that a Mitigated Negative Declaration was the appropriate environmental document for the proposed project's CEQA review. The Initial Study and the Notice of Intent to Adopt a Mitigated Negative Declaration was forwarded to responsible agencies, trustee agencies, and the public for review and comment. A 30-day public review period commenced on July 31, 2025 and ended on August 19, 2025 to allow these entities and other interested parties to comment on the proposed project and the findings of the Initial Study. Only one comment letter was received from the following State Agency:

- State of California – Natural Resources Agency Department of Fish and Wildlife. 3602 Inland Deserts Region, Ontario California 91764.

2. COMMENTS AND RESPONSE TO COMMENTS

2.1 COMMENTS & RESPONSES - CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

Comment #1

The California Department of Fish and Wildlife (CDFW) received a Notice of Intent to Adopt a Mitigated Negative Declaration from the City of Rancho Mirage (City) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

Response #1

The comment is noted for the record. No further response is required.

Comment #2 CDFW Role

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on Projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

Response #2

The comment is noted for the record. No further response is required.

Comment #3 Project Description Summary

Proponent: Phillip Fomotor
Objective: The Project involves the subdivision of 16 single-family residential lots within 8 parcels totaling 19.81 acres and the development of those lots. The 16 individual lot sizes would range in land area from 42,476 square feet to 67,608 square feet. The lots would be arranged along Peterson Road around the proposed cul-de-sac roadway. The Project will undergo two phases. Currently, the three southern parcels would be subdivided into 8 lots: Lots 6, 7, 8, 9, 13, 14, 15, and 16. This would be phase 1 of the Project. Phase 2 of the Project involves the remaining 5 northern parcels, which would be subdivided into 8 lots: Lots 1, 2, 3, 4, 5, 10, 11, and 12.

All exterior lighting at the project site would be conditioned to be Dark-Sky compliant. Drought tolerant landscaping will be planted throughout the project site.

Location: The proposed Project is located north of the intersection of Mirage Cove Drive and Peterson Road in the City of Rancho Mirage, in the County of Riverside. Assessor's Parcel Numbers: 689-090-003, 689-130-004, 689-130-005, 689-130-013, 689- 130-014, 689-130-017, 689-130-018, and 689-140-022. The proposed Project area is generally bounded on the north by the Whitewater River, on the west by Golden State Street, a private street with no access to the subject site, on the south by Mirage Cove Drive, and on the east by the Whitewater River and Kelley Lane.

Timeframe: The MND proposes Project construction to start in July 2025.

Response #3

The comment is noted for the record.

Comment #4 Comments and Recommendations

CDFW has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. The MND has not adequately identified and disclosed the Project's impacts (i.e., direct, indirect, and cumulative) on biological resources and whether those impacts are reduced to less than significant. CDFW's comments and recommendations on the MND are explained in greater detail below and summarized here. CDFW is concerned that the MND does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW requests that additional information and analyses be added to a revised MND, along with avoidance, minimization, and mitigation measures that avoid or reduce impacts to a level less than significant.

Response #4

The comment has been noted for the record. Biological surveys were conducted on the 19.8-acre parcel. The property is located in an area zoned for residential usage in Rancho Mirage, California. As part of the environmental process, California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) data sources were reviewed. Following the data review, surveys were performed on the site on October 4, 2022, during which the biological resources on the site and in the surrounding areas were documented by biologists from RCA Associates, Inc. As part of the surveys, the property and adjoining areas were evaluated for the presence of native habitats to determine if they supported populations of sensitive wildlife species. The property was also evaluated for the presence of sensitive habitats including wetlands, vernal pools, riparian habitats, and jurisdictional areas. Habitat assessments were also conducted for the desert tortoise and burrowing owl. In addition, data from USFWS, CDFW, and a search of the California Natural Diversity Database was completed. The Biological Report, in its entirety was included in Appendix A.

Comment #5 Existing Environmental Setting

Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed Project. CDFW is concerned that the assessment of the existing environmental setting has not been adequately analyzed in the MND. CDFW is concerned that without a complete and accurate description of the existing environmental setting, the MND may provide an incomplete analysis of Project-related environmental impacts. The MND lacks a complete and appropriate assessment of biological resources within the Project site and surrounding area specifically as it relates burrowing owl (Athene cunicularia) and an assessment of biological resources, as discussed in the Assessment of Biological Resources and Burrowing Owl sections below. A complete and accurate assessment of the environmental setting and Project-related impacts to biological resources is needed to both identify appropriate avoidance, minimization, and mitigation measures and demonstrate that these measures reduce Project impacts to less than significant.

Response #5

The relatively flat site is approximately 131 meters above sea level and contains no slope. The vegetation community present on site supports a disturbed desert scrub habitat encompassing mainly native plants and some non-native grasses. The site contains a few species of plant which include kelch grass (*Schismus barbatus*), creosote bush (*Larrea tridentata*), Four winged saltbush (*Atriplex canescens*), Asian mustard (*Brassica tournefortii*), Nettle leaved goosefoot (*Chenopodiastrum murale*) and Brittlebush (*Encelia farinosa*). The site also supports a minimal amount of wildlife, with many of them being birds. Species that were not observed, but are expected to occur on site given their abundance in the surrounding areas include California ground squirrel (*Otospermophilus beecheyi*) and antelope ground squirrel (*Ammospermophilus leucurus*). Birds observed included common ravens (*Corvus corax*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), Anna's hummingbird (*Calypte anna*), red-tailed hawk (*Buteo.* The site is located within documented burrowing owl habitat according to CNDDB (2024). No owls were seen on the property during the survey, and minimal suitable habitat was observed. Burrowing owls are not expected to occur on the site due to lack of suitable vegetation and burrows. Mitigation was included to address the potential impacts to burrowing owls during construction activities.

Comment #6 Mitigation Measures

CEQA requires that an MND include mitigation measures to avoid or reduce significant impacts. CDFW is concerned that the mitigation measures proposed in the MND are not adequate to avoid or reduce impacts to biological resources to below a level of significance. To support the City in ensuring that Project impacts to biological resources are reduced to less than significant, CDFW recommends revising the mitigation measures for burrowing owl, nesting birds, and special-status plants, and adding mitigation measures for artificial nighttime lighting and the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP).

Response #6

Later in this RTC document, new and/or revised mitigation measures have been identified where appropriate. These include measures that address potential construction impacts to burrowing owls, nesting birds, and special status plant species. These measures are identified in the responses that follow. In addition, the Mitigation Monitoring and Reporting Program was revised to reflect the new or revised mitigation.

Comment #7 Assessment of Biological Resources

Page 5 of the Project's General Biological Assessment (Biological Assessment), dated March 2024, indicates that the Project site supports suitable habitat for slender cottonheads (*Nemacaulis denudate* var. *gracilis*) and chaparral sand-verbena (*Abronia villosa* var. *aurita*) but none were observed during field surveys. CDFW concurs that the Project site contains suitable habitat for these two species. Page 4 of the Biological Assessment indicates that general biological surveys were conducted on February, 12, 2024, a time that is outside of the typical bloom period for slender cottonheads (April and May according to Calflora). Additionally, photos provided in the Biological Assessment appear to show presence of desert sand verbena (*Abronia villosa*), though the Biological Assessment does not indicate that desert sand verbena was observed on-site or discuss how the absence of a rare variety of the species, chapparal sandverbena, was determined.

Per CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018), CDFW recommends that botanical field surveys are conducted at the times of year when plants will be both evident and identifiable. Since surveys were conducted outside of the peak bloom period for slender cottonheads, and the Biological Assessment lacks a discussion of how absence of chapparal sand-verbena was determined, CDFW is concerned that the assessment of the existing environmental setting with respect to special-status plants has not been adequately analyzed in the MND. Compliance with CEQA is predicated on a complete and accurate description of the environmental setting that may be affected by the proposed Project. CDFW is concerned that without a complete and accurate description of the existing environmental setting, the MND likely provides an incomplete or inaccurate analysis of Project-related environmental impacts and whether those impacts have been mitigated to a level that is less than significant. Without an appropriate assessment of the biological resources, particularly focused on special-status plants, appropriate avoidance, minimization, and/or mitigation measures cannot be identified, and it is uncertain if impacts to biological resources have been reduced to a level less than significant. CDFW recommends the MND and its supporting documents be revised to include the results of a thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018), which includes conducting botanical field surveys at the times of year when plants will be both evident and identifiable. Based on the findings of a thorough, recent floristic-based assessment, CDFW recommends that the MND is revised to include appropriate avoidance, minimization, and mitigation measures.

The MND includes Mitigation Measure BIO-2, indicating that a "focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife." CDFW considers the measure to be inadequate, in part, because it does not identify specific survey protocols or include appropriate avoidance, minimization, and mitigation. To reduce impacts to special-status plants to a level less than significant, CDFW recommends the City revise Mitigation Measure BIO-2 as follows (with additions in **bold** and removals in ~~strikethrough~~):

Mitigation Measure BIO-2: Special-Status Plants

Prior to Project construction activities, a thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (see https://wildlife.ca.gov/Conservation/Plants) shall be performed by a qualified biologist. Should any state-listed plant species (excluding CVMSHCP Covered Species) be present in the Project area, the Project proponent shall obtain appropriate California Endangered Species Act (CESA) authorization for those species prior to the start of Project activities. Should any species of native plants designated as rare, threatened, or endangered by state law (excluding CVMSHCP Covered Species) be present in the Project area, on-site or off-site habitat restoration (whichever is applicable) and/or enhancement and preservation should be evaluated and discussed in detail. Where habitat preservation is not available on-site, off-site land acquisition, management, and preservation should be evaluated. ~~A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-~~

~~June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.~~

Pursuant to the CEQA Guidelines, section 15097(f), CDFW has prepared a draft mitigation monitoring and reporting program (MMRP) in Attachment 1 for CDFW recommended revisions to MM BIO-1 and MM BIO-2 and CDFW-recommended MM BIO-[A], MM BIO-[B], and MM BIO-[C].

Response #7

The comment is noted for the record. Mitigation Measure BIO-2 has been revised to address the CDFW's concerns regarding the identification of specific survey protocols along with appropriate avoidance, minimization, and mitigation strategies. The revised mitigation language would be incorporated into the ISMND by reference. The CDFW indicated that the revised mitigation measure would reduce the impacts to special-status plants to a level less than significant, The revised mitigation is provided below (with additions in **bold** and removals in ~~strikethrough~~):

> *Mitigation Measure BIO-2: Special-Status Plants.* **Prior to Project construction activities, a thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* shall be performed by a qualified biologist. Should any state-listed plant species (excluding CVMSHCP Covered Species) be present in the Project area, the Project proponent shall obtain appropriate California Endangered Species Act (CESA) authorization for those species prior to the start of Project activities. Should any species of native plants designated as rare, threatened, or endangered by state law (excluding CVMSHCP Covered Species) be present in the Project area, on-site or off-site habitat restoration (whichever is applicable) and/or enhancement and preservation should be evaluated and discussed in detail. Where habitat preservation is not available on-site, off-site land acquisition, management, and preservation should be evaluated.** ~~A focused plant survey should be considered for all special status plant species that have the potential to occur on the site to be performed during the blooming season (April-June) to determine the potential environmental effects of the proposed projects on special status plants and sensitive natural communities following recommended protocols by the Department of Fish and Wildlife.~~

Comment #8 Nesting Birds

It is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

With regard to the CVMSHCP, per its associated Implementing Agreement (IA) and Permits from CDFW and the U.S. Fish and Wildlife Service (the Wildlife Agencies), Take associated with Covered Activities will not be in violation of the Migratory Bird Treaty Act and will be consistent with Fish and Game Code sections 3503 and 3503.5; therefore, all Covered Activities within and outside Conservation Areas must undertake measures to avoid the take of individuals, nests, and eggs of nesting birds. The CVMSHCP includes a general conservation measure that applies to all bird species to avoid impacts to habitat for nesting birds during the nesting season (CVMSHCP Section 9.7). Per IA Section 13.2, the City is obligated to ensure the projects to which it confers Take Authorization under the CVMSHCP comply with all terms and requirements of the CVMSHCP, the Wildlife Agencies' Permits that create the CVMSHCP, and the IA, including compliance with laws that protect nesting birds.

The MND and its supporting documents lack an analysis on the potential impacts of the Project on nesting birds and their suitable habitat, though the MND includes a mitigation measure for nesting birds. CDFW considers the Project site to contain suitable habitat for ground-nesting birds and birds that nest in shrubs and trees, including both native and non-native vegetation (including ornamental plants). Disturbance to and removal of vegetation within and surrounding the Project areas has the potential to impact nesting birds. Construction noise associated with the Project also has the potential to impact nesting birds. The direct and indirect impacts of the Project have the potential to significantly adversely affect nesting birds.

CDFW considers the mitigation measure for nesting birds in the MND to be inadequate in scope and timing to reduce impacts to nesting birds to a level less than significant. In alignment with the CVMSHCP's general conservation measure for nesting birds (CVMSHCP Section 9.7), CDFW recommends Project construction activities are conducted outside of the peak nesting bird season. CDFW also recommends the completion of nesting bird surveys *regardless* of the time of year to ensure that impacts to nesting birds and their nests and eggs are avoided. The timing of the nesting season varies greatly depending on several factors, such as bird species, weather conditions in any given year, and long-term climate changes (e.g., drought, warming, etc.). In response to warming, birds have been reported to breed earlier, thereby reducing temperatures that nests are exposed to during breeding and tracking shifts in availability of resources (Socolar et al., 2017). CDFW staff have observed that climate change conditions may result in the nesting bird season occurring earlier and later in the year than historical nesting season dates. CDFW recommends that disturbance of occupied nests of migratory birds and raptors within the Project site and surrounding area be avoided any time birds are nesting on-site. CDFW therefore recommends the completion of nesting bird surveys *regardless of the time of year* to ensure compliance with all applicable laws pertaining to nesting and migratory birds. To support the City in reducing impacts to nesting birds to a less than significant level, CDFW recommends the City revise the mitigation measure for nesting birds as follows (with additions in **bold** and removals in ~~strikethrough~~):

Mitigation Measure BIO-1: Nesting Birds

Nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest

buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Construction activities may not occur inside the established buffers, which shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance. ~~Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.~~

a. ~~Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.~~
b. ~~Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas~~

Response #8

The site supports a disturbed desert scrub community which sparsely covers the property. Species present on the site included kelch grass (*Schismus barbatus*), creosote bush (*Larrea tridentata*), Four-winged saltbush (*Atriplex canescens*), Asian mustard (*Brassica tournefortii*), Nettle leaved goosefoot (*Chenopodiastrum murale*) and Brittlebush (*Encelia farinosa*). The surface soil is composed of light olive gray fine sand. The project location is within what would be the California Creosote Bush Scrub plant community; however, the ground surface in the project area has been cleared of native vegetation in the past and existing vegetation include introduced and ruderal species such as landscaping plants and low-lying grasses. The entirety of the project area has been disturbed in the past, with all native vegetation being removed. Nevertheless, the biological report acknowledged that nesting birds located onsite are protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Cod. For this reason, surveys shall be conducted prior to the commencement of Project-related ground disturbance. The revised mitigation is outlined below. Deleted text is noted using ~~strikeout~~ and new text is shown in **bold** lettering.

> *Mitigation Measure BIO-1: Nesting Birds.* **Nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species**

and based on nest and buffer monitoring results. Construction activities may not occur inside the established buffers, which shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance. ~~Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.~~

a. ~~Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.~~
b. ~~Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas~~

Comment #9 Burrowing Owl

On October 10, 2024, the Fish and Game Commission determined that western burrowing owl warrants protection as a candidate species under the California Endangered Species Act (Fish & G. Code, § 2050 et seq.). During the candidacy period, western burrowing owl will be afforded the same protection as threatened and endangered species under CESA. If Project activities, including relocation, could result in take, appropriate CESA authorization (i.e., Incidental Take Permit under Fish and Game Code section 2081) should be obtained prior to commencement of Project activities.

Take of individual burrowing owls and their nests or eggs is defined by Fish and Game Code section 86, and prohibited by sections 3503, 3503.5, and 3513. Take is defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture or kill, or attempt to hunt, pursue, catch, capture or kill." Fish and Game Code sections 3503, 3503.5, and 3513 afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by Fish and Game Code or any regulation made pursuant thereto. Fish and Game Code section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by Fish and Game Code or any regulation adopted pursuant thereto. Fish and Game Code section 3513 makes it unlawful to take or possess any migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. § 703 et seq.).

With regard to the CVMSHCP, the CDFW Natural Community Conservation Plan (NCCP) Permit #2835-2008-001-06 does not provide Take Authorization for burrowing owl individuals, nests, or eggs. To the contrary, section 3.5.6 of the NCCP Permit states burrowing owl "pairs or individuals will not be Taken" and reiterates that the "HCP/NCCP does not authorize Take of [burrowing owl] nests [or] eggs[.]" Therefore, throughout the CVMSHCP area—both within and without Conservation Areas—Permittees must ensure

that activities occurring within their jurisdictions do not result in the take, possession, or destruction of burrowing owl individuals, nests, or eggs. Any activity occurring within the CVMSHCP area that results in the take of burrowing owl individuals, nests, or eggs would be unlawful and would not be a Covered Activity under the CVMSHCP. Per IA Section 13.2, the City is obligated to ensure the projects to which it confers Take Authorization under the CVMSHCP comply with all terms and requirements of the CVMSHCP, the Wildlife Agencies' Permits that created the CVMSHCP, and the IA, including compliance with laws that protect burrowing owls.

Page 34 of the MND states that the "site is located within documented burrowing owl habitat according to CNDDB (2024). No owls were seen on the property during the survey, and minimal suitable habitat was observed. Burrowing owls are not expected to occur on the site due to lack of suitable vegetation and burrows." Page 4 of the Project's General Biological Resources Assessment (Biological Assessment), dated March 3, 2023, states that "following completion of the initial reconnaissance survey, habitat assessments were conducted for the burrowing owl." The MND and its supporting documents lack information on the protocols used to conduct a habitat assessment for burrowing owl and lack reporting on the findings of the habitat assessment, including, but not limited to, a discussion of vegetation and habitat types potentially supporting burrowing owls in the Project area and vicinity, a written description of the biological setting as it relates to the potential presence of burrowing owl, and the locations of any suitable burrows and/or burrow surrogates identified within or adjacent to the Project site. Given the MND's lack of findings from a habitat assessment and recent focused surveys for burrowing owl following the guidelines in the *Staff Report on Burrowing Owl Mitigation*, the number and locations of suitable and occupied burrows within the Project site and surrounding areas are unknown, and CDFW is limited in its ability to provide biological expertise to support the City in reducing impacts to burrowing owl to a level less than significant.

CDFW notes that in California, preferred habitat for burrowing owl is generally typified by short, sparse vegetation with few shrubs, and that burrowing owls may occur in ruderal grassy fields, vacant lots, and pastures if the vegetation structure is suitable and there are useable burrows and foraging habitat proximity. Based on review of historical aerial imagery, most areas of the Project contain vacant land with sparse vegetation cover that is suitable nesting and foraging habitat for burrowing owl. CDFW also notes that burrowing owls have also been observed within 1.3 miles of the Project site in areas associated with the Whitewater River based on unprocessed occurrence data accessed using the California Natural Diversity Database. Burrowing owls also frequently move into disturbed areas prior to and during construction activities since they are adapted to highly modified habitats. CDFW considers the Project site and surrounding vacant area to contain suitable nesting and foraging habitat for burrowing owl. Given the presence of suitable habitat for burrowing owl within the Project sites and surrounding area, CDFW recommends that the MND is revised to include the results of focused surveys, including survey reports, for burrowing owl within the Project site and surrounding area following the guidelines outlined in Appendix D of the *Staff Report on Burrowing Owl Mitigation* and to incorporate appropriate avoidance, minimization, and mitigation measures for burrowing owl. Focused surveys and pre-construction surveys are needed to inform appropriate avoidance, minimization, and mitigation measures and support the City in reducing impacts to burrowing owl to a level less than significant. Without conducting focused and pre-construction surveys and incorporating appropriate avoidance, minimization, and mitigation measures, the Project is at risk of significantly adversely affecting burrowing owl.

Page 11 of the Project's Biological Assessment states that "a pre-construction burrowing owl survey may be required by CDFW to determine if any owls have moved on to the site since the February 12, 2024 surveys." The MND includes Mitigation Measure BIO-1, which addresses both nesting birds and burrowing owl. CDFW considers Mitigation Measure BIO-1 to be inadequate in scope and timing to reduce impacts to burrowing owl to a level less than significant. CDFW recommends the City add the following stand-alone mitigation measure for burrowing owl to a revised MND:

Mitigation Measure BIO-[A]: Burrowing Owl Focused and Pre-Construction Surveys

Suitable burrowing owl habitat has been confirmed on the site; therefore, focused burrowing owl surveys shall be conducted by a CVMSHCP-approved Acceptable Biologist in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version) prior to vegetation removal or ground-disturbing activities. If burrowing owls are detected during the focused surveys, the qualified biologist and Project proponent shall begin coordination with CDFW and USFWS immediately, and shall prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW for review and approval prior to commencing Project activities. The Burrowing Owl Plan shall describe proposed avoidance and monitoring actions, including measures necessary to avoid take of burrowing owl individuals, nests, and eggs. The Burrowing Owl Plan shall include the number and location of occupied burrow sites (occupied site means at least one burrowing owl or its sign has been observed within the last three years; may be indicated by owl sign including feathers, pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance or perch site), acres of burrowing owl habitat that will be impacted, details of site monitoring, and details on proposed buffers and other avoidance measures. If impacts to occupied burrowing owl habitat or burrow(s) or burrowing owl individuals, nests, or eggs cannot be avoided, appropriate CESA authorization (i.e., Incidental Take Permit under Fish and Game Code section 2081) should be obtained from CDFW prior to commencement of Project activities. Preconstruction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the *Staff Report on Burrowing Owl Mitigation* (2012 or most recent version). Preconstruction surveys should be repeated when there is a pause in construction of more than 30 days. Preconstruction surveys shall be performed by a CVMSHCP-approved Acceptable Biologist following the recommendations and guidelines provided in the *Staff Report on Burrowing Owl Mitigation*. If the preconstruction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with CDFW and prepare a Burrowing Owl Avoidance and Monitoring Plan that shall be submitted to CDFW and USFWS for review and approval prior to commencing Project activities.

Response #9

Both the IS/MND and the and the Biological Report that was prepared for the project indicated there was a potential for burrowing owls to be present on the site and that a preconstruction survey was warranted. The IS/MND states "the site is located within documented burrowing owl habitat according to CNDDB (2024). No owls were seen on the property during the survey, and minimal suitable habitat was observed. Burrowing owls are not expected to occur on the site due to lack of suitable vegetation and burrows." However, the ISMND did include the following mitigation:

Biological Resources Mitigation No. A1 Pre-construction surveys for burrowing owls and nesting birds protected under the Migratory Bird Treaty Act and Section 3503 of the California Fish and Wildlife Code shall be conducted prior to the commencement of Project-related ground disturbance.

a. Appropriate survey methods and timeframes shall be established, to ensure that chances of detecting the target species are maximized. In the event that listed species, such as desert tortoise, are encountered, authorization from the USFWS and CDFW must be obtained. If nesting birds are detected, avoidance measures shall be implemented to ensure that nests are not disturbed until after young have fledged.

b. Pre-construction surveys shall encompass all areas within the potential footprint of disturbance for the project, as well as a reasonable buffer around these areas.

The revised mitigation is outlined below. New text is shown in **bold** lettering.

Biological Resources Mitigation No. 3. **Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with the California Department of Fish & Wildlife (CDFW) and United State Fish & Wildlife Service (USFWS) to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.**

Comment #10 *Artificial Nighttime Lighting*

Page 23 of the MND indicates that "All exterior lighting at the project site would be conditioned to be Dark-Sky compliant, in order to reduce the amount of light emitted at the project site at night." The MND lacks additional information on artificial nighttime lighting and any additional associated avoidance measures. Two of the Project areas are located adjacent to the Whitewater River—an area that provides suitable nesting, roosting, foraging, and refugia habitat for birds, migratory birds that fly at night, bats, and other nocturnal and crepuscular wildlife. The Project's proposed artificial nighttime lighting has the potential to significantly and adversely affect wildlife in the open-space and vacant areas adjacent to the Project site. Artificial lighting alters ecological processes including, but not limited to, the temporal niches of species; the repair and recovery of physiological function; the measurement of time through interference with the detection of circadian and lunar and seasonal cycles; the detection of resources and natural enemies; and navigation. Many species use photoperiod cues for communication (e.g., bird song), determining when to begin foraging, behavioral thermoregulation, and migration. Phototaxis, a phenomenon that results in attraction and movement towards light, can disorient, entrap, and temporarily blind wildlife species that experience it.

While plans to condition the Project's artificial nighttime lighting to be Dark-Sky compliant support the Project in limiting lighting impacts to biological resources within areas surrounding the Project site, CDFW considers these minimization plans insufficient in scope and timing to reduce impacts to a level less than significant. To support the City in avoiding or reducing impacts of artificial nighttime lighting on biological resources to less than significant, CDFW recommends the City add the following mitigation measure to a revised MND:

Mitigation Measure BIO-[B]: Artificial Nighttime Lighting

Throughout construction and the lifetime operations of the Project, the City and Project proponent shall eliminate all nonessential lighting throughout the Project area and avoid or limit the use of artificial light at night during the hours of dawn and dusk when many wildlife species are most active. The City and Project proponent shall ensure that all lighting for the Project is fully shielded, cast downward and directed away from surrounding open-space and agricultural areas, reduced in intensity to the greatest extent possible, and does not result in lighting trespass including glare into surrounding areas or upward into the night sky (see the International Dark-Sky Association standards at http://darksky.org/). The City and Project proponent shall ensure use of LED lighting with a correlated color temperature of 3,000 Kelvins or less, proper disposal of hazardous waste, and recycling of lighting that contains toxic compounds with a qualified recycler.

Response #10

The comment is noted for the record, but provides no substantial evidence that the Project will result in substantial lighting, or that the lighting proposed for the Project will impact biological resources. The proposed Project's lighting must be designed so as to prevent emissions of glare or light beyond the property line in accordance with City Municipal Code Section 17.18.050 and the Community Design Element in the City's General Plan. All exterior lighting at the project site would be conditioned to be Dark-Sky compliant, in order to reduce the amount of light emitted at the project site at night and preserve the desert night sky. Further, the City's construction hour restrictions make it unlikely that construction will occur at night. Adherence with the Municipal Code and General Plan will help ensure that lighting on the property would not pose significant impacts to wildlife; no change to the IS/MND is required.

Comment #11 Coachella Valley Multiple Species Habitat Conservation Plan

Local Development Mitigation Fee. The Project is located within the CVMSHCP Plan Boundary and outside of a Conservation Area and contains habitat for Covered Species and/or conserved natural communities. Per CVMSHCP Section 5.2.1.1 and IA Sections 12.2.1 and 13.2, the City is obligated to impose a local development mitigation fee for new development within the Plan Area that impacts vacant land containing Habitat for Covered Species and/or conserved natural communities, including small vacant lots within urban areas that contain natural open space, and to transmit collected fees to CVCC at least quarterly and prior to impacts to Covered Species and their Habitats. To document the City's obligation to impose and transmit a Local Development Mitigation Fee for the Project, CDFW recommends the City add the following mitigation measure to a revised MND:

Mitigation Measure BIO-[C]: CVMSHCP Compliance

Prior to construction and issuance of any grading permit, the City shall ensure compliance with the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) and its associated Implementing Agreement and shall ensure the collection of payment of the CVMSHCP Local Development Mitigation Fee and transfer of revenues to the Coachella Valley Conservation Commission.

Response #11

The ISMND does indicate the Project occurs within the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) plan area and is subject to provisions and policies of the CVMSHCP. No mitigation measure is required given that all development impact fees will be collected as part of the city's normal entitlement and building permit process.

Comment #12 Landscaping

Page 84 the MND states that "drought tolerant landscaping will be planted throughout the project site." CDFW recommends that the MND include recommendations regarding landscaping from Section 4.0 of the CVMSHCP "Table 4-112: Coachella Valley Native Plants Recommended for Landscaping" (pp. 4-180 to 4-182; https://cvmshcp.org/plandocuments/). CDFW also recommends incorporation of water-wise concepts in any Project landscape design plans. In particular, CDFW recommends xeriscaping with locally native California species and installing water-efficient and targeted irrigation systems (such as drip irrigation). Native plants support butterflies, birds, reptiles, amphibians, small mammals, bees, and other pollinators that evolved with those plants. More information on native plants suitable for the Project location and nearby nurseries is available at Calscape: https://calscape.org/. Local water agencies/cities and resource conservation cities in your area may be able to provide information on plant nurseries that carry locally native species, and some facilities display drought-tolerant locally native species demonstration gardens. Information on drought-tolerant landscaping and water-efficient irrigation systems is available on California's Save our Water website: https://saveourwater.com/.

Response #12

The comment is noted for the record. The proposed project is a "subdivision" project at this time No specific development plan or landscape plan has been prepared at this time. Future landscaping will require City and Coachella Valley Water District approval and must comply with water efficient standards and the water district's water conservation requirements.

Comment #13 Environmental Data

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

Response #13

The comment is noted for the record.

Comment #14 Environmental Document Filing Fees

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

Response #14

The comment is noted for the record.

Comment #15 Conclusion

CDFW appreciates the opportunity to comment on the MND to assist the City in identifying and mitigating Project impacts to biological resources. CDFW concludes that the MND does not adequately identify or mitigate the Project's significant, or potentially significant, impacts to biological resources. CDFW recommends that additional mitigation measures and analysis as described in this letter be added to a revised MND. CDFW personnel are available for consultation regarding biological resources and strategies to avoid and minimize impacts. Questions regarding this letter or further coordination should be directed to Jacob Skaggs, Senior Environmental Scientist Specialist, at jacob.skaggs@wildlife.ca.gov.

Response #15

The comment is noted for the record.

3. REVISIONS TO THE MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

Table 13 Mitigation Monitoring and Reporting Program

Mitigation Measure	Responsible Agency	Timing	Verification (Date and Initials)
AESTHETICS			
No Mitigation was required.			
AGRICULTURAL RESOURCES			
No Mitigation was required.			
AIR QUALITY			
No Mitigation was required.			

BIOLOGICAL RESOURCES			
Biological Resources Mitigation Measure No. 1. **Nesting bird surveys shall be performed by a qualified avian biologist no more than 3 days prior to vegetation removal or ground-disturbing activities. Pre-construction surveys shall focus on both direct and indirect evidence of nesting, including nest locations and nesting behavior. The qualified avian biologist will make every effort to avoid potential nest predation as a result of survey and monitoring efforts. If active nests are found during the preconstruction nesting bird surveys, a qualified biologist shall establish an appropriate nest buffer to be marked on the ground. Nest buffers are species specific and shall be at least 300 feet for passerines and 500 feet for raptors. A smaller or larger buffer may be determined by the qualified biologist familiar with the nesting phenology of the nesting species and based on nest and buffer monitoring results. Construction activities may not occur inside the established buffers, which shall remain on-site until a qualified biologist determines the young have fledged or the nest is no longer active. Active nests and adequacy of the established buffer distance shall be monitored daily by the qualified biologist until the qualified biologist has determined the young have fledged or the Project has been completed. The qualified biologist has the authority to stop work if nesting pairs exhibit signs of disturbance.**	Project Developer Qualified Biologist City of Rancho Mirage	Prior to commencement of Construction	
Biological Resources Mitigation Measure No. 2. **Prior to Project construction activities, a thorough, recent, floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (see** https://wildlife.ca.gov/Conservation/Plants) **shall be performed by a qualified biologist. Should any state-listed plant species (excluding CVMSHCP Covered Species) be present in the Project area, the Project proponent shall obtain appropriate California Endangered Species Act (CESA) authorization for those species prior to the start of Project activities. Should any species of native plants designated as rare, threatened, or endangered by state law (excluding CVMSHCP Covered Species) be present in the Project area, on-site or off-site habitat restoration (whichever is applicable) and/or enhancement and preservation should be evaluated and discussed in detail. Where habitat preservation is not available on-site, off-site land acquisition, management, and preservation should be evaluated.**	Project Developer Qualified Biologist City of Rancho Mirage	Prior to commencement of Construction	
Biological Resources Mitigation Measure No. 3. Pre-construction burrowing owl surveys shall be conducted no less than 14 days prior to the start of Project-related activities and within 24 hours prior to ground disturbance, in accordance with the Staff Report on Burrowing Owl Mitigation (CDFG 2012 or most recent version). Pre-construction surveys shall be performed by a qualified biologist following the recommendations and guidelines provided in the Staff Report on Burrowing Owl Mitigation. If the pre-construction surveys confirm occupied burrowing owl habitat, Project activities shall be immediately halted. The qualified biologist shall coordinate with the California Department of Fish & Wildlife (CDFW) and United State Fish & Wildlife Service (USFWS) to conduct an impact assessment to develop avoidance and minimization measures to be approved by CDFW prior to commencing Project activities.	**Project Developer Qualified Biologist City of Rancho Mirage**	**Project Proponent shall provide the City with pre-construction surveys prior to the issuance of any permit to allow ground disturbance.**	
CULTURAL RESOURCES			
No Mitigation was required.			

GEOLOGY AND SOILS			
No Mitigation was required.			
GREENHOUSE GAS EMISSIONS			
No Mitigation was required.			
HAZARDS AND HAZARDOUS MATERIALS			
No Mitigation was required.			
HYDROLOGY AND WATER QUALITY			
No Mitigation was required.			
LAND USE AND PLANNING			
No Mitigation was required.			
MINERAL RESOURCES			
No Mitigation was required.			
NOISE			
No Mitigation was required.			
POPULATION AND HOUSING			
No Mitigation was required.			
PUBLIC SERVICES			
No Mitigation was required.			
RECREATION			
No Mitigation was required.			
TRANSPORTATION/TRAFFIC			
No Mitigation was required.			
TRIBAL CULTURAL RESOURCES			
Tribal Cultural Resources Mitigation Measure No. 1. The Agua Caliente Band of Cahuilla Indians must be notified a minimum of 30 days prior to any earth-moving activities including grading, grubbing, trenching, or excavations at the site. All earth-moving activities including grading, grubbing, trenching, or excavations at the site shall be monitored by a qualified archaeologist and/or approved Agua Caliente Native American Cultural Resource Monitor(s).	Project Developer Cultural Monitor City of Rancho Mirage	Prior to commencement of Construction	
Tribal Cultural Resources Mitigation Measure No. 2. A qualified archaeologist and approved Agua Caliente Native American Cultural Resource Monitor(s) shall provide preconstruction training for all earthmoving construction personnel prior to the start of any ground-disturbing activities, regarding how to recognize the types of Tribal Cultural Resources and/or archaeological resources that may be encountered and to instruct personnel about actions to be taken in the event of a discovery. Should cultural materials be discovered, they shall be recorded and evaluated in the field. The monitors shall be prepared to recover artifacts to avoid construction delays but must have the power to temporarily halt or divert construction equipment to allow for controlled archaeological recovery if a substantial cultural deposit is encountered. If artifacts are discovered, these shall be cataloged and analyzed. The archaeologist and monitor, in discussion with the Tribal Historic Preservation Office, shall determine and implement the best course of action for the treatment and disposition of the artifacts.	Project Developer Cultural Monitor City of Rancho Mirage	During the Project's construction phase	
Tribal Cultural Resources Mitigation Measure No. 3. In the unexpected event human remains are uncovered during construction	Project Developer Cultural Monitor	During the Project's construction phase	

activities, all construction work taking place within the vicinity of the discovered remains must cease and the necessary steps to ensure the integrity of the immediate area must be taken. The County Coroner must be notified within 24 hours of the discovery of human remains. If the remains discovered are determined by the Coroner to be of Native American descent, the Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC would in turn contact the Most Likely Descendant (MLD) would determine further action to be taken. The MLD would have 48 hours to access the site and make a recommendation regarding disposition of the remains.	City of Rancho Mirage		
UTILITIES AND SERVICE SYSTEMS			
No Mitigation was required.			
Wildfire			
No Mitigation was required.			

ATTACHMENT 5

CITY OF RANCHO MIRAGE ©

DEVELOPMENT SERVICES DEPARTMENT
69-825 Highway 111 ● Rancho Mirage, CA 92270
Planning@RanchoMirageCA.gov ● (760) 328-2266

NOTICE OF DETERMINATION AND MITIGATED NEGATIVE DECLARATION

To: ☒ Office of Land Use and Climate Innovation
1400 Tenth Street
Sacramento, CA 95814

☒ Riverside County Clerk
P.O. Box 751
Riverside, CA 92501

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse (SCH) Number: 2025070800
Project Title/Case No.: Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) ("Project")
Project Applicant: Phillip Fomotor
Project Location: North of the intersection of Mirage Cove Drive and Peterson Road. Assessor's Parcel Numbers: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022
Project Description: Consideration to subdivide eight (8) parcels totaling 19.81 acres into sixteen (16) residential lots. Phase 1 includes the subdivision of three (3) southern parcels into eight (8) lots, identified as Lots 6, 7, 8, 9, 13, 14, 15, and 16. Phase 2 includes the subdivision of five (5) northern parcels into eight (8) lots, identified as Lots 1, 2, 3, 4, 5, 10, 11, and 12. The project site is currently vacant and has a zoning designation of Residential Estate (R-E). A Minor Variance is proposed to consider a .98-acre size for two parcels; all other parcels will range in size from 1 acre to 1.55 acres. No single-family residence architectural plans are proposed as part of this project.

This is to advise that the lead agency, City of Rancho Mirage, has approved the above described project on _____ and has made the following determinations regarding the above described project.

1. The project ☐ will ☒ will not have a significant effect on the environment.
2. ☐ An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
   ☒ A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures ☒ were ☐ were not made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan ☒ was ☐ was not adopted for this project.
5. A Statement of Overriding Considerations ☐ was ☒ was not adopted for this project.
6. Findings ☒ were ☐ were not made pursuant to the provisions of CEQA.

The City Council adopted the following Finding: The proposed project has been reviewed in compliance with the provisions of the California Environmental Quality Act (CEQA). This is to certify that the Mitigated Negative Declaration with comments and responses and record of project approval is available to the General Public at: City of Rancho Mirage, 69-825 Highway 111, Rancho Mirage, CA 92270.

Mitigated Negative Declaration – Rancho Mirage City Council

Date: _____

_____
Ben Torres, Planning Manager

I hereby certify that the City of Rancho Mirage has made the above findings of fact and that based upon the Mitigated Negative Declaration and hearing record the project will not have a significant effect on the environment.

Date: _____

_____
Ben Torres, Planning Manager

DRAFT

ATTACHMENT 6

Chair Chanter
Vice Chair Bryant
Commissioner Agostini
Commissioner Beale
Commissioner Grey

REGULAR PLANNING COMMISSION MEETING

69-825 Highway 111, Rancho Mirage, CA 92270

Thursday, October 9, 2025, 2:00 PM

DRAFT MINUTES

1. GENERAL

1.A. CALL TO ORDER

Chair Chanter called the meeting to order at 2:00 P.M.

1.B. FLAG SALUTE

Commissioner Agostini led the flag salute.

1.C. ROLL CALL - Agostini, Beale, Grey, Bryant, Chanter

Present: Agostini, Beale, Bryant, Chanter.

Absent: Grey.

MOVED/SECONDED BY AGOSTINI/BEALE TO EXCUSE COMMISSIONER GREY'S ABSENCE. MOTION CARRIED 4/0.

2. COMMISSIONER COMMENTS

Commissioner Agostini thanked the City and staff for honoring G. Dana Hobart, former Rancho Mirage City Council Member, and highlighted his contributions to the City and community.

Vice Chair Bryant reflected on the passing of G. Dana Hobart, calling it a somber time for Rancho Mirage. He praised Mr. Hobart's intelligence, leadership, and integrity, recalling his own appointment to the Planning Commission by Mr. Hobart in 2018 and the four guiding principles Mr. Hobart shared with him. Vice Chair Bryant highlighted Mr. Hobart's long tenure in public service and dedication to the City.

Chair Chanter agreed with Vice Chair Bryant's remarks, calling them fine words about a valuable man to the community.

3. APPROVAL OF MINUTES

3.A. September 25, 2025, Regular Planning Commission Meeting Minutes

—RECOMMENDED ACTION: Approve the September 25, 2025, Regular Planning Commission Meeting Minutes as presented.

The following individual provided public comments: Brad Anderson.

MOVED/SECONDED BY BEALE/AGOSTINI TO APPROVE THE SEPTEMBER 25, 2025, REGULAR PLANNING COMMISSION MEETING MINUTES AS PRESENTED. MOTION CARRIED 4/0.

4. PUBLIC HEARINGS

4.A. Environmental Assessment Case No. EA23-0003, Variance Case No. VAR24-0002, and Tentative Tract Map Case No. TTM23-0001 (TTM 38636) – Applicant: Farhad Zomorodi. Consideration of a 9-Lot Residential Subdivision on 5.04 Gross Acres. The Project Requests Approval of a Variance to the Very Low Density Residential (R-L-2) Minimum Required Lot Size From 18,000 Sq. Ft. to 16,000 Sq. Ft. Located at 72094 Ginger Rogers Road (APN: 685-080-002)

Joy Tsai, Senior Planner, presented the staff report.

The following individual provided public comments: Brad Anderson.

A discussion ensued.

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS: 1) APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025051428) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA23-0003; AND, 2) APPROVE VARIANCE CASE NO. VAR24-0002; AND, 3) APPROVE TENTATIVE TRACT MAP CASE NO. TTM23-0001 (TTM 38636), SUBJECT TO THE CONDITIONS OF APPROVAL, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF REPORT. MOTION CARRIED 4/0.

4.B. Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971) – Applicant: Phillip Fomotor. Consideration of a 16-Lot Residential Subdivision on 19.81 Gross Acres. The Project Requests Approval of a Minor Variance to the Residential Estate (R-E) Minimum Required Lot Size of 1 Acre to .98 Acre for Two Lots. North of the Intersection of Mirage Cove Drive and Peterson Road (APN's: 689-090-003, 689-130-004, -005, -013, -014, -017, -018, & 689-140-022)

Vice Chair Bryant recused himself, due to the proximity of his residence to the subject project.

The meeting was recessed at 2:24 P.M. and Vice Chair Bryant left the Council Chamber. The meeting was reconvened at 2:30 P.M., with Commissioner Agostini, Commissioner Beale, and Chair Chanter present.

Ben Torres, Planning Manager, presented the staff report. He recommended inclusion of the following three (3) additional conditions of approval:

- As determined to be feasible by the City Engineer curb and gutter shall be installed along the project frontage on Nielson Road and Peterson Road with the curb face at a width to be determined during plan check.
- Existing tamarisk trees on the project site shall be removed within 6 months from a final determination on the proposed project by the City Council.
- The ultimate roadway width as determined by the City Engineer shall be installed by the applicant on Peterson Road fronting the following addresses: 38841, 38785, & 38775 Peterson Road.

The following individuals provided public testimony: Kay Williams, Toni Ringlein, Janeen Bahr, and Vicki Petersen.

Phillip Fomotor, applicant, spoke regarding the project and answered questions posed by the Planning Commission.

A discussion ensued.

Stephan Longoria, City Engineer, answered questions posed by the Planning Commission.

MOVED/SECONDED BY BEALE/AGOSTINI TO RECOMMEND THAT THE CITY COUNCIL TAKE THE FOLLOWING ACTIONS: 1) APPROVE THE FILING OF A MITIGATED NEGATIVE DECLARATION (SCH# 2025070800) BASED ON ENVIRONMENTAL ASSESSMENT CASE NO. EA24-0009; 2) APPROVE MINOR VARIANCE CASE NO. VAR24- 0005; 3) APPROVE TENTATIVE TRACT MAP CASE NO. TTM24-0003 (TTM 38971), SUBJECT TO THE CONDITIONS OF APPROVAL WITH THE ADDED CONDITIONS, AND BASED ON THE CONTENT AND FINDINGS IN THE STAFF

REPORT; 4) DIRECT STAFF TO LOOK INTO EQUESTRIAN TRAIL INCLUSION; AND 5) ADD THE FOLLOWING THREE (3) CONDITIONS OF APPROVAL:

- **AS DETERMINED TO BE FEASIBLE BY THE CITY ENGINEER CURB AND GUTTER SHALL BE INSTALLED ALONG THE PROJECT FRONTAGE ON NIELSON ROAD AND PETERSON ROAD WITH THE CURB FACE AT A WIDTH TO BE DETERMINED DURING PLAN CHECK.**
- **EXISTING TAMARISK TREES ON THE PROJECT SITE SHALL BE REMOVED WITHIN 6 MONTHS FROM A FINAL DETERMINATION ON THE PROPOSED PROJECT BY THE CITY COUNCIL.**
- **THE ULTIMATE ROADWAY WIDTH AS DETERMINED BY THE CITY ENGINEER SHALL BE INSTALLED BY THE APPLICANT ON PETERSON ROAD FRONTING THE FOLLOWING ADDRESSES: 38841, 38785, & 38775 PETERSON ROAD.**

MOTION CARRIED 3/0 (VICE CHAIR BRYANT RECUSED).

The meeting was recessed at 3:01 P.M. and Vice Chair Bryant returned to the Council Chamber. The meeting was reconvened at 3:03 P.M. with all four Planning Commissioners present.

5. NON-AGENDA PUBLIC COMMENTS

The following individual provided non-agenda public comments: Vicki Petersen.

6. ADJOURNMENT

Chair Chanter adjourned the meeting at 3:04 P.M.

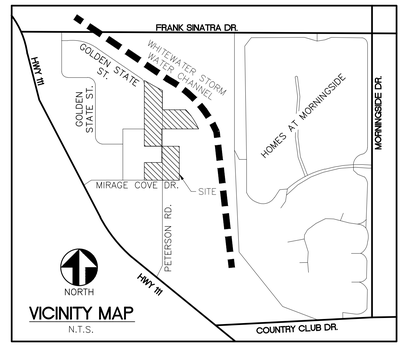
Date Approved by Planning Commission:

TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FOMOTOR ENGINEERING — APRIL 2024

ATTACHMENT 7



VICINITY MAP
N.T.S.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF RANCHO MIRAGE IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1:
THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM 1/16TH OF ALL COAL, OIL, GAS, AND OTHER MINERAL DEPOSITS IN SAID LAND, RESERVED IN PATENT FROM THE STATE OF CALIFORNIA, RECORDED DECEMBER 03, 1923 IN
BOOK 8, PAGE 398 OF PATENTS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

(APN 689-130-014)

PARCEL 2:
THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN.

(APN 689-130-017; APN 689-130-018)

PARCEL 3:
THAT PORTION OF THE NORTHERLY 247.50 FEET OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND
MERIDIAN, ACCORDING TO UNITED STATES GOVERNMENT SURVEY THEREOF, LYING WESTERLY OF THE WESTERLY LINE OF THE COACHELLA VALLEY STORM WATER CHANNEL.

(APN 689-130-004)

PARCEL 3A:
A NON-EXCLUSIVE EASEMENT FOR ROAD AND PUBLIC UTILITIES, OVER THE WESTERLY 15 FEET OF THE SOUTH HALF OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST
QUARTER, AND THE WESTERLY 15 FEET OF THE WEST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER, AND THE EASTERLY 15 FEET OF SOUTHEAST
QUARTER OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, AND THE EASTERLY 15 FEET OF THE SOUTHEAST QUARTER OF THE SOUTHEAST
QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER IN SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN,
ACCORDING TO UNITED STATES
GOVERNMENT SURVEY THEREOF.

PARCEL 4:
THAT PORTION OF THE NORTH HALF OF THE NORTH HALF QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN
BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT 247.50 FEET SOUTH OF THE NORTHWEST CORNER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5, RANGE 5 EAST SAN
BERNARDINO MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF; THENCE CONTINUING SOUTH 00°04'50" EAST TO THE SOUTHWEST CORNER OF THE SOUTH HALF OF THE NORTH HALF OF THE
NORTH HALF OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2; THENCE EASTERLY AND PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST QUARTER OF THE
NORTHWEST QUARTER OF SAID SECTION 2, TO THE WESTERLY BOUNDARY LINE OF THE COACHELLA VALLEY STORM WATER CANAL; THENCE NORTHWESTERLY ON THE WESTERLY BOUNDARY LINE OF
THE COACHELLA VALLEY STORM WATER CANAL TO A POINT 247.50 FEET SOUTH OF THE NORTH BOUNDARY LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2,
WHEN MEASURED ON A LINE PARALLEL WITH THE EASTERLY LINE OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID
SECTION 2; THENCE WESTERLY
AND PARALLEL WITH THE NORTH LINE OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 2, TO THE POINT OF BEGINNING.

(APN 689-130-005)

PARCEL 5:
THE EASTERLY RECTANGULAR 330.79 FEET OF GOVERNMENT LOT 4, SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, LYING SOUTHERLY OF THE SOUTH RIGHT OF WAY OF THE COACHELLA VALLEY STORM WATER CHANNEL.

(APN 689-090-003)

PARCEL 6:
THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE
AND MERIDIAN, IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA.

EXCEPTING THEREFROM THE WESTERLY 15 FEET.

ALSO EXCEPTING THEREFROM, 1/16TH OF ALL COAL, OIL, GAS, AND OTHER MINERAL DEPOSITS CONTAINED IN SAID LAND, AS RESERVED TO THE STATE OF CALIFORNIA IN THE PATENT RECORDED
DECEMBER 03, 1923 IN BOOK 8, PAGE 398 OF PATENTS, RIVERSIDE COUNTY RECORDS.

(APN 689-140-022)

PARCEL 7:
PARCEL A, IN THE CITY OF RANCHO MIRAGE, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN ON EXHIBIT "A" ATTACHED TO CERTIFICATE OF COMPLIANCE RECORDED SEPTEMBER 30,
1997 AS INSTRUMENT NO. 355737 OF OFFICIAL RECORDS OF RIVERSIDE COUNTY, CALIFORNIA. WEST ½ OF THE SOUTHWEST ¼ OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 2,
TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM ONE-SIXTEENTH OF ALL COAL, OIL, GAS, AND MINERAL DEPOSITS IN SAID LAND RESERVED IN PATENT FROM THE STATE OF CALIFORNIA, RECORDED DECEMBER 03, 1923 IN
BOOK 8, PAGE 398 OF PATENTS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

(APN 689-130-013)

EASEMENT NOTES

1. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

3. RIGHTS OF THE PUBLIC IN AND TO ANY PORTION OF SAID LAND, LYING WITHIN ANY LAWFULLY ESTABLISHED STREETS, ROADS, OR HIGHWAYS.

4. ANY RIGHT, TITLE, AND INTEREST OF THE STATE OF CALIFORNIA, IN AND TO ALL COAL, OIL, OILSHALE, GAS, PHOSPHATE, SODIUM, AND OTHER MINERAL DEPOSITS UNDER THE PROVISIONS OF CHAPTER 303, STATUTES OF 1921, EXCEPT AS TO A 15/16THS OF ALL OIL AND GAS RESERVED IN PATENT RECORDED DECEMBER 03, 1923 IN BOOK 8, PAGE 398 OF PATENTS.

5. ANY RIGHT, TITLE, AND INTEREST OF THE STATE OF CALIFORNIA, IN AND TO ALL COAL, OIL, OILSHALE, GAS PHOSPHATE, SODIUM, AND OTHER MINERAL DEPOSITS, UNDER THE PROVISIONS OF CHAPTER 303, STATUTES OF 1921, EXCEPT AS TO 15/16THS OF ALL OIL AND GAS.

△6 6. EASEMENT IN FAVOR OF HARVEY E. PETERSON AND EDNA P. PETERSON FOR ROAD PURPOSES RECORDED APRIL 23, 1947 IN BOOK 832, PAGE 53 O.R. AFFECTS PARCELS 1 AND 6.

△7 7. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR UTILITIES PURPOSES RECORDED MARCH 23, 1948 IN BOOK 899, PAGE 277 O.R. AFFECTS PARCEL 6. (CENTERLINE OF UNDISCLOSED WIDTH)

△8 8. EASEMENT IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR THE TRANSMISSION OF ELECTRIC ENERGY PURPOSES RECORDED JANUARY 26, 1949 IN BOOK 1047, PAGE 72 O.R.
AFFECTS: PARCELS 2 AND 5

△9 9. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR THE TRANSMISSION OF ELECTRIC ENERGY PURPOSES RECORDED APRIL 25, 1950 IN BOOK 1167, PAGE 229 O.R.
AFFECTS: PARCELS 1, 2, AND 5. (CENTERLINE OF UNDISCLOSED WIDTH)

10. MATTERS CONTAINED IN THAT CERTAIN DOCUMENT ENTITLED "AGREEMENT" RECORDED AUGUST 10, 1950 IN BOOK 1196, PAGE 186 O.R.

△11 11. EASEMENTS FOR FLOOD CONTROL PURPOSES RECORDED APRIL 11, 1951 IN BOOK 1261, PAGE 183 O.R. AFFECTS: PARCELS 2, 4, AND 5

△12 12. EASEMENTS IN FAVOR OF CALIFORNIA ELECTRIC POWER COMPANY FOR UTILITIES PURPOSES RECORDED NOVEMBER 30, 1951 IN BOOK 1323, PAGE 415 O.R.
AFFECTS: PARCEL 6 (CENTERLINE OF UNDISCLOSED WIDTH)

13. EASEMENTS IN FAVOR OF FLOYD ALTON GILES FOR UNDERGROUND PIPELINES PURPOSES, RECORDED NOVEMBER 13, 1958 IN BOOK 2363, PAGE 7 O.R.
LOCATED FROM THE WELL PUMPING PLANT TO THE NORTH LINE OF SAID LAND.
AFFECTS: PARCELS 2, 3, 4, 5, AND 6
(THE LOCATION CANNOT BE DETERMINED FROM THE RECORD DOCUMENT)

△14 14. EASEMENTS FOR ROAD AND PUBLIC UTILITIES PURPOSES RECORDED JUNE 22, 1959 AS INSTRUMENT NO. 53997 O.R., ALSO RECORDED JUNE 22, 1959 AS INSTRUMENT NO. 53998 O.R.

△15 15. EASEMENTS IN FAVOR OF FLOYD A. GILES FOR UNDERGROUND PIPELINES PURPOSES RECORDED NOVEMBER 09, 1959 AS INSTRUMENT NO. 95489 O.R.

△16 16. EASEMENTS IN FAVOR OF GENERAL TELEPHONE COMPANY OF CALIFORNIA FOR THE TRANSMISSION OF ELECTRIC ENERGY FOR COMMUNICATION PURPOSES RECORDED OCTOBER 31, 1980 AS INSTRUMENT NO. 203643 O.R.

△17 17. EASEMENTS IN FAVOR OF GENERAL TELEPHONE COMPANY OF CALIFORNIA FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 15, 1981 AS INSTRUMENT NO. 7907 O.R.

18. DOCUMENT RECORDED MAY 01, 1981 IN 79588 O.R.
(IT IS NOT ON, OR DOES NOT TOUCH, THE SURVEYED PROPERTY)

△19 19. EASEMENTS IN FAVOR OF: THE CITY OF RANCHO MIRAGE FOR FLOOD CONTROL FACILITIES PURPOSES RECORDED MARCH 30, 1983 AS INSTRUMENT NO. 59319 O.R.

△20 20. EASEMENTS IN FAVOR OF: THE CITY OF RANCHO MIRAGE FOR STORM WATER CONTROL FACILITIES PURPOSES RECORDED AUGUST 03, 1984 AS INSTRUMENT NO. 169692 O.R.

21. THE LAND DESCRIBED HEREIN IS INCLUDED WITHIN A PROJECT AREA OF THE REDEVELOPMENT AGENCY SHOWN BELOW, AND THAT PROCEEDINGS FOR THE REDEVELOPMENT OF SAID PROJECT HAVE BEEN INSTITUTED UNDER THE REDEVELOPMENT LAW (SUCH REDEVELOPMENT TO PROCEED ONLY AFTER THE ADOPTION OF THE REDEVELOPMENT PLAN) AS DISCLOSED BY A DOCUMENT.
REDEVELOPMENT AGENCY: RANCHO MIRAGE REDEVELOPMENT AGENCY
RECORDING DATE: FEBRUARY 27, 2004
RECORDING NO: 2004-0134828 OF OFFICIAL RECORDS

△22 22. EASEMENTS IN FAVOR OF: SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO. 2009-0017714 O.R.

△23 23. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017715 O.R.

△24 24. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017716 O.R.

△25 25. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017717 O.R.

△26 26. EASEMENTS IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY AND VERIZON CALIFORNIA INC. FOR PUBLIC UTILITIES PURPOSES RECORDED JANUARY 14, 2009 AS INSTRUMENT NO: 2009-0017718 O.R.

31. ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.

OWNER/APPLICANT

HORTI CAESARIS LLC.
9401 WILSHIRE BLVD. 12TH FLOOR
BEVERLY HILLS, CA 90212-2928

CONTACT:
KONSTANTINOS PATIS
CICD LAX
OFFICE: +302108128242
MOBILE: +306947378121
KPATIS@CENTRALICD.CH

VANJA HABEKOVIC
ERVIN COHEN & JESSUP LLP.
OFFICE: (310) 281-6377
FAX: (310) 877-6816

ENGINEER/SURVEYROR

FOMOTOR ENGINEERING
225. S. CIVIC DR. SUIT 1-5
PALM SPRINGS, CA 92262
PHILLIP FOMOTOR, CIVIL ENGINEER
EMAIL: SURVEY@FOMOTOR.COM
TEL: (760) 323-1842

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTER SECTION LINE OF SECTION 2, BEING N00°10'53"W PER RS 152/51.

FEMA ZONE

ZONE X (0.2% ANNUAL CHANCE FLOOD HAZARD OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREA OF LESS THAN ONE SQUARE MILE) PER FEMA MAP NO. 06065C1595G EFFECTIVE 08/28/2008.

ASSESSOR PARCEL NUMBER(S)

689-090-003, 689-130-004, 689-130-005, 689-130-013, 689-130-014, 689-130-017, 689-130-018, 689-140-022

EXISTING ZONING

RESIDENTIAL – ESTATE (R-E)
OPEN SPACE – FLOODWAYS & DRAINAGE CHANNELS (OS-W)

PROPOSED ZONING

RESIDENTIAL – ESTATE (RE)

BUILDING SETBACK

FRONT – 25'
REAR – 25'
SIDE (INTERIOR) – 10'
SIDE (STREET) – 15'

SCHOOL DISTRICT

RANCHO MIRAGE SCHOOL DISTRICT

LOT TABULATION

NO.	TYPE	GROSS ACRES
LOT(S) 1-16	RESIDENTIAL LOTS	17.72 AC.
LOT A	PUBLIC STREET	1.33 AC.
LOT B	PUBLIC STREET	0.70 AC.
LOT C	PUBLIC STREET	0.06 AC.
TOTAL:	19.81 AC.	

UTILITIES:

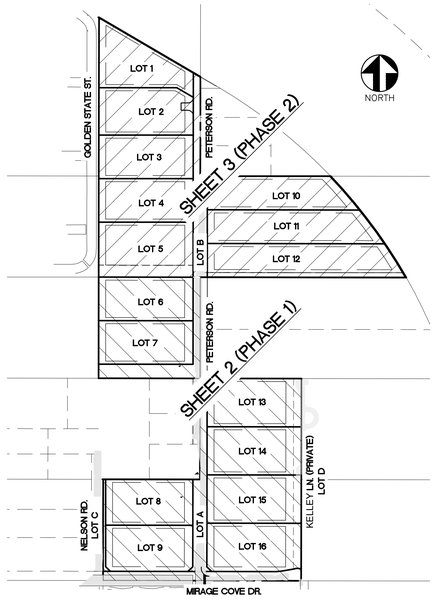
ELECTRIC: SOUTHERN CALIFORNIA EDISON
6999 OLD WOMAN SPRING RD.
YUCCA VALLEY, CA 92284
(760) 369-5413

WATER/SEWER: COACHELLA VALLEY WATER DISTRICT
51501 TYLER ST.
COACHELLA, CA 92236
(760) 398-2651

GAS: SOCAL GAS
PO BOX 1626
MONTEREY PARK, CA 91754-8626
(909) 305-8261

TELEPHONE: FRONTIER
1980 ORANGE TREE LN. STE 210
REDLANDS, CA 92374
(951) 992-1715

CABLE: CCI SYSTEMS (SPECTRUM)
105 KENT ST.
IRON MOUNTAIN, MI 49801
(800) 338-9299



INDEX MAP
SCALE 1"= 200'

DATE: 11/21/2024

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL — REGISTERED PROFESSIONAL ENGINEER — PHILLIP K FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

TRACT MAP NO. 38971
OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR BEVERLY HILLS, CA 90212-2928
SITE: PETERSON RD. RANCHO MIRAGE, CA 92270

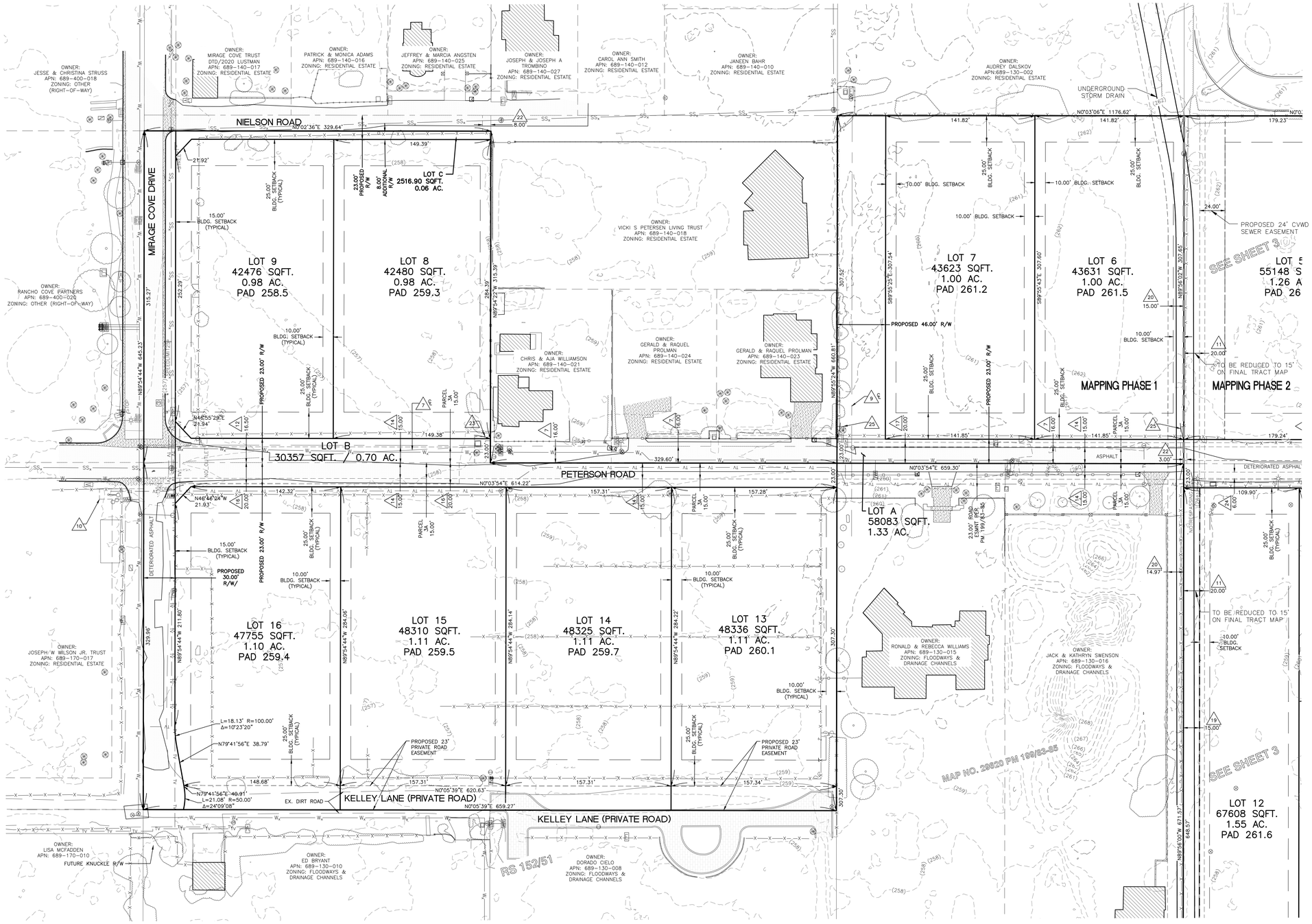
PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

SHEET 1 OF 5 SHEETS

JN22106

LEGEND:

- ELECTRIC BOX
- GUY WIRE
- SIGN
- TELEPHONE PEDESTAL
- UTILITY POLE
- TELEPHONE BOX
- TV BOX
- UTILITY BOX
- GAS METER
- MAILBOX
- WATER VALVE
- PIV PRESSURE INDICATOR VALVE
- STREET LIGHT
- UTILITY RISER
- WM WATER METER
- E ELECTRICAL MANHOLE
- BUILDING
- CONCRETE
- WATER BACKFLOW PREVENTER
- TEL TELEPHONE MANHOLE
- V TELECOM STRUCTURE
- FIRE HYDRANT
- SD STORM DRAIN MANHOLE
- MH STORM DRAIN MANHOLE
- IRRIGATION VALVE
- GRATE
- E OVERHEAD UTILITY LINES
- TRACT BOUNDARY LINE
- LOT LINE / RIGHT OF WAY (RW)
- CENTERLINE
- BUILDING SETBACK LINE
- EASEMENT
- W WATER LINE
- TEL TELECOM LINE
- UE UNDERGROUND ELECTRIC LINE
- G GAS LINE
- TV CABLE LINE
- X FENCE
- SS SANITARY SEWER LINE
- SD STORM DRAIN LINE



NORTH

0 40' 80' 120' 160'

SCALE 1"= 40'

DATE: 11/21/2024

DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL — REGISTERED PROFESSIONAL ENGINEER — PHILLIP K FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

TRACT MAP NO. 38971

OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR BEVERLY HILLS, CA 90212-2928

SITE: PETERSON RD. RANCHO MIRAGE, CA 92270

PREPARED BY:

FOMOTOR ENGINEERING

225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

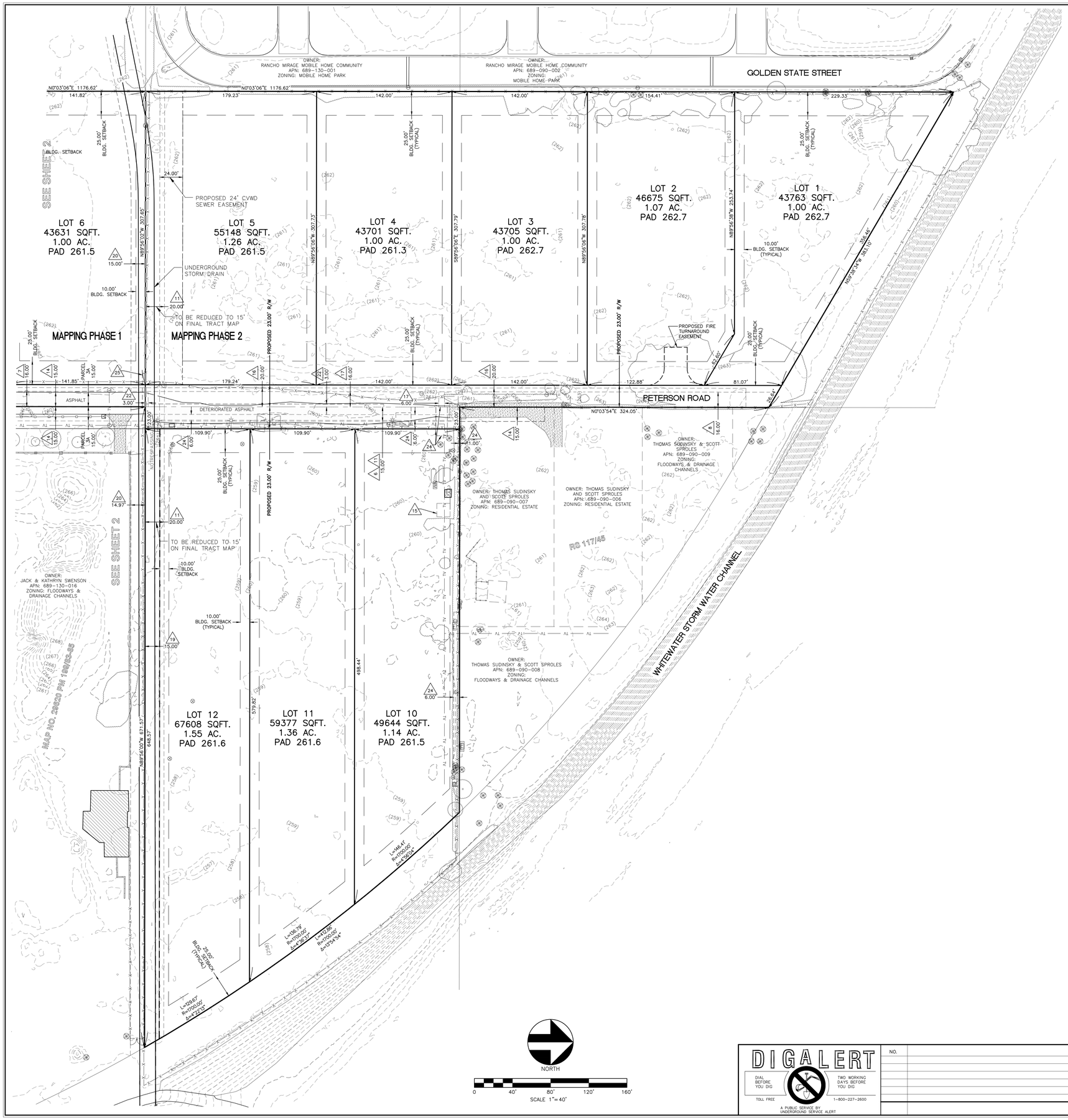
SHEET 2 OF 5 SHEETS

JN22106

TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FOMOTOR ENGINEERING — APRIL 2024



DIGALERT — DIAL BEFORE YOU DIG — TWO WORKING DAYS BEFORE YOU DIG — TOLL FREE 1-800-227-2600 — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL: REGISTERED PROFESSIONAL ENGINEER — WILLIS K. FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

DATE: 11/21/2024

TRACT MAP NO. 38971

OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR BEVERLY HILLS, CA 90212-2928

SITE: PETERSON RD. RANCHO MIRAGE, CA 92270

PREPARED BY:

FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

SHEET 3 OF 5 SHEETS

JN22106

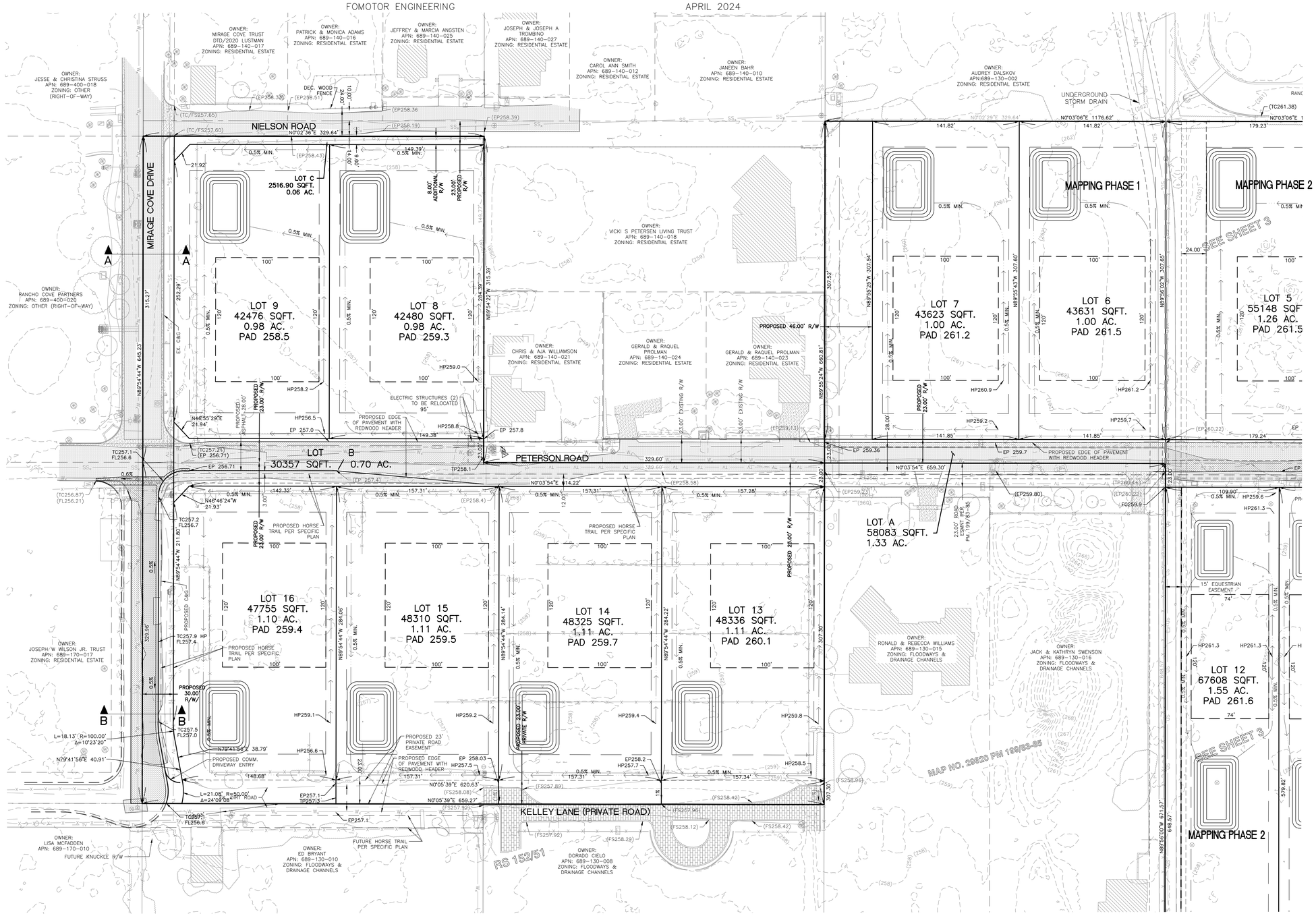
PRELIMINARY GRADING PLAN
TENTATIVE TRACT MAP NO. 38971

A PORTION OF THE NW QUARTER OF SECTION 2, TOWNSHIP 5 SOUTH, RANGE 5 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

FOMOTOR ENGINEERING — APRIL 2024

LEGEND:

- ELECTRIC BOX
- GUY WIRE
- SIGN
- TELEPHONE PEDESTAL
- UTILITY POLE
- TELEPHONE BOX
- TV BOX
- UTILITY BOX
- GAS METER
- MAILBOX
- WATER VALVE
- PRESSURE INDICATOR VALVE
- STREET LIGHT
- UTILITY RISER
- WATER METER
- ELECTRICAL MANHOLE
- BUILDING
- CONCRETE
- WATER BACKFLOW PREVENTER
- TELEPHONE MANHOLE
- TELECOM STRUCTURE
- FIRE HYDRANT
- STORM DRAIN MANHOLE
- STORM DRAIN MANHOLE
- IRRIGATION VALVE
- GRATE
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- EASEMENT
- WATER LINE
- TELECOM LINE
- UNDERGROUND ELECTRIC LINE
- GAS LINE
- CABLE LINE
- FENCE
- SANITARY SEWER LINE
- STORM DRAIN LINE



NORTH

0 40' 80' 120' 160'

SCALE 1"=40'

DATE: 11/21/2024

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NO.		APPROVED	DATE
		DRAWN BY:	DATE:

SEAL: REGISTERED PROFESSIONAL ENGINEER — PHILLIP K FOMOTOR — No. 47284 — CIVIL — STATE OF CALIFORNIA

PRELIMINARY GRADING PLAN
TRACT MAP NO. 38971

OWNER: HORTI CAESARIS LLC
PH. +30(210)812-8242
MAILING: 9401 WILSHIRE BLVD. 12TH FLOOR BEVERLY HILLS, CA 90212-2928

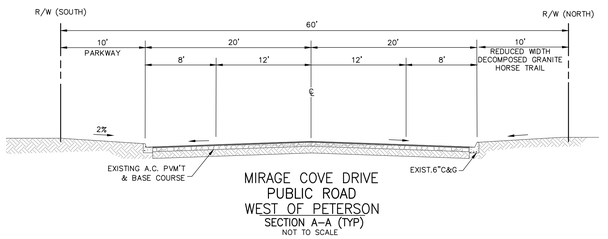
SITE: PETERSON RD. RANCHO MIRAGE, CA 92270

PREPARED BY:
FOMOTOR ENGINEERING
225 S. CIVIC DRIVE, SUITE 1-5
PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

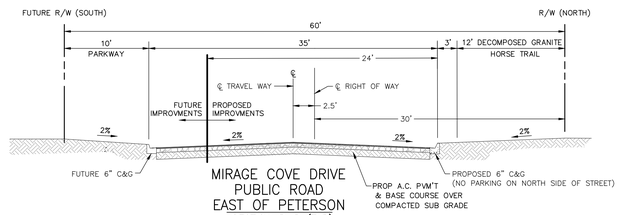
SHEET 4 OF 5 SHEETS

JN22106

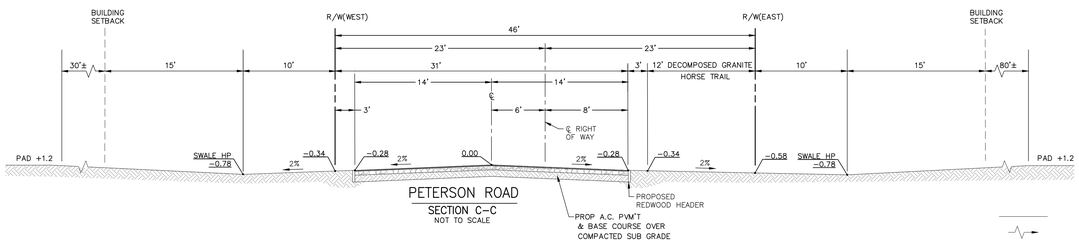




MIRAGE COVE DRIVE
PUBLIC ROAD
WEST OF PETERSON
SECTION A-A (TYP)
NOT TO SCALE



MIRAGE COVE DRIVE
PUBLIC ROAD
EAST OF PETERSON
SECTION B-B (TYP)
NOT TO SCALE



PETERSON ROAD
SECTION C-C
NOT TO SCALE

DIGALERT
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SEAL
REGISTERED PROFESSIONAL ENGINEER PHILLIP K. FOMOTOR No. 47284 CIVIL STATE OF CALIFORNIA

DATE: 11/21/2024

PRELIMINARY GRADING PLAN
TRACT MAP NO. 38971

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PALM SPRINGS, CA. 92262
(760) 323-1842 FAX (760) 323-1742

SHEET 5 OF 5 SHEETS

JN22106

Public Comments

Environmental Assessment Case No. **EA24-0009**, Minor Variance Case No. **VAR24-0005**, and Tentative Tract Map Case No. **TTM24-0003 (TTM 38971)**

Deanna Mendoza, MBA

From: Kristie Ramos, CMC
Sent: Thursday, October 9, 2025 10:51 AM
To: Planning Division
Subject: FW: Document shared with you: "Peterson Subdivision"

Good morning,

Please see public comment below.

Best,

Kristie Ramos, CMC
City Clerk
Phone: 760-324-4511 Ext. 488
E-mail: kristier@RanchoMirageCA.gov
69-825 Highway 111, Rancho Mirage, California, 92270
www.RanchoMirageCa.gov

TRANSPARENCY NOTICE
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From: Kay Williams (via Google Docs) <psfilly@gmail.com>
Sent: Thursday, October 9, 2025 10:10 AM
To: City Clerk <cityclerk@ranchomirageca.gov>
Subject: Document shared with you: "Peterson Subdivision"

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

Kay Williams shared a document



Kay Williams (psfilly@gmail.com) has invited you to **edit** the following document:

Hi! This is a letter that I will read aloud at the planning commission meeting today.
Thank you,
Kay Williams

Peterson Subdivision

This email grants access to this item without logging in. Only forward it to people you trust.

Open Open

Google LLC, 1600 Amphitheatre Parkway, Mountain View, CA 94043, USA
You have received this email because psfilly@gmail.com shared a document with you from Google Docs.

City Clerk of Rancho Mirage, CA
October 9, 2025

Subject: Environmental Assessment Case No. EA24-0009, Minor Variance Case No. VAR24-0005, and Tentative Tract Map Case No. TTM24-0003 (TTM 38971)

Dear Members of Rancho Mirage Planning Commission,

My name is Kay Williams. My husband, Ron, and I live within the proposed subdivision under discussion today. We built our home on Peterson Road, and moved in August of 2001. We enjoy living in our area and look forward to homes being built on these residential estate lots.

As members of the community, we appreciate the planning commission's work to implement standards that benefit the whole area. With that said, I only have a few items with which I hope the commission will consider when cooperating with the developer.

1) The tamarisk trees at the north end of Peterson must be taken out. They are overgrown and over the past few winters, the homeless have found it a desirable location. This has led to trash in the area, outright damage of local property, and altercations with individuals with mental health issues. For the proposed homes to be built safely, the tamarisk trees MUST be removed.
2) The lots in the proposed area must be cleaned of dead brush for fire prevention. (I have emails with code enforcement promising action over the years.) The lots should also be treated with a covering to mitigate the blowsand that this creates.
3) Peterson is a quiet street. However, when there are accidents or delays on HWY 111, travelers unfamiliar with the area, drive speedily down Peterson or Mirage Cove. They think they are able to get through to other major streets even though there are signs posted contradicting this belief. We desire that the developer consider placing a structure at key points to give drivers a visual clue that they are entering private areas and the roads dead end.
4) While researching the many particulars of this development, I noticed there is no mention of the "equestrian trail". There is an equestrian easement near the north end of Peterson on the east side to allow horses to be ridden from Peterson to the Butler Trail. When we built, we were **required** to put in an "equestrian trail" split rail fence, as did our neighbor to the north. I do not see a trail designated on any of the maps in attachment 6. For the continuity of the area, it seems this needs to be added or otherwise what was the point of the requirement?

**This is just a general question regarding point #4. We also had to put in split rail fencing at the back of our property along Butler Trail. Our split rail is significantly further back than the trail and looks quite ridiculous like an afterthought. At the time, we questioned the distance as we gave up a sizeable part of our lot. A person within planning agreed that it was not appropriate, but that was the rule to be followed. Maybe you can come out and rethink it sometime. It truly distracts from the feel of the trail.

Thank you for your considerations regarding the above statements

Sincerely,
Kay & Ron Williams
38600 Peterson Road
Rancho Mirage
psfilly@gmail.com

Deanna Mendoza, MBA

From: Kristie Ramos, CMC
Sent: Tuesday, October 7, 2025 1:02 PM
To: Planning Division
Subject: FW: Peterson Ranch Subdivision

Good afternoon,

Please see public comment below.

Best,

Kristie Ramos, CMC
City Clerk
Phone: 760-324-4511 Ext. 488
E-mail: kristier@RanchoMirageCA.gov
69-825 Highway 111, Rancho Mirage, California, 92270
www.RanchoMirageCa.gov

TRANSPARENCY NOTICE
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From: LIS McF <lmvvs1@gmail.com>
Sent: Monday, October 6, 2025 6:25 PM
To: City Clerk <cityclerk@ranchomirageca.gov>
Subject: Peterson Ranch Subdivision

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

October 6, 2025

City of Rancho Mirage
Planning Department
Rancho Mirage, CA. 92270

Dear Members of the Planning Division,

I am writing as a concerned resident regarding the proposed Peterson Ranch development. I respectfully request that the following concerns be thoroughly addressed during the planning and approval process to ensure the project aligns with the best interests of the neighborhood and its residents:

The proposed development should complement the existing character of our neighborhood. Concerns include the scale, design, and density of the project, which could alter the aesthetic and functional cohesion of the area.

The construction phase can cause significant disruption, including noise, dust, and road closures. I request that the planning division establish clear guidelines for construction hours, noise mitigation, brush/tree cleanup and removal, and communication with residents to minimize disturbances and ensure transparency throughout the process.

To foster trust and collaboration, I urge the planning division to provide regular updates and opportunities for meaningful public input. This includes clear communication about the project timeline, scope, and any changes to the original plan. Ensuring that residents' voices are heard will help create a development that benefits the entire community.

I appreciate the opportunity to provide input in lieu of attending the upcoming meeting. I trust that the planning division will carefully consider the potential impacts of this development and implement measures to address them responsibly.

Please feel free to contact me at (760) 992-6500 or lmvvs1@gmail.com if additional feedback or clarification is needed.

Thank you for your time and commitment to our community's well-being.

Sincerely,

Lisa McFadden
38900 Kelley Lane
Rancho Mirage, CA. 92270
lmvvs1@gmail.com
760-992-6500

"Do not be overcome by evil,
but overcome evil with good."
Romans 12:21

"When someone shows you who they are, believe them the first time."
Maya Angelou

Ben Torres

From: Kristie Ramos, CMC
Sent: Wednesday, October 29, 2025 1:05 PM
To: Planning Division
Subject: Fwd: Peterson Rancho Subdivision

Good afternoon,

Please see below.

Best,
Kristie

Kristie Ramos, CMC
City Clerk
Phone: 760-324-4511 Ext. 488
E-mail: kristier@RanchoMirageCA.gov
69-825 Highway 111, Rancho Mirage, California, 92270
www.RanchoMirageCa.gov

TRANSPARENCY NOTICE
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Begin forwarded message:

From: Joseph Wilson <docjodyps@aol.com>
Date: October 29, 2025 at 12:55:04 PM PDT
To: "Kristie Ramos, CMC" <kristier@ranchomirageca.gov>
Subject: Peterson Rancho Subdivision

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

City of Rancho Mirage 10-29-25

City Council Members

Re: City Council Meeting 11-6-25

Peterson Road Subdivision. 19+ acres Subdivide into 16 parcels.

Environmental Assessment Case No. EA24-0009 et. Seq.

Dear City Council Members,

Our neighborhood welcomes the proposed subdivision done with the following components. These will enhance our neighborhood and properly develop one of the last equestrian estate zoned areas in Rancho Mirage.

The neighborhood residents and supporters request the following:

CONDITIONS OF SUBDIVISION APPROVAL

1. Tamarisk Trees at North end of Peterson Road cut down and removed before January 31, 2026. Homeless people encampments around these trees have been a health and safety hazard for the past three years. Many calls to Code Enforcement and Sheriff have been made by nearby residents because of the encampments. With cool weather upon the Valley now, homeless people will again be illegally trespassing and living around the Tamarisk trees.

2. Equestrian Trails existing by deeded easement and those established by common use going back 60+ years be maintained. Rancho Mirage Planning Staff report does not require Developer to have Equestrian Trails. This was based on trails are "under-utilized" currently. However, if the trails system is not required, such would be the death knell for current and future property owners having horses. Elmwood, Peterson Road, Nielson Road, Kelley Lane and Desert Cove properties have had horses in the past. The properties in our neighborhood are zoned for horses and have connection to the Butler-Abrams Trail that goes from Country Club Drive to Wolfson Park. The one-acre parcels in the subdivision will encourage more horses in our neighborhood. Keep or require equestrian trails easements from North end of Elmwood to North end of Nielson Road and North end of Nielson Road to Peterson Road along the North boundary line of 38-752 Nielson Road and 38-775 Peterson Road.

3. Do NOT put a Road from North end of Nielson Road to Peterson Road. This area for an equestrian trail.

4. Cut weeds, remove trash on the 19+ acres. Mitigate blow sand with approved methods.

5. Entry and Exit. New parcels entry and exit onto Peterson Road not Nielson Road or Kelley Lane.

Desired By Neighborhood Consensus

1. Peterson Road North of Mirage Cove and Mirage Cove East of Peterson Road Private not Public streets. Gates are not necessary, but property owners, developer too, could decide to include. Where no gate, erect a "monument" that clearly defines a Private street. With private streets, No curb and gutters.

2. Private streets would be open for horses, pedestrians, bicycles, people walking their dogs and wildlife which is common in area.

3. Future Houses Architecture. Modern, Contemporary, flat roof "white box" houses do not fit in the neighborhood. Architectural styles that enhance the area include Spanish, Mediterranean, Ranch, Farmhouse, Modern Farmhouse, and similar.

4. House construction may/could be 3+ years in future. Plant trees on perimeters of parcels at Northwest corner and Northeast corner of Peterson

Road and Mirage Cove. This would improve this area visually, help block wind and create value for the Developer and neighborhood properties.

JOSEPH WILSON

70300 Desert cove Ave

Rancho Mirage,CA

direct neighbor to development

From:	Kristie Ramos, CMC
To:	Planning Division
Subject:	Fwd: Environmental Assessment Case No. EA24-0009 et. Seq.
Date:	Wednesday, October 29, 2025 11:17:07 AM
Attachments:	city_seal_transparent_2__4b81bffe-bb95-4b18-a74a-4086edea3b60.png

Good morning,

Please see below.

Best,
Kristie

Kristie Ramos, CMC
City Clerk
Phone: 760-324-4511 Ext. 488
E-mail: kristier@RanchoMirageCA.gov
69-825 Highway 111, Rancho Mirage, California, 92270
www.RanchoMirageCa.gov

TRANSPARENCY NOTICE

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Begin forwarded message:

From: p.psmfon@verizon.net
Date: October 29, 2025 at 10:49:14 AM PDT
To: "Kristie Ramos, CMC" <kristier@ranchomirageca.gov>
Subject: Environmental Assessment Case No. EA24-0009 et. Seq.

CAUTION: This email originated from outside The City of Rancho Mirage. **DO NOT CLICK links** or open **attachments** unless you recognize the sender and know the content is safe.

We are writing this email to support the above referenced application. However, we are suggesting that these modifications be made to the Conditions of Approval:

- Remove the Tamarisk trees, including the root structure at the north end of the property within one year of the approval of this project.
- Maintain the equestrian trails.
- Maintain the existing provisions in the zoning ordinance so that horses

can be kept on these properties
- **Do not** add a new road from Nielson to Petersen
- Remove weeds and trash from the entire property (On-Going)
- **Do not** develop the street to city standards. Keep the streets as private streets that are more reflective of the rural nature of the part of our community. This is what gives the neighborhood its character and desirability.
- Require a perimeter landscape plan that softens the impact on the area while homes are being built. These early landscape improvements will improve the salability of the home and homesites and can be integrated into the long term landscape plans for the development.

Please share these comments with the Council members.

Sincerely:

Mike and Lynn Fontana
P.O. Box 2637
Rancho Mirage

City Council Staff Report

Revision of the Library & Observatory Collection Development Policy in Compliance with the California Freedom to Read Act (AB 1825)

DATE	ITEM #
November 6, 2025	ACTION CALENDAR - 7A.
Presented To	**Presented By**
City Council and Library & Observatory Board	Aaron Espinosa, Library/Observatory Director

RECOMMENDED ACTION

Introduce Ordinance No. (Next-in-Order), 1st Reading, Amending Section 9.30.072 (“Collection Development Policy”) of Chapter 9.30 (“Use of Library and Observatory”) of Division III ("Offenses Against Public Peace") of Title 9 ("Public Peace, Morals and Welfare") of the Rancho Mirage Municipal Code.

DISCUSSION

The mission and purpose of the Rancho Mirage Library & Observatory is to provide free and open access to a broad range of educational, scientific, and general interest materials and services for people of all ages and backgrounds. The Library & Observatory strives to maintain a safe, clean, civil, respectful, and tranquil environment conducive to a positive and productive experience for all patrons, whether they are reading, writing, researching, studying, learning, or participating in community programs and events.

The Library & Observatory functions as a limited public forum, providing a venue for learning, discovery, and civic engagement through reading, research, study, and participation in community programs and events.

The Library and Observatory must adopt and submit a compliant Collection Development Policy by January 1, 2026, to the State Librarian. Failure to do so would result in the Library and Observatory being ineligible for funding through the California State Library.

Significant Change – Collection Development Policy:
The *California Freedom to Read Act (AB 1825)* requires every public library jurisdiction receiving state funding to adopt and maintain a written and publicly accessible Collection Development Policy by January 1, 2026. The policy must be submitted to the State Librarian, who may provide technical assistance and review for compliance.

The Rancho Mirage Library & Observatory has reviewed and updated its Collection Development Policy to meet the requirements of AB 1825. The policy outlines criteria for selecting materials, ensuring intellectual freedom, and maintaining transparency in collection practices. Once approved by the City Council, the policy will be submitted to the State Librarian at **collectiondevelopmentpolicy@library.ca.gov** with a link to the adopted policy. The State Library will use the *California Freedom to Read Act Process and Checklist* (Attachment B) to verify compliance and will provide feedback as needed.

The Rancho Mirage Library & Observatory Advisory Commission has reviewed and approved the proposed updates to both the Use Policy and the Collection Development Policy and recommends that the City Council review and consider approval of the updates.

FISCAL IMPACT

There are no fiscal impacts associated with adoption of the updated Collection Development Policy and Use Policy. However, failure to adopt and submit a compliant Collection Development Policy by January 1, 2026, would render the Rancho Mirage Library & Observatory ineligible for funding through the California State Library.

Attachments

Attachment 1 - Draft Ordinance

ATTACHMENT 1

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF RANCHO MIRAGE, CALIFORNIA, AMENDING SECTION 9.30.072 (“COLLECTION DEVELOPMENT POLICY”) OF CHAPTER 9.30 ("USE OF LIBRARY AND OBSERVATORY") OF DIVISION III ("OFFENSES AGAINST PUBLIC PEACE") OF TITLE 9 ("PUBLIC PEACE, MORALS AND WELFARE") OF THE RANCHO MIRAGE MUNICIPAL CODE

WHEREAS, the City of Rancho Mirage ("City") is a charter city and a municipal corporation, and recognized for certain purposes as a political subdivision of the State of California; and

WHEREAS, the mission and purpose of the Rancho Mirage Library & Observatory is to provide free and open access to a broad range of educational, scientific, and general interest materials and services to people of all ages and backgrounds in a safe, clean, civil, respectful and tranquil environment that is conducive to making everyone's visit at the Library & Observatory a positive, productive and enjoyable experience, whether one is engaged in reading, writing, researching, studying, learning, and/or attending and participating in the multitude of community programs and events offered at the Library & Observatory; and

WHEREAS, the Library & Observatory is a limited public forum in that it offers a venue for members of the public to gather for purposes of reading, writing, researching, studying, learning, and/or attending and participating in the multitude of community programs and events focused on or centered around specific subject matters or topics and which allows the public to express themselves in an orderly and relevant manner; and

WHEREAS, The *California Freedom to Read Act (AB 1825)* requires every public library jurisdiction receiving state funding to adopt and maintain a written and publicly accessible Collection Development Policy by January 1, 2026. The policy must be submitted to the State Librarian, who may provide technical assistance and review for compliance. The proposed ordinance updates the Collection Development Policy to meet the requirements of AB 1825; and

WHEREAS, the Rancho Mirage Library & Observatory Advisory Commission has reviewed and approved the proposed updates herein and recommends that the City Council review and consider approval of the revised Collection Development Policy.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF RANCHO MIRAGE DOES ORDAIN AS FOLLOWS:

Section 1. RECITALS

That the above recitals are true and correct and are incorporated as though fully set forth herein.

Section 2. **AMEND SECTION 9.30.072 (“COLLECTION DEVELOPMENT POLICY”) OF CHAPTER 9.30 ("USE OF LIBRARY AND OBSERVATORY") OF DIVISION III ("OFFENSES AGAINST PUBLIC PEACE") OF TITLE 9 ("PUBLIC PEACE, MORALS AND WELFARE") OF THE RANCHO MIRAGE MUNICIPAL CODE**

That Section 9.30.072 (“Collection Development Policy”) of Chapter 9.30 ("Use of Library and Observatory") of Division III ("Offenses Against Public Peace") of Title 9 ("Public Peace, Morals and Welfare") of the Rancho Mirage Municipal Code, is amended as follows:

9.30.072 Collection Development Policy.

The Library & Observatory provides a variety of print and non-print materials to meet the informational, educational, and recreational needs of the entire community***. The Library & Observatory serves as a center for voluntary inquiry and the dissemination of information and ideas.***

The Library & Observatory seeks to provide breadth within the collection, various points of view, and differing formats. The Library & Observatory endeavors to balance materials of permanent value with those of current interest. Materials are selected based on their content as a whole, not on selected excerpts. ***The collection meets the broad and diverse interests of the community and respects both the library’s autonomy and their specific community needs.***

Race, nationality, or political, social, moral, or religious views of an author does not factor into the selection of materials. Selection is based on merit of the work, value of the work within the collection, and the needs and interests of the community. Consideration is given

to specific types of material: to materials for specific age groups, for special interests of clientele, and to differing formats of materials. ***Library materials should be provided for the interest, information, and enlightenment of all people, and should present diverse points of view in the collection as a whole.*** These selection criteria apply equally to materials purchased and those accepted as gifts.

Responsibility for materials selection rests with the Director operating with the authorization of and within the policies established by the Library & Observatory Board of Directors. Under the direction of the Director, staff members participate in the selection of the print, electronic, and audiovisual materials added to the collection based on input from professional reviews, best seller lists, award winners, as well as direct input from the public.

Suggestions from Library & Observatory patrons are encouraged and receive serious consideration. Patrons making requests that items be added to the collection will be referred to the Information Desk.

The Library & Observatory believes that the use of Library & Observatory materials is an individual and private matter. ***The Library & Observatory asserts the right of the public to receive access to a range of social, political, aesthetic, moral, and other ideas and experiences.*** All patrons are free to select or reject materials for themselves.

Parents have the primary responsibility to guide and direct the use of materials by their own minor children. The Library & Observatory shall not act in loco parentis.

The Library & Observatory incorporates the Library Bill of Rights as adopted by the American Library Association Council.

The library serves a diverse public, and, on occasion, a patron may believe that a specific title or resource should not be in the collection. In this instance, the patron should first discuss his or her concerns about the material with the library staff. If, following the discussion, the patron still wishes the library to reconsider the title or source, he or she should fill out a Library Evaluation of Materials form. Forms are available at the library service desks. Because items are evaluated as a whole, a title will not be reconsidered unless the patron making the request has read/viewed/heard the entire item. A reconsideration form submitted without the name of the person making the objection will not be considered***. Requests will only be considered from residents of the City of Rancho Mirage.*** Also, if the material has been previously reconsidered, it will not be reconsidered again unless the more recent request is based on substantially different reasons than an earlier request.

The request will be referred to the Director for review. The patron will be informed in writing of (1) the receipt of the request and (2) the decision. The Director's decision will be considered final.

The title under consideration will remain in the collection throughout the process to support the freedom of other patrons to read, view, or listen.

Some of the Library & Observatory's digital content is provided using third-party vendors. The Library & Observatory subscribes to services in which the third-party vendor, and not Library & Observatory staff, determines the specific titles or materials made available through the service. In these circumstances, the Library & Observatory may not be able to reconsider specific materials that Library & Observatory users object to but may inform the third-party vendor of user concerns and/or take these concerns into consideration in determining whether to continue subscribing to the service.

Section 3. FURTHER ACTIONS

That the Library and Observatory Director is authorized to take all reasonable and necessary steps to effectuate the purpose of this ordinance, including without limitation submitting the updated Collection Development Policy to the State Library.

Section 4. SEVERABILITY

That the City Council declares that, should any provision, section, paragraph, sentence, or word of this ordinance be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining provisions, sections, paragraphs, sentences, or words of this ordinance as hereby adopted shall remain in full force and effect.

Section 5. REPEAL OF CONFLICTING PROVISIONS

That all the provisions of the Rancho Mirage Municipal Code as heretofore adopted by the City of Rancho Mirage that are in conflict with the provisions of this ordinance are hereby repealed.

Section 6. EFFECTIVE DATE

That this ordinance shall take effect thirty (30) days after its adoption.

Section 7. CITY ATTORNEY REVIEW

That the City Attorney prepared and framed this ordinance pursuant to Section 1.04.01 of the Rancho Mirage Municipal Code and finds that the City Council has the authority to adopt this ordinance, that the ordinance is constitutionally valid, and that the ordinance is consistent with the general powers and purposes of the City as set forth in Section 1.04.031 of the RMMC.

Section 8. AMENDING OF BAIL SCHEDULE

That the City Attorney is hereby directed to determine whether this ordinance necessitates amendment of the City's Bail Schedule and to cause such necessary amendments to be made and filed with the local branches of the Superior Court of the County of Riverside.

Section 9. CERTIFICATION

That the City Clerk shall certify to the passage of this ordinance and shall cause the same to be published according to law.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

THE FOREGOING ORDINANCE WAS ADOPTED at a meeting of the City Council held on _____, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

CITY OF RANCHO MIRAGE:

_____
Ted Weill Mayor

ATTEST:

_____
Kristie Ramos, City Clerk

APPROVED AS TO FORM:

_____
Colin Kirkpatrick, City Attorney