PLANNING COMMISSION
Regular Meeting

Agenda

Thursday, February 11, 2021 at 7:00 PM

TELECONFERENCED MEETING
[Pursuant to Governor Executive Order N-29-20]

There Will Not Be a Physical Location for Attending the Meeting

The Public May Observe the Meeting and Offer Public Comment As Follows:

STEP 1

Install the Free Zoom App or Visit the Free Zoom Website at <https://zoom.us/>

STEP 2

Get Meeting ID Number, Password and On the List to Speak by emailing zoom@moval.org or calling (951) 413-3206, no later than 6:00 p.m. on Thursday, February 11, 2021

STEP 3

Select Audio Source

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STEP 4

Public Comments May be Made Via Zoom

During the Meeting, the Chairperson Will Explain the Process for Submitting Public Comments

ALTERNATIVE

If you do not wish to make public comments, you can view the meeting on Channel MVTV-3, the City's website at www.moval.org or YouTube

Upon request, this agenda will be made available in appropriate alternative formats to persons with disabilities, in compliance with the Americans with Disabilities Act of 1990. Any person with a disability who requires a modification or accommodation in order to participate in a meeting should direct such request to the ADA Coordinator, at 951.413.3120 at least 72 hours before the meeting. The 72-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.

CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

APPROVAL OF AGENDA

PUBLIC COMMENTS PROCEDURE

During the public comment period for each item, as well as during the public comment period for items not on the agenda, the clerk will call upon each person who is on the Zoom application that has requested to speak. Each member of the public wishing to speak will have a maximum of 3 minutes to speak on any agenda item, except for the applicant for entitlement. The Commission may establish an overall time limit for comments on a particular Agenda item. Members of the public must direct their questions to the Chairperson of the Commission and not to other members of the Commission, the applicant, the staff, or the audience. Those wishing to speak should follow the teleconference procedures. If you are absent at the time your name is called, you will forfeit the opportunity to speak on the items.

PUBLIC COMMENTS ON ANY ITEM NOT ON THE AGENDA

CONSENT CALENDAR

All matters listed under Consent Calendar are considered to be routine and non-controversial, and may l be enacted by one roll call vote. There will be no discussion of these items unless a member of the Planning Commission requests that an item be removed for separate action.

1. Planning Commission Minutes – Regular Meeting – January 14, 2021 7:00 PM

NON-PUBLIC HEARING ITEMS

1.	Case:	PEN20-0200
	Applicant:	City of Moreno Valley
	Property Owner:	City of Moreno Valley
	Representative:	Community Development Department
	Location:	Citywide
	Case Planner:	Claudia Manrique
	Council District:	All
	Proposal	Annual Progress Report as Required by Government Code 65400.

PUBLIC HEARING ITEMS

1.	Case:	PEN20-0093 Conditional Use Permit
	Applicant:	RD Medigroup, Inc - DBA It's 4:20 Time
	Property Owner:	Judith Flores
	Representative:	Roberto Milli
	Location:	24095 Sunnymead Boulevard, on the south side of Sunnymead Boulevard between Indian Street and Heacock Street. (APN's 481-120-004 & 481-120-005)
	Case Planner:	Sean Kelleher
	Council District:	1
	Proposal	Conditional Use Permit for a 1,474 square foot retail cannabis Dispensary, "It's 4:20 Time," located within an existing building at 24095 Sunnymead Boulevard.

2.	Case:	PEN20-0060 Plot Plan
	Applicant:	Jonathan Slager of Bridge Investment Group
	Property Owner	ROCIII CA Belago, LLC
	Representative	Dave Jorgensen of Bridge Investment Group
	Location:	28095 John F Kennedy Drive, Assessor's Parcel Number 304-100-007
	Case Planner:	Gabriel Diaz
	Council District:	4
	Proposal	A Plot Plan for the development of a new 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course.

OTHER COMMISSION BUSINESS

STAFF COMMENTS

PLANNING COMMISSIONER COMMENTS

ADJOURNMENT

Planning Commission Regular Meeting, February 25, 2021 at 7:00 P.M., City of Moreno Valley, City Hall Council Chamber, 14177 Frederick Street, Moreno Valley, CA 92553.

OFFICIAL MINUTES OF THE
PLANNING COMMISSION
OF THE CITY OF MORENO VALLEY

REGULAR MEETING – 7:00 PM
January 14, 2021

TELECONFERENCED MEETING

[PURSUANT TO GOVERNOR EXECUTIVE ORDER N-29-20]

There Will Not Be a Physical Location for Attending the Meeting

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ALTERNATIVE

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CALL TO ORDER

ROLL CALL

Planning Commission:	Patricia Korzec	Chairperson	Present
	Ray L. Baker	Vice Chairperson	Present
	Robert Harris	Commissioner	Present
	JoAnn Stephan	Commissioner	Present
	Rafael Brugueras	Commissioner	Present
	Jeffrey Sims	Commissioner	Present
	Alvin DeJohnette	Commissioner	Present

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Commissioner Harris.

APPROVAL OF AGENDA

Motion to approve the agenda was made by Vice Chairperson Baker and seconded by Commissioner DeJohnette.

Vote: 7-0
Ayes: Vice Chairperson Baker, Commissioner DeJohnette, Brugueras, Stephan, Harris, Sims, and Chairperson Korzec
Action: **Approved**

PUBLIC COMMENTS PROCEDURE

PUBLIC COMMENTS

Speakers
Keri Then

CONSENT CALENDAR

1. Planning Commission - Regular Meeting - Nov 12, 2020 7:00 PM
2. Planning Commission - Regular Meeting - Dec 10, 2020 7:00 PM

   Motion to approve the minutes of November 12 and December 10, 2020 was by Vice Chairperson Baker and seconded by Commissioner Brugueras.

   Vote: 7-0
   Ayes: Vice Chairperson Baker, Commissioner Brugueras, Stephan, Harris, DeJohnette, Sims, and Chairperson Korzec
   Action: **Approved**

NON-PUBLIC HEARING ITEMS

No items for discussion.

PUBLIC HEARING ITEMS

1. Proposed General Plan Amendment Amending Figure 2-2 “Land Use Map” of the Moreno Valley General Plan, a Specific Plan Amendment amending the land use designations within Specific Plan 205, and proposed Plot Plan for an approximately 220, 390 square foot Light Industrial Building, and necessary and corresponding amendment to the City’s Zoning Atlas to reflect the proposed changes in the Zoning Classification and/or redistricting associated with the above. (Report of: Planning Commission)

A. That the Planning Commission ADOPT Resolution No. 2021-01, attached hereto, RECOMMENDING that the City Council:

   1. APPROVE the Initial Study/Mitigated Negative Declaration prepared for General Plan Amendment PEN20-0139, Specific Plan Amendment PEN20-0138 and Plot Plan PEN20-0137 on file with the Community Development Department, incorporated herein by this reference, and any necessary and corresponding amendment to the City’s Zoning Atlas to reflect the proposed changes in the zoning classification and/or redistricting associated with the General Plan Amendment and Specific Plan Amendment, which was completed in compliance with CEQA and the CEQA Guidelines, and reflects that the Planning Commission reviewed and considered the information contained in the Initial Study/Mitigated Negative Declaration, and exercised its independent judgment and analysis of the proposed Project’s potential environmental impacts; and

   2. ADOPT the Mitigation Monitoring and Reporting Program prepared for the Project, which consists of General Plan Amendment PEN20-0139, Specific Plan Amendment PEN20-0138, Plot Plan PEN20-0137 and any necessary and corresponding amendment to the City’s Zoning Atlas to reflect the proposed changes in the zoning classification and/or redistricting associated with the General Plan Amendment and Specific Plan Amendment pursuant to CEQA and the CEQA Guidelines.

B. That the Planning Commission ADOPT Resolution No. 2021-02, attached hereto, RECOMMENDING that the City Council:

   1. APPROVE PEN20-0139 General Plan Amendment based on the Recitals, Evidence contained in the Administrative Record and Findings as set forth in Resolution No. 2021-02 and any necessary and corresponding amendment to the City’s Zoning Atlas to reflect the proposed changes in the zoning classification and/or redistricting associated with the General Plan Amendment.

C. That the Planning Commission ADOPT Resolution No. 2021-03, attached hereto, RECOMMENDING that the City Council:

1. APPROVE PEN20-0138 Specific Plan Amendment based on the Recitals, Evidence contained in the Administrative Record and Findings as set forth in Resolution No. 2021-03. and any necessary and corresponding amendment to the City's Zoning Atlas to reflect the proposed changes in the zoning classification and/or redistricting associated with the Specific Plan Amendment.

D. That the Planning Commission ADOPT Resolution No. 2021-04, attached hereto, RECOMMENDING that the City Council:

1. APPROVE PEN20-0137 Plot Plan based on the Recitals, Evidence contained in the Administrative Record and Findings as set forth in Resolution No. 2021-04.

Public Hearing Opened: 8:10 pm

Speakers

Keri Then	Jose Garcia	Brittney Goodrich
Jan Zuppardo	Andrea Vasquez	Latesha Sims
Jayson Baiz	Brandon Garrety	Louise Palomarez
Eddie Rivera	Maritza Quinoz	Robert Palomarez
Thomas Davis	Tom Jerele	

Public Hearing Closed: 8:48 pm

Motion to approve Resolution Numbers 2021-01, 2021-02, 2021-03, and 2021-04 was made by Commissioner Sims and seconded by Commissioner Stephan.

Vote: 7-0
Ayes: Commissioner Sims, Stephan, Brugueras, Harris, DeJohnette, Vice Chairperson Baker, and Chairperson Korzec
Action: **Approved**

2. Conditional Use Permit for a 1032 square foot Liquor Store named "Duke's Liquor." (Report of: Planning Commission)

A. APPROVE Resolution No. 2021-05:

1. FINDING AND DETERMINING that PEN20-0194 has been evaluated pursuant to the California Environmental Quality Act (CEQA) and CEQA

Guidelines Section 15332 and is categorically exempt from environmental review as a Class 32 exemption (Infill Development Projects); and

2. APPROVING Conditional Use Permit PEN20-0194 subject to the Conditions of Approval attached as Exhibit A.

Public Hearing Opened: 9:33 pm

No public speakers

Public Hearing Closed: 9:35 pm

Motion to approve Resolution Number 2021-05 was approved by Commissioner Brugueras and seconded by Vice Chairperson Baker.

Vote: 7-0
Ayes: Commissioner Brugueras, Vice Chairperson Baker, Commissioner Stephan, Harris, DeJohnette, Sims, and Chairperson Korzec
Action: **Approved**

OTHER COMMISSION BUSINESS

No items for discussion.

STAFF COMMENTS

No items for discussion.

PLANNING COMMISSIONER COMMENTS

Chairperson Korzec thanked our Media staff for the smooth meeting with our list of speakers and Commissioner Sims wished everyone a Happy New Year.

ADJOURNMENT

There being no further business to come before the Planning Commission, Chairperson Korzec adjourned the meeting at 9:46 PM.

Submitted by:

_____
Ashley Aparicio
Planning Commission Secretary

Approved by:

_____
Patricia Korzec
Chairperson

PLANNING COMMISSION

STAFF REPORT

Meeting Date: February 11, 2021

GENERAL PLAN ANNUAL PROGRESS REPORT AS REQUIRED BY GOVERNMENT CODE 65400

Case:	PEN20-0200
Applicant:	City of Moreno Valley
Property Owner	City of Moreno Valley
Representative	Community Development Department
Location:	Citywide
Case Planner:	Claudia Manrique
Council District:	All
Proposal	Annual Progress Report as Required by Government Code 65400

SUMMARY

Pursuant to Government Code Section 65400, the City is required to prepare an annual progress report on the status of the City's General Plan and its implementation ("Annual Report"). The Annual Report must be submitted to the Governor's Office of Planning and Research (OPR) and the California Department of Housing and Community Development (HCD). However, the Annual Report must be presented to the City Council for it review and acceptance before it is submitted to the above-referenced state agencies.

BACKGROUND

Under California law, the City is required to adopt and maintain a comprehensive, long-term General Plan for its physical development including consideration of any land

located outside its boundaries which bears a relationship to its planning activities. The General Plan is at the top of the hierarchy of the City's land use regulations; zoning and other land use decisions must conform to the General Plan. In essence, the City's General Plan serves as the blueprint for future growth and development. As a blueprint for the future, the General Plan contains goals, objectives, policies and programs designed to provide decision makers with information and a basis for all land use related decisions.

Per state law, the General Plan must contain the following seven mandatory elements: (1) Land Use Element; (2) Circulation Element; (3) Housing Element; (4) Conservation Element; (5) Open Space Element; (6) Noise Element; and (7) Safety Element. Environmental Justice is also required for jurisdictions with identified disadvantaged communities. The City has the option of including additional elements in its General Plan as well.

Land Use Element

The Land Use Element must designate the proposed general distribution, location, and extent of land uses for housing; business; industry; open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty; education; public buildings and grounds; waste disposal facilities; and other categories of public and private uses.

Circulation Element

The Circulation Element must identify the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, military airports and ports, and other local public utilities and facilities.

Housing Element

The Housing Element must identify and analyze existing and projected housing needs and establish goals, policies, quantified objectives, financial resources, and scheduled programs for the preservation, improvement, and development of housing.

Conservation Element

The Conservation Element must address the identification, conservation, development, and use of natural resources.

Open Space Element

The Open Space Element details comprehensive and long-range plans and measures for (1) preserving open space for natural resources, (2) managing the production of resources, (3) outdoor recreation, (4) public health and safety, (5) military installations, and (6) Native American places, features, and objects.

Noise Element

The Noise Element considers potential noise problems in the community.

Safety Element

The Safety Element addresses risk associated with seismic, geologic, flood, and wildfire hazards. Known seismic and other geologic hazards must be mapped, and emergency evacuation routes, firefighting water supply, and similar emergency issues must be addressed.

The City's existing General Plan incorporates all of the required elements which were last updated as follows:

- Land Use Element titled as "Community Development Element" (2006)
- Circulation Element (2006)
- Housing Element (2014)
- Conservation Element (2006)
- Parks, Recreation and Open Space Element (2006)
- Safety/Noise Element (2006)

Environmental Justice Element

The Environmental Justice Element considers health, civic engagement, and other items to address the needs of disadvantaged communities.

Staff and various City consultants are currently working on a comprehensive update of the City's General Plan as authorized by the City Council on October 1, 2019.

ANNUAL REPORT CONTENTS

The 2020 General Plan Annual Progress Report summarizes the City's progress towards implementing the goals, policies and programs of the City's 2006 General Plan. It covers the period of January 1, 2020 through December 31, 2020. The Annual Report includes a report of all General Plan amendments approved by the Planning Commission and City Council in 2020. Two (2) General Plan Amendments were approved during the annual reporting period.

General Plan Amendments

Two General Plan Amendments were approved during the reporting period.

Project Number	Action	Description	Location
PEN19-0151 PEN19-0150 PEN19-0152	June 25, 2020 - Planning Commission recommended approval. September 1, 2020 - City Council approval with the second reading	Fritz Duda Town Gate Highlands - A proposal to amend the boundaries of the General Plan Land Use Map and City Zoning Map making minor adjustments for consistency between General Plan and Zoning designations and a Tentative Parcel Map to	Southeast corner of Ironwood Avenue and Day Street

	of the zoning ordinance on September 15, 2020.	subdivide the project site.	
PEN19-0206 PEN19-0207 PEN19-0204 PEN19-0205	November 12, 2020 - Planning Commission recommended approval. December 15, 2020 – City Council approval	General Plan Amendment from Residential/Office (R/O) to Community Commercial (CC), - Change of Zone from Office Commercial (OC) to Community Commercial (CC) for a proposed drive-thru restaurant and convenience store and gas station.	Northeast corner of Perris Boulevard and Dracaea Avenue

Housing

HCD requires the reporting of Housing Element implementation on specific State reporting forms, which were updated in January 2021. The method of reporting Housing Element implementation is established by HCD with the purpose of tracking overall housing production in a community, as well as, more specifically, the City's progress towards meeting its Regional Housing Needs Allocation (RHNA). The City's Housing Element Implementation Progress Report is included as Appendix A to the Annual Report (Attachment 1).

In summary, 431 new residential permits were issued in 2020, including 271 multiple family (apartment) units and 160 single-family dwelling (SFD) units. All 271 apartments units fall into the Moderate Income Level Housing (>=8 units) category. 40 of the SFD units, which are located in Planning Unit Development (PUD) projects in Multiple-Family Zoning Districts, also fall into the Moderate Income Level Housing (>=8 units) category. The remaining 120 SFD units fall into the Above Moderate Income Level Housing (1-5 units) category. The City's progress in meeting its Year 2014-2021 RHNA goals is summarized in the table below.

City of Moreno Valley Cycle 5 RHNA Progress					
Income Level	*2014-2021 RHNA (# units)*	*Units Built in 2014-2019*	*2014-2019 Annual Report Remaining RHNA Need*	**New Units 2020**	*2020 Remaining RHNA Need*
Very Low	1500	0	1500	**0**	1500
Low	993	0	993	**0**	993
Moderate	1112	457	655	**311**	344
Above-Moderate	2564	1354	1210	**120**	1090
Total	6,169	1,811	4,358	**431**	3,927

ACCOMPLISHMENTS IN 2020

The purpose of the Annual Report is to highlight significant accomplishments and summarize ongoing General Plan projects that the City has been working on since January of 2020. Major accomplishments include key projects that demonstrate how the City is implementing the policy and realizing the vision of the General Plan.

Highlighted below are some of the items from the Annual Report.

Community Development Department (Planning)

1. Two (2) General Plan related projects reviewed and approved by City Council.

2. Twenty-one (21) major projects reviewed and approved by the Planning Commission.

Public Works

- Citywide Pavement Rehabilitation Program for Arterials and Collectors FY 2019/20 (construction completed in December 2020)

- Juan Bautista De Anza Trail Gap Closure ATP 3 (construction start December 2020)

- SR 60- Moreno Beach Interchange project (design completed in September 2020, construction in Summer 2021)

- Added 50 intersections to the advanced traffic control system, including almost all of Perris Boulevard, via completion of the ITS Deployment Phase 1B project

- Installed three Dynamic Message Signs on major arterials for en route traveler information dissemination and public service messages

- Migration of all online intersections to one platform for ease of operation and reduced maintenance costs

- Public Improvements Secured through bonds, etc.: $28,406,000

- Issued grading permits for the entitled 81-unit affordable housing project – The Courtyards at Cottonwood.

Moreno Valley Utility (MVU)

Accomplishments for energy efficiency in 2020 include the following:

- Completion of Transportation Electrification Roadmap in early 2020.

- Construction began in late 2020 that will result in the installation of three (3) electric vehicle-charging stations at the Moreno Valley City Hall Annex. When completed, these EV chargers will be the third set of EV charging stations owned and operated by the City's electric utility.

- The City owns and operates a 500kW solar carport system that generated 867,940 kWh in 2020. Construction of an additional 50kW solar carport system at the Moreno Valley City Hall Annex began in late 2020.

- As of December 31, 2020, approximately 20% of MVU customers have installed over 10 MW of solar.

Parks & Community Services

- MoVal Meals, Senior Eats, Family Service Association meal programs (serving over 110,000 meals throughout the pandemic), hosting multiple food drives, implementing the Community Learning & Internet Connectivity (CLiC) Initiative, and the “We’ve Got You Covered” Mask Campaign,

- Dedication of the new Civic Center Amphitheater and Park which will ultimately take its place as a premier outdoor performance venue.

- Ground broken on Santiago Park, Moreno Valley’s 33rd Community Park in August 2020. The park will include shade shelters, restroom, lighted trail path, playground, multi-use field, perimeter fencing, and a fitness center that will accommodate 84 exercises.

- Parks & Community Services Department received both the Helen Putnam Award for Excellence, League of California Cities (ASES Program) and Creating Community Award of Excellence - Expanded Learning Program, California Parks and Recreation in 2020.

Financial and Management Services Department

- Moreno Valley opened its third library site in September 2020, the Iris Plaza Branch.

- Installation of WiFi network cabling and equipment at three City facilities, Community Recreation Center's Community Garden area, at the Cottonwood Golf Center banquet and meeting rooms, and the Senior Center, to provide free public Wi-Fi. The U.S. Department of Housing and Urban Development (HUD) Emergency Solutions Grants Program - Coronavirus (ESG-CV) provided funding for the project.

- Moreno Valley GIS expanded its web presence with the “MoVal GeoHub” (https://gis-moval.opendata.arcgis.com/). This public platform contains the City's interactive maps and applications. These resources provide citizens the ability to visualize geospatial data and relationships to enable a better understanding of our community.

- Assisted 4,058 households with Fair Housing Services

- Built or rehabilitated 51 housing units, including 4 new multi-family rental units rehabilitated, 41 single family homes rehabilitated and 6 homes provided energy efficiency solar systems

- Street improvements and ADA improvements funded by HUD's Community Development Block Grant (CDBG) Program completed in 2019/20 benefited cumulatively 599,713 low-moderate income persons.

In conclusion, the General Plan Annual Report satisfies the State-mandated annual report on the implementation status of Moreno Valley's General Plan. The actions, plans, programs, and projects documented in the Annual Report represent the City's commitment to achieving the goals and objectives set forth in the State required seven (7) mandated Elements.

ENVIRONMENTAL

The General Plan Annual Report qualifies for the general rule exemption in accordance with Section 15061(b)(3) of the California Environmental Quality Act (CEQA) Guidelines.

NOTIFICATION

No public notification other than accomplished with routine posting of the meeting agenda is required for this City Council item.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2021-07:

1. **CERTIFYING** that the General Plan Annual Report qualifies for the common sense exemption in accordance with Section 15061(b)(3) of the California Environmental Quality Act (CEQA) Guidelines; and

2. **RECOMMENDING** that the City Council find and conclude that the January 2020 to December 2020 General Plan Annual Report is consistent with the requirements of Government Code Section 65400 and direct staff to submit the Annual Report to the Office of Planning and Research and to the Department of Housing and Community Development by April 1, 2021.

Prepared by:
Claudia Manrique
Associate Planner

Approved by:
Patty Nevins
Planning Official

ATTACHMENTS

1. Resolution 2021-07
2. 2020 General Plan Annual Progress Report
3. Appendix A - 2020 Housing Element Annual Progress Report Table
4. Appendix B - Annual Report General Plan Goals-Policies 2020

RESOLUTION NO. 2021-07

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY RECOMMENDING THAT THE CITY COUNCIL APPROVE THE 2020 GENERAL PLAN ANNUAL PROGRESS REPORT FOR SUBMISSION TO THE GOVERNOR'S OFFICE OF PLANNING AND RESEARCH (OPR) AND DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT (HCD)

WHEREAS, under California law, the City is required to adopt and maintain a comprehensive, long-term General Plan for its physical development including consideration of any land located outside its boundaries which bears a relationship to its planning activities; and

WHEREAS, the General Plan is at the top of the hierarchy of the City's land use regulations; zoning and other land use decisions must conform to the General Plan; and

WHEREAS, the City's General Plan serves as the blueprint for future growth and development and contains goals, objectives, policies and programs designed to provide decision makers with information and a basis for all land use related decisions; and

WHEREAS, per state law, the General Plan must contain the following seven mandatory elements: (1) Land Use Element; (2) Circulation Element; (3) Housing Element; (4) Conservation Element; (5) Open Space Element; (6) Noise Element; and (7) Safety Element; and

WHEREAS, the City has the option of including additional elements in its General Plan as well; and

WHEREAS, the City's existing General Plan incorporates all of the required elements which were last updated as follows:

- Land Use Element titled as "Community Development Element" (2006)
- Circulation Element (2006)
- Housing Element (2014)
- Conservation Element (2006)
- Parks, Recreation and Open Space Element (2006)
- Safety/Noise Element (2006)

WHEREAS, the City of Moreno Valley's current General Plan was adopted on July 11, 2006; and

WHEREAS, pursuant to Government Code Section 65400, the City is required to prepare an annual progress report on the status of the City's General Plan and its implementation ("Annual Report"); and

WHEREAS, the Annual Report must be submitted to the Governor's Office of Planning and Research (OPR) and the California Department of Housing and Community Development (HCD), which must be submitted on or before April 1, 2021; and

WHEREAS, the Annual Report must be presented to the City Council for it review and acceptance before it is submitted to the above-referenced state agencies; and

WHEREAS, OPR suggests that the Annual Report contain the following: (1) measures associated with the implementation of the General Plan with specific reference to individual elements; (2) the degree to which the General Plan complies with OPR's General Plan Guidelines; (3) the date of the last update to the General Plan; (4) priorities for land use decision making that have been established by the City Council such as the passage of moratoria or emergency ordinances; (5) goals, policies, objectives, standards or other plan proposals that need to be added or were deleted, amended, or otherwise adjusted; (6) references to the status of any specific General Plan element or policy with a brief comment on how each advanced the implementation of the General Plan during the past year; (7) planning activities initiated such as master plans, specific plans, master environmental assessments, annexation studies, and other studies or plans; (8) General Plan amendments; and (9) major development applications processed; and

WHEREAS, the City is required to submit a Housing Element Annual Progress Report to the Department of Housing and Community Development (HCD) using forms prescribed by HCD; and

WHEREAS, the City's Strategic Plan (Momentum MoVal), adopted on August 16, 2016, included Initiative 1.9.1 which provided guidance on the preparation of a General Plan Annual Report; and

WHEREAS, the City's Strategic Plan (Momentum MoVal) also included Initiative 1.9.2 which formed an ongoing working group of key City staff tasked with researching and evaluating the current General Plan for purposes of completing a comprehensive update of the General Plan; and

WHEREAS, the City amended the General Plan in February 2014 to incorporate an updated Housing Element, and a comprehensive General Plan update which includes a subsequent update to the Housing Element has been reviewed by the City's General Plan Advisory Committee, as authorized by the City Council on October 1, 2019.

NOW, THEREFORE, the Planning Commission of the City of Moreno Valley does hereby resolves as follows:

Section 1. RECITALS AND FINDINGS

That the above recitals are true and correct and are incorporated herein by this reference.

Section 2. RECOMMENDATION

That the City Council approve the 2020 General Plan Annual Progress Report for submission to the Governor's Office of Planning and Research (OPR) and Department of Housing and Community Development (HCD) on or before April 1, 2021.

Section 3. CEQA EXEMPTION

That this General Plan Annual Report qualifies for the general rule exemption in accordance with Section 15061(b)(3) of the California Environmental Quality Act (CEQA) Guidelines.

Section 4. SEVERABILITY

That the Planning Commission 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 5. REPEAL OF CONFLICTING PROVISIONS

That all the provisions heretofore adopted by the Planning Commission that are in conflict with the provisions of this Resolution, are hereby repealed.

Section 6. EFFECTIVE DATE

That this Resolution shall take effect immediately upon its adoption.

PASSED AND ADOPTED THIS _____ day of _____, 2021.

CITY OF MORENO VALLEY
PLANNING COMMISSION

_____
Patricia Korzec, Chairperson

ATTEST:

_____
Patty Nevins,
Planning Official

APPROVED AS TO FORM:

_____
Steven B. Quintanilla,
Interim City Attorney

Exhibits:
Exhibit 1: 2020 General Plan Annual Report with Appendix A: 2020 Housing Element Annual Progress Report Table and Appendix B: Annual Report General Plan Goals-Policies 2020

Exhibit A

2020 General Plan Annual Report

CITY OF MORENO VALLEY
Community Development Department
Planning Division

GENERAL PLAN ANNUAL PROGRESS REPORT

JANUARY 1, 2020 – DECEMBER 31, 2020

TABLE OF CONTENTS

ATTACHMENTS

ACKNOWLEDGEMENTS

CITY COUNCIL (Elected)	**DISTRICT**	**TERM EXPIRES**
Dr. Yxstian A. Gutierrez, Mayor	CITYWIDE MAYOR	November 2022
Victoria Baca, Mayor Pro-Tem	1	November 2024
Dr. Carla Thornton	2	November 2022
David Marquez	3	November 2024
Ulises Cabrera	4	November 2022

PLANNING COMMISSION (Appointed)	**TERM EXPIRES**
Patricia Korzec, Chairperson	March 31, 2023
Ray L. Baker, Vice Chairperson	March 31, 2021
Alvin DeJohnette	March 31, 2021
Jeffrey D. Sims	March 31, 2023
Rafael Brugueras	March 31, 2023
Robert Harris	March 31, 2021
JoAnn Stephan	March 31, 2021

CITY MANAGER
Mike Lee

ASSISTANT CITY MANAGER
Marshall Eyerman
Michael L. Wolfe

DEPUTY CITY MANAGER
Jacqueline Melendez

COMMUNITY DEVELOPMENT DEPARTMENT
Manuel A. Mancha, Community Development Director

Planning Division
Patty Nevins, Planning Official
Chris Ormsby, AICP Senior Planner
Sean P. Kelleher, Senior Planner
Claudia Manrique, Associate Planner
Gabriel Diaz, Associate Planner
Jeffrey Bradshaw, Associate Planner
Julia Descoteaux, Associate Planner
Leticia Esquivel, Senior Permit Technician
Grace Espino-Salcedo, Permit Technician
Summer Looy, Permit Technician
Ashley Aparicio, Administrative Assistant
Vera Sanchez, Senior Administrative Assistant

ANNUAL REPORT SUMMARY

BACKGROUND

On December 3, 1984, the City of Moreno Valley was incorporated as a general law city led by a City Council-Manager form of government. At the time of incorporation, the City of Moreno Valley consisted of 42 square miles and a population of 49,702 people. As of December 2020, the City includes 51.56 square miles with a population of 214,982 people.

The City adopted its first General Plan in 1988. The General Plan was comprehensively amended and updated on July 11, 2006. The current General Plan recognizes the community's diverse population, distinct residential neighborhoods, neighborhood and regional commercial activities, industrial potential and recreational amenities. The City began the process for a comprehensive General Plan update in November 2019. This process has included focused group meetings, community surveys, workshops, advisory committee meetings, and Planning Commission and City Council meetings. All of the efforts are expected to culminate in the adoption of a General Plan update in mid-2021. The updated General Plan will comprehensively update the programs and policies in the current General Plan.

This document constitutes an annual report to the Planning Commission and City Council as required by state law on the updates of programs and policies in the General Plan. The document includes major projects, General Plan amendments, a status report of goal objectives, policies and programs of the current General Plan, and a Housing Program Status Report. This Annual Report includes projects and information from January 1, 2020 through and up to December 31, 2020.

The following is a summary of the current adoption status of the different required elements of the General Plan:

- Circulation Element (2006)
- Community Development Element (2006)
- Conservation Element (2006)
- Housing Element (2014)
- Parks, Recreation and Open Space Element (2006)
- Safety and Noise Element (2006)

ANALYSIS

Government Code Section 65400

California Governments Code Section 65400 requires that an annual report be made to the legislative body of the submitting jurisdiction on the status of the General Plan and progress towards its implementation prior to submittal to the Office of Planning & Research and Department of Housing and Community Development. The report must

also include activity that addresses the City's share of regional housing needs. State law requires the following:

A) A General Plan Annual Report shall be provided by April of each year to the City Council, the Office of Planning and Research (OPR) and the Department of Housing and Community Development (HCD); and

B) A status of the General Plan and progress in its implementation shall be provided in the General Plan Annual Report; and

C) Progress in meeting its share of the regional housing needs pursuant to Section 65584 of the Government Code shall be provided in the General Plan Annual Report.

Annual Review and Housing Program Summary Report

Pursuant to State Law, the Annual Report and Review of the City of Moreno Valley General Plan reports the progress in implementing the General Plan to the City Council. The City of Moreno Valley's Annual Report includes the following items:

1. A list of Accomplishments from January 2020 through December 2020

2. A list of General Plan Amendments from January 2020 through December 2020

3. Appendix A - Housing Element Implementation Progress Report includes the City's progress made in meeting its share of regional housing needs pursuant to State Government Code Section 65584.

4. Appendix B – Moreno Valley General Plan Complete List of Goals and Policies provides a status report of the 2006 General Plan goals, policies, objectives and programs towards implementing the City's blueprint for land use development.

Housing Element Progress

State law requires that each jurisdiction in California include a Housing Element in its General Plan that establishes specific actions, objectives, and timelines for meeting its State mandated Regional Housing Needs Assessment (RHNA) for each income level. The RHNA is provided to jurisdictions in eight-year cycles. The current cycle is Cycle 5, which covers the time period of 2014 through 2021. Every year the City prepares an annual Housing Element Progress Report (Appendix A) that it submits to the California Department of Housing and Community Development (HCD) and the Governor's Office of Planning and Research (OPR) by April 1st. Shown in Table 1 is the City's progress in meeting its RHNA.

Table 1 City of Moreno Valley Cycle 5 RHNA Progress				
Income Level	*2014-2021 RHNA (# units)*	*2019 Annual Report Remaining RHNA Need*	*New Units 2020*	*2020 Remaining RHNA Need*
Very Low	1500	1500	0	1500
Low	993	993	0	993
Moderate	1112	655	311	344
Above-Moderate	2564	1210	120	1090
Total	**6,169**	**4358**	**431**	**3,927**

The 2020 Housing Element Annual Report also includes required data on the number of applications submitted to the City for the production of housing units, the number of applications that were approved by the Planning Commission or City Council, and the number of building permits that were issued. The intention is to monitor whether cities are limiting housing production through its approval processes by comparing the number of housing applied for to the number that are actually constructed. The City of Moreno Valley encourages the production of new housing in the City and has a record of approving all applications that meet City standards. Table 2, taken from Table A of the 2020 Housing Element Annual Report, shows that 862 housing units were proposed in the applications received by the City in 2020.

Table 2 2020 Submitted Housing Entitlement Applications Summary	
Total Housing Applications Submitted	27
Number of Proposed Units in All Applications Received	862
Total Housing Units Approved	424
Total Housing Units Disapproved	0
Total Housing Units in Review	438

Moreno Valley General Plan – Goals, Objectives, Policies and Programs

Appendix B evaluates the 2006 General Plan goals and policies in a comprehensive document providing the goal/policy number, a description of each goal and policy, a discussion on implementation status and the party responsible for carrying out each item.

- A goal is defined as a broad vision of what the community wants to achieve or provide to residents, landowners and business owners. It is a statement of a desired condition based on community values. Goals are general in nature and usually timeless.

- A policy is a specific statement that guides decision-making. It indicates a commitment of the City to a particular course of action. A policy is based on and assists to implement the goal.

The General Plan Annual Report also summarizes the objectives leading up to the goal/policy as well as an update on existing programs.

General Plan Update

The State Office of Planning and Research (OPR) recommends that cities update their General Plan every ten (10) years. The City of Moreno Valley last completed an update to its General Plan on July 11, 2006, and has begun work on a comprehensive General Plan update (MoVal 2040), scheduled to be completed by mid-2021. This process has included focused group meetings, community surveys, workshops, advisory committee meetings, and Planning Commission and City Council meetings.

Strategic Plan

Momentum MoVal, the City of Moreno Valley's Strategic Plan, represents the results of active engagement by Moreno Valley residents and the City Council in charting the community's course into the future. Adopted on August 16, 2016, the document provides a course of action for the City's next comprehensive General Plan update. This includes Objective 1.9 to "Ensure the City's General Plan articulates the vision of how Moreno Valley wants to evolve over time, and provides an orderly and predictable process through which this vision is developed and implemented, including new attention to economic development, sustainability, public health, and innovation."

Four (4) initiatives have been adopted with this effort to assist in preparing for and completing the comprehensive General Plan Update. This includes two (2) initiatives related to the completion of the General Plan Annual Report. Initiative 1.9.1 required the preparation of a General Plan Annual Report to the City Council before April 1, 2017 that explains how current land use decisions relate to adopted goals, policies and other implementation measures, and as appropriate, identifies necessary course adjustments consistent with the Strategic Plan. This effort was completed in March of 2017 and serves as the continued course of action to ensure that City actions are consistent with Government Code 65400. Initiative 1.9.2 called for the formation of a working group of key City staff to research and evaluate the General Plan adopted in 2006 as a prerequisite to initiating a comprehensive update of the General Plan. The working group has held periodically meetings as warranted in 2020 as part of the comprehensive General Plan update process.

Additional initiatives included in the City's Strategic Plan articulate a plan of action for completion of the comprehensive General Plan update. These include Initiative 1.9.3, which "includes consideration of incremental set aside of funding in the annual budget development in anticipation of future General Plan update and Initiative 1.9.4, which calls for "conducting the comprehensive update of the City's General Plan and supporting environmental document, including all mandatory elements (including the Housing Element (Cycle 6), which is due to the State on October 15, 2021). The comprehensive General Plan update (MoVal 2040) would also include an Economic Development Element, and other desired optional Elements as authorized by the City Council." This

initiative has been implemented with funding set aside for the update, and a qualified consultant firm (Dyett and Bhatia Urban and Regional Planners) was selected to prepare the General Plan update as part of a competitive RFP process, and has been working on the update for more than a year. The update will include two new optional elements: an Economic Development Element and a Healthy Community Element. A Climate Action Plan will also be developed. The work on the update began in November 2019.

As of January 1, 2018, California's cities, counties, and charter cities are required to either adopt an Environmental Justice Element in their General Plan or integrate Environmental Justice policies and goals into the elements of their General Plan "upon the adoption or next revision of two or more elements concurrently." Gov. Code Sec. 65302(h)(2). An Environmental Justice Element is also part of the comprehensive General plan update and public outreach to obtain input from the public was conducted in the last half of 2020.

In 2018, the State passed Senate Bill No. 1035 which requires the Safety Element to be reviewed not less than once every eight years and revised as necessary to address climate change and resiliency strategies. The intention is to identify new information relating to flood, fire, and other climate hazards not available during the previous revision of the safety element. MoVal 2040 will also include the required changes to the Safety Element.

Assembly Bill 168 – Tribal Consultation

Governor Newsom signed AB 168 into law on September 25, 2020. AB 168 closes the loophole created by SB 35 that allowed developers to gain fast-tracked approval of housing projects at locations with known tribal cultural resources, without being subject to CEQA environmental review or tribal consultation.

AB 168 also states that annual reports on the status of a City's general plan must now include information on the progress of the city in adopting or amending its general plan in compliance with its obligations to consult with California Native American tribes. In addition, local government agencies must provide formal notice to California Native American tribes affiliated with geographic areas proposed for development.

MoVal 2040 has complied with its obligations to consult with California Native American tribes, and to identify and protect, preserve, and mitigate impacts to places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code, pursuant to Chapter 905 of the Statutes of 2004. California Native American Heritage Commission as well as all Tribal agencies on the City of Moreno Valley's consultation list received notification of the comprehensive General Plan Update on April 21, 2020 via certified US mail.

Adopted General Plan Amendments in 2020

The General Plan and Development Code provide the City of Moreno Valley the tools necessary to guide the development of the City. The updated General Plan, which is

under development, will provide direction for the City for decades to come. Implementation of the General Plan includes key projects that demonstrate how the City of Moreno Valley is carrying out the policy and vision of the Plan.

State law allows the General Plan to be amended four times annually. This allows the General Plan to remain a current document responsive to the community's needs. Requests for amendments may be submitted by individuals or initiated by the City.

The following General Plan related projects reviewed and approved in January 2020 through December 2020 are as follows:

Project Number	Action	Description	Location
PEN19-0151 PEN19-0150 PEN19-0152	June 25, 2020 - Planning Commission recommended approval. September 1, 2020 - City Council approval with the second reading of the zoning ordinance on 9/15/20.	Fritz Duda Town Gate Highlands - A proposal to amend the boundaries of the General Plan Land Use Map and City Zoning Map to be consistent and a Tentative Parcel Map to subdivide the project site.	Southeast corner of Ironwood Avenue and Day Street
PEN19-0206 PEN19-0207 PEN19-0204 PEN19-0205	November 12, 2020 - Planning Commission recommended approval. December 15, 2020 – City Council approval	General Plan Amendment from Residential/Office (R/O) to Community Commercial (CC), - Change of Zone from Office Commercial (OC) to Community Commercial (CC) for a proposed drive-thru restaurant and convenience store and gas station.	Northeast corner of Perris Boulevard and Dracaea Avenue

CONCLUSION

The City of Moreno Valley General Plan continues to serve as an effective guide for orderly growth and development, preservation and conservation of open space and natural resources. The document also provides for the efficient expenditure of public funds.

The City of Moreno Valley's legislative bodies have used the 2006 General Plan as a primary source of long-range planning and policy direction. The updated General Plan (MoVal 2040) will be consistent with these efforts and will guide future growth and preserve the quality of life within the community through the next planning period.

MAJOR MILESTONES AND PROJECTS

The City of Moreno Valley is committed to implementing the adopted General Plan, Development Code and Design Guidelines. The Development Code and Design Guidelines, combined with the adopted Landscape Guidelines, are major tools to implement the General Plan.

The purpose of this Annual Report is to highlight significant accomplishments and summarize ongoing General Plan projects that the City of Moreno Valley has been working on since January of 2020. Major accomplishments include key projects that demonstrate how the City of Moreno Valley is carrying out the policy and vision of the General Plan. This report is prepared in accordance with Section 65040.5 of the California Government Code.

Community Development Department – Planning

General Plan Goals, Objectives, Policies

Goal 2.4 - A supply of housing in sufficient numbers suitable to meet the diverse needs of future residents and to support healthy economic development without creating an oversupply of any particular type of housing.

Objective 2.2 - Provide a wide range of residential opportunities and dwelling types to meet the demands of present and future residents of all socioeconomic groups.

Policy 2.2.12 - Densities in excess of the maximum allowable density for residential projects may be permitted pursuant to California density bonus law.

Policy 2.2.13 - Planned Unit Developments (PUD) shall be encouraged for residential construction in order to provide housing that is varied by type, design, form of ownership, and size. PUD's shall also provide opportunities to cluster units to protect significant environmental features and/or provide unique recreational facilities.

Policy 2.2.15 - Encourage a diversity of housing types, including conventional, factory built, mobile home, and multiple family dwelling units.

Objective 2.3 - Promote a sense of community and pride within residential areas through increased neighborhood interaction and enhanced project design.

Major Development Projects in 2020

Major development projects reviewed and approved in January 2020 through December 2020 are as follows:

Project Number	Action	Description	Location

PEN19-0157	March 26, 2020 – Planning Commission approval	Planned Unit Development (PUD) for an 11-Unit Multi-Family Project (4 Duplexes & 3 Detached Units)	North side of Fir Avenue, east of Indian Street
PEN20-0035	April 9, 2020 – Planning Commission approval	Municipal Code Amendment for SB 330 (Consistency "Housing Crisis Act of 2019")	City-wide
PEN18-0228 PEN18-0229 PEN18-0230 PEN18-0217	April 23, 2020 – Planning Commission approval	Kaiser Permanente Hospital - Master Plot Plan, Diagnostic and Treatment Expansion, Energy Center, and related Environmental Impact Report (EIR)	Iris Avenue, west of Oliver Street
PEN18-0154	May 28, 2020 – Planning Commission approval	Tentative Tract Map 37580 (6 lots)	Bradshaw Circle, north of Cactus Avenue
PEN18-0042	May 28, 2020 – Planning Commission approval	Tentative Parcel Map 37429 (2 lots)	Angella Way, east of Indian Street
PEN19-0188	September 10, 2020 - Planning Commission approval	Tentative Tract Map 37725 (66 lots)	Southwest corner of Krameria Avenue and Perris Boulevard

Administratively Approved Housing in 2020

Administratively approved development projects reviewed and approved in January 2020 through December 2020 are as follows:

Project Number	Action	Description	Location
PEN19-0022	January 24, 2020 – Administrative Approval	Plot Plan for an attached 609 square foot Accessory Dwelling Unit (ADU)	Baywood Drive, west of Pan Am Blvd
PEN16-0082	February 2, 2020 – Administrative Approval	Custom Home Review for a duplex (SP 204 VR)	Atwood Avenue, west of Indian Street
PEN19-0072	February 10, 2020 – Administrative Approval	Custom Home Review (2,574 sq. ft.)	Perris Blvd, south of Kalmia Avenue
PEN19-0253	March 20, 2020 – Administrative Approval	Plot Plan for a garage conversion into a 465 sq. ft. Accessory Dwelling Unit (ADU)	Silvertree Road, east of Indian Street
PEN18-0057	April 24, 2020 – Administrative Approval	Custom Home Review (4,599 sq. ft.)	Southeast corner of Lasselle St and Boulder Ridge Dr
PEN19-0242	April 30, 2020 – Administrative Approval	Plot Plan to convert attached garage into an Accessory Dwelling Unit (ADU)	Suncrest Avenue, west of Heacock Street
PEN19-0257	May 28, 2020 - Administrative Approval	Custom Home Review	East side of Mathews Road, north of Ironwood Avenue
PEN19-0258	June 1, 2020 - Administrative Approval	Accessory Dwelling Unit (ADU)	East side of Mathews Road, north of Ironwood Avenue
PEN20-0022	June 1, 2020 - Administrative Approval	Accessory Dwelling Unit (ADU) – detached (750 sq. ft.)	Escondido Court, east of Hubbard Street

PEN20-0079	June 30, 2020 - Administrative Approval	Conversion of an existing attached 2-car garage into a 452 square foot Accessory Dwelling Unit (ADU)	Debra Way, south of Parkland Avenue
PEN18-0219	July 14, 2020 - Administrative Approval	Custom Home Review (1,379 sq. ft.)	Day Street, south of Cottonwood Avenue
PEN19-0256	July 14, 2020 - Administrative Approval	Custom Home Review/Fire Rebuild	Swarens Court, west of Perris Boulevard
PEN19-0085	July 15, 2020 - Administrative Approval	Accessory Dwelling Unit (ADU) – detached	Atwood Avenue, east of Heacock Street.
PEN20-0078	August 5, 2020 - Administrative Approval	Conversion of an existing attached garage into an Accessory Dwelling Unit (ADU)	Nita Drive, south of Ironwood Avenue
PEN20-0088	August 24, 2020 - Administrative Approval	Conversion of an existing attached garage into an Accessory Dwelling Unit (ADU)	Dunlavy Court, east of Davis Street
PEN20-0094	September 10, 2020 - Administrative Approval	Conversion of an existing attached garage into an Accessory Dwelling Unit (ADU)	Morning Ridge, South of Covey Road
PEN20-0010	September 30, 2020 Director's Hearing - Project Approved	Town Gate Square 2-Story Medical Office Building	North side of Eucalyptus Avenue between Day Street and Memorial Drive
PEN20-0148	September 30, 2020 Director's Hearing - Project Approved	Retail Center Development of a new 35,000 square foot Grocery Store at The District	South side of Hemlock Avenue between Heacock Street and Davis Street
PEN20-0083	October 7, 2020 - Administrative Approval	Conversion of an existing attached garage into an Accessory Dwelling Unit (ADU)	Enchanted Way, east of Hubbard Street
PEN20-0117	October 13, 2020 - Administrative Approval	Conversion of an existing attached garage into a Junior Accessory Dwelling Unit (JADU)	Eucalyptus Avenue, east of Perris Boulevard
PEN20-0126	October 21, 2020 - Administrative Approval	Conversion of an existing detached garage into an accessory dwelling unit (ADU)	Ironwood Avenue, east of Vista de Cerros Drive
PEN20-0129	October 21, 2020 - Administrative Approval	Accessory Dwelling Unit (ADU) - detached	Constantine Cir, east of Day Street
PEN19-0241	October 26, 2020 - Administrative Approval	Conversion of an existing attached garage into an Accessory Dwelling Unit (ADU)	Vista Famoso Drive, east of Kitching Street
PEN20-0041	November 10, 2020 Director's Decision - Project Approved	Nandina Warehouse Building Development of a proposed 95,474 square foot industrial building.	South side of Nandina Avenue between Perris Boulevard and Indian Street

PEN19-0201	November 10, 2020 Director's Decision - Project Approved	Small Warehouse Development of a proposed 49,800 square foot industrial building.	Northeast corner of Resource Way and Corporate Way
PEN20-0055	November 29, 2020 - Administrative Approval	Accessory Dwelling Unit (ADU) - detached	Boccaccio Court, east of Morton Road

Extension of Time Applications Approved in 2020

Administratively approved development projects reviewed and approved in January 2020 through December 2020 are as follows:

Project Number	Action	Description	Location
PEN19-0254	February 12, 2020 - Administrative Approval	Extension of time for single family tentative tract map 32459 - subdivision of 11 single family lots (R1)	Northeast corner of Quincy St and Juniper Ave
PEN19-0255	February 12, 2020 - Administrative Approval	Extension of time for tentative tract map 32460 subdivision of 57 single family (RA2) residential lots	Northwest corner of Quincy St and Juniper Ave
PEN18-0242	March 2, 2020 - Administrative Approval	Second Extension of Time for PA06-0092 a 130 Unit Senior Apartment Complex	Heacock St, south of Gregory Ln
PEN20-0015	March 21, 2020- Administrative Approval	Extension of Time for Legacy Park PUD - 221 single family lots (R5) (PEN16-0094)	South of Gentian Ave, west of Perris Blvd
PEN20-0005 PEN20-0006	March 23, 2020- Administrative Approval	Extension of Time for Plot Plan for 58 Multi-family Condominium Units and related Tentative Tract Map 35429 (PEN16-0119 and PEN16-0120)	North of Alessandro Blvd, west of Chara St
PEN17-0019	March 24, 2020 – Administrative Approval	Extension of Time for Custom Home Review (PA13-0064) 2,854 square foot and a 762 square foot garage	Bradshaw Circle north of Cactus Avenue, east of Moreno Beach Drive
PEN19-0250	April 2, 2020 -Administrative Approval	Extension of Time for Tentative Tract Map 31394 for 78 lots (R3). (PA05-0189 / P16-086)	Northeast of Pigeon Pass Road and Hidden Springs Drive
PEN20-0075	June 16, 2020 - Administrative Approval	Extension of Time for TTM 31590 - 96 lot subdivision (PEN18-0105)	West of Moreno Beach Drive, between Alessandro Boulevard and Brodiaea Avenue
PEN19-0075	June 25, 2020 - Administrative Approval	Extension of Time for TTR 33436 (105 Units)	Northwest corner of Ironwood Avenue and Lasselle

PEN19-0236	November 30, 2020 - Administrative Approval	Second Extension of Time for Tract 34681 with 49 units. (PEN16-0143 - Plot Plan & PA06-0052 -TCM 34681).	South of Alessandro Blvd, north of Copper Cove Ln

Public Works

General Plan Goals, Objectives, Policies

Objective 5.1 - Create a safe, efficient and neighborhood- friendly street system.

Program 5-12 - Coordinate with Caltrans to redesign and reconstruct the SR-60 interchanges with Day Street, Perris Boulevard, Nason Street, Moreno Beach Drive, Redlands Boulevard, Theodore Street (now WLC Parkway) and Gilman Springs Road.

Policy 5.1.5 - Incorporate American Disability Act (ADA) and Title 24 requirements in roadway improvements as appropriate.

Policy 6.2.4 - Design, construct and maintain street and storm drain flood control systems to accommodate 10 year and 100 year storm flows respectively.

Major Projects and Activities

Capital Projects Division

- Citywide Pavement Rehabilitation Program for Arterials and Collectors FY 19/20 (construction completed in December 2020)
- Pavement Rehabilitation for Various Local Streets FY 19/20 (construction completed in February 2020)
- Moreno-Alessandro Interim Storm Drain Facility (construction completed in October 2020)
- Alessandro Blvd. - Grant St. Traffic Signal project (construction completed in January 2020)
- Cycle 7 ADA Pedestrian Access Ramps CDBG project (construction completed in November 2019, finaled in January 2020)
- Liberty Lane Sidewalk Improvement (construction completed in November 2019, finaled in January 2020)
- Sunnymead Flaming Arrow Dr. Storm Drain (design completed in September 2020, construction in Spring 2021)
- Juan Bautista De Anza Trail Gap Closure ATP 3 (construction start December 2020)
- SR 60- Moreno Beach Interchange project (design completed in September 2020, construction in Summer 2021)

Transportation Division

- Added 50 intersections to the advanced traffic control system, including almost all of Perris Boulevard, via completion of the ITS Deployment Phase 1B project
- Installed three Dynamic Message Signs on major arterials for en-route traveler information dissemination and public service messages
- Migration of all online intersections to one platform for ease of operation and reduced maintenance costs

Land Development Division

- Number of Inspections (includes all inspections): 5,591
- Number of Permits Issued (all permits): 649
- Number of plan check/entitlement reviews: 1,775
- Public Improvements Secured through bonds, etc.: $28,406,000

Moreno Valley Utility (MVU)

Accomplishments for energy efficiency in 2020 include the following:

- Number of residential energy audits: 230
- Total annual kWh savings (residential and commercial customers): 2,131,005
- Target annual kWh savings: 1,326,027

Completion of Transportation Electrification Roadmap in early 2020. This Roadmap process had two distinct deliverables: (1) provide a needs assessment and identification of strategies for the utility related to transportation electrification; and (2) define actionable steps to achieve the goals identified in the strategies over the next 5 years.

Construction began in late 2020 that will result in the installation of three (3) electric vehicle-charging stations at the Moreno Valley City Hall Annex. When completed, these EV chargers will be the third set of EV charging stations owned and operated by the City's electric utility.

The City owns and operates a 500kW solar carport system that generated 867,940 kWh in 2020. Construction of an additional 50kW solar carport system at the Moreno Valley City Hall Annex began in late 2020.

As of December 31, 2020, approximately 20% of MVU customers have installed over 10 MW of solar.

PARKS & COMMUNITY SERVICES

General Plan Goals, Objectives, Policies

Objective 2.18 - Promote social services programs that meet the special needs for childcare, the elderly, and the disabled.

Policies 2.18.1 - Ensure that a full range of human service programs are available to meet

the lifetime development needs of residents of all ages, including the special needs of seniors, families, children, disabled persons, and youth groups.

Objective 4.2 - Provide safe, affordable and accessible recreation facilities and programs to meet the current and future needs of Moreno Valley's various age and interest groups and promote the provision of private recreational facilities.

Policy 4.2.2 - Community parks shall provide opportunities for participation in sports and related athletic activities, water-oriented recreation and other special interest activities (e.g. golf, tennis, equestrian, etc.).

Policy 7.5.4 - Encourage efficient energy usage in all city public buildings.

Policy 7.5.5 - Encourage the use of solar power and other renewable energy systems.

Major Projects and Activities

In addition to overseeing the MoVal Meals, Senior Eats, Family Service Association meal programs (serving over 110,000 meals throughout the pandemic), hosting multiple food drives, implementing the Community Learning & Internet Connectivity (CLiC) Initiative, and the “We’ve Got You Covered” Mask Campaign, Parks & Community Services has been busy this year creatively adapting many of its services to the realities of the pandemic. Moving online, Parks has conducted more than 3,500 virtual community class sessions, served more than 29,200 students in the ASES after-school and Time 4 Tots programs, created the MoVal Virtual Community Center, coordinated eSports leagues, hosted over 30 weekly social media challenges to engage the community, and provided 20 citywide special events, that included the popular drive-in movie series, for thousands of residents.

Residents enjoyed getting outdoors with over 9,000 rounds of golf played at the Cottonwood Golf Center, which also served as a cooling center and COVID testing site for the community.

2020 also saw the dedication of the beautiful new Civic Center Amphitheater and Park, which will be a premier outdoor performance venue.

The Mayor and City Council broke ground on Santiago Park, Moreno Valley’s 33rd Community Park in August 2020. The park will include shade shelters, restroom, lighted trail path, playground, multi-use field, perimeter fencing, and a fitness center that will accommodate 84 exercises.

Awards

Parks & Community Services Department received both the Helen Putnam Award for Excellence, League of California Cities (ASES Program) and Creating Community Award of Excellence - Expanded Learning Program, California Parks and Recreation in 2020.

FINANCIAL & MANAGEMENT SERVICES DEPARTMENT

General Plan Goals, Objectives, Policies

Objective 2.16 - Maintain local library facilities and reserves in accordance with the following minimum standards: 0.5 square feet of library space and 1.2 volumes per capita.

Policy 2.16.2 - Provide for the expansion of library facilities as needed to keep pace with the growing population of Moreno Valley.

Objective 2.15 - Ensure that all Moreno Valley residents have access to high quality educational facilities, regardless of their socioeconomic status or location within the City.

Policy 2.18.1 - Ensure that a full range of human service programs are available to meet the lifetime development needs of residents of all ages, including the special needs of seniors, families, children, disabled persons, and youth groups.

Objective 8.3 - Rehabilitate mobile homes, for very low-income homeowners, in mobile home parks citywide, under the Mobile Home Grant Program. (“Brush of Kindness”)

Objective 8.7 - Rehabilitate affordable multi-family units, citywide, through utilization of the Rental Rehabilitation Program or Federal Grant Funds.

Action 3.5 - Administer contract with fair housing agency (Previously referred to as Program 8.7). These services provide educating households on their rights and responsibilities and assist residents with fair housing issues.

Action 5.3 - Administer program(s) to provide grant funds for neighborhood beautification in targeted neighborhoods (Previously referred to as Program 8.3).

Major Projects and Activities

Library

Moreno Valley opened its third library site in September 2020. The Iris Plaza Branch a dedicated technology area equipped with four gaming stations, virtual reality, robotics kits, more; six public computers, and a printer-photocopier station that accepts both in-house and remote requests; free WiFi; and a self-checkout kiosk.

Technology Services Division

Installation of WiFi network cabling and equipment at three City facilities, Community Recreation Center's Community Garden area, at the Cottonwood Golf Center banquet and meeting rooms, and the Senior Center, to provide free public Wi-Fi. The U.S. Department of Housing and Urban Development (HUD) Emergency Solutions Grants Program - Coronavirus (ESG-CV) provided funding for the project.

By the end of 2020, Technology Services increased the number of WiFi hotspots available throughout Moreno Valley from 54 to 154.

Moreno Valley GIS expanded its web presence with the “MoVal GeoHub” (https://gis-moval.opendata.arcgis.com/). This public platform contains the City's interactive maps and applications. These resources provide citizens the ability to visualize geospatial data and relationships to enable a better understanding of our community.

Administration/Housing

The City of Moreno Valley remains committed to maximizing existing resources and opportunities to achieve a better quality of life for its low to-moderate income residents.

- Assisted 4,058 households with Fair Housing Services
- Provided homelessness
- Prevention to nine (9) persons and street outreach to sixteen (16) persons
- Built or rehabilitated 51 housing units, including 4 new multi-family rental units rehabilitated, 41 single family homes rehabilitated and 6 homes provided energy efficiency solar systems
- Aided 62,241 individuals through public services, including senior services, employment resources, youth services, and the MoVal Policing program.
- Street improvements and ADA improvements funded by HUD’s Community Development Block Grant (CDBG) Program completed in 2019/20 benefited cumulatively 599,713 low-moderate income persons.

Appendix A: 2020 Housing Element Annual Progress Report Table

Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

Building Permits Issued by Affordability Summary		
Income Level		**Current Year**
Very Low	Deed Restricted	0
	Non-Deed Restricted	0
Low	Deed Restricted	0
	Non-Deed Restricted	0
Moderate	Deed Restricted	0
	Non-Deed Restricted	311
Above Moderate		120
Total Units		**431**

Note: Units serving extremely low-income households are included in the very low-income permitted units totals

Housing Applications Summary	
Total Housing Applications Submitted:	27
Number of Proposed Units in All Applications Received:	862
Total Housing Units Approved:	424
Total Housing Units Disapproved:	0

Use of SB 35 Streamlining Provisions	
Number of Applications for Streamlining	0
Number of Streamlining Applications Approved	0
Total Developments Approved with Streamlining	0
Total Units Constructed with Streamlining	0

Units Constructed - SB 35 Streamlining Permits			
Income	**Rental**	**Ownership**	**Total**
Very Low	0	0	0
Low	0	0	0
Moderate	0	0	0
Above Moderate	0	0	0
Total	0	0	0

Cells in grey contain auto-calculation formulas

C

Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT
Housing Element Implementation

(CCR Title 25 §6202)

Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

Table A
Housing Development Applications Submitted

Project Identifier					Unit Types		Date Application Submitted	Proposed Units - Affordability by Household Incomes								Total Approved Units by Project	Total Disapproved Units by Project	Streamlining	Notes
1					2	3	4	5							6	7	8	9	10
Prior APN+	Current APN	Street Address	Project Name+	Local Jurisdiction Tracking ID+	Unit Category (SFA,SFD,2 to 4,5+,ADU,MH)	Tenure R=Renter O=Owner	Date Application Submitted (see instructions)	Very Low-Income Deed Restricted	Very Low-Income Non Deed Restricted	Low-Income Deed Restricted	Low-Income Non Deed Restricted	Moderate-Income Deed Restricted	Moderate-Income Non Deed Restricted	Above Moderate-Income	Total PROPOSED Units by Project	Total APPROVED Units by project	Total DISAPPROVED Units by Project	Was APPLICATION SUBMITTED Pursuant to GC 65913.4(b)? (SB 35 Streamlining)	Notes+
Summary Row: Start Data Entry Below								0	0	0	426	0	39	397	862	424	0	0	
	479230027	NWC of Chara St & Alessandro Blvd	Extension of Time for Plot Plan for 58 Multi-family Condominium Units "Chara Villa" (r/t PEN16-0119)	PEN20-0005	5+	O	1/7/2020							58	58	58		No	Extension of Time - Approved
	473200004	29294 HIGHLAND BLV, MORENO VALLEY, CA 92555	Custom Home Review for a 1,980 square foot manufactured home and a 440 square foot detached garage in the Rural Residential (RR) zone - APN: 473200004 - r/t CCR19-2485	PEN20-0014	SFD	O	2/14/2020							1	1			No	Custom Home - In Review
	485220023	Gentian St	Extension of Time for Legacy Park - 221 single family lots	PEN20-0015	5+	O	2/14/2020							221	221	221		No	Extension of Time - Approved
	292181001	23778 HEMLOCK AVE, MORV, CA 92557	Amended Plot Plan/Substantial Conformance for the	PEN20-0019	5+	R	2/20/2020						39		39	39		No	Amended Plot Plan - Approved
	475300046	24955 ESCONDIDO CT, MORENO	Detached 750 square foot ADU	PEN20-0022	ADU	O	3/2/2020							1	1	1		No	ADU - approved
	473250028	Pettit Rd	Custom Home Review for 2743 SF dwelling unit plus 969 SF attached garage on Pettit Road, north of Locust Avenue at the northerly city limit	PEN20-0025	SFA	O	3/3/2020							1	1			No	Resubmittal Required
	473250028	Pettit Rd	Accessory Dwelling Unit (ADU) for a 482 SF dwelling unit on Pettit Road to be built concurrently with Custom Home Review PEN20-0025	PEN20-0026	ADU	O	3/3/2020							1	1			No	Resubmittal Required
	482331017	24214 JIMSON PL, MORENO VALLEY, CA 92553	Custom Home Review (Fire Rebuild) - R/T BSR17-0044	PEN20-0030	SFA	O	3/11/2020							1	1			No	Resubmittal Required
	256261010	21110 BOCCACCIO CT, MORENO VALLEY, CA 92557	1,200 Square Foot Detached Accessory Dwelling Unit (ADU)	PEN20-0055	ADU	O	4/16/2020							1	1	1		No	ADU - approved
	486240011	Moreno Beach Dr	Extension of Time for TTM 31590 - 96 lot subdivision	PEN20-0075	SFA	O	5/14/2020							96	96	96		No	Extension of Time - Approved
	481033001	12135 NITA DR, MORENO VALLEY, CA 92557	Garage conversion to an ADU	PEN20-0078	ADU	O	5/26/2020							1	1	1		No	ADU - approved
	264082050	11098 DEBRA WAY, MORENO VALLEY, CA 92557	452 square foot Accessory Dwelling Unit (ADU/Garage Conversion)	PEN20-0079	ADU	O	5/28/2020							1	1	1		No	ADU - approved

Attachment: Appendix A - 2020 Housing Element Annual Progress Report Table [Revision 1] (4314 : General Plan Annual Progress Report)

	256191026	21286 LILIUM CT, MORENO VALLEY, CA 92557	detached 1195 square foot ADU	PEN20-0082	ADU	O	6/4/2020						1	1			No	ADU - In Review
	475233011	24946 ENCHANTED WAY, MORENO VALLEY, CA 92557	garage conversion to an ADU	PEN20-0083	ADU	O	6/9/2020						1	1	1		No	ADU - approved
	475251016	24312 DUNLAVY CT, MORENO VALLEY, CA 92557	ADU/Garage Conversion	PEN20-0088	ADU	O	6/24/2020						1	1	1		No	ADU - approved
	474180030	SEC of Kitching St and Overlook Cir	Custom Home - southeast corner of Kitching Street and Overlook Circle	PEN20-0092	SFA	O	7/2/2020						1	1			No	Resubmittal Required
	474575001	10517 MORNING RIDGE DR, MORENO VALLEY, CA 92557	599 square foot ADU/Garage Conversion	PEN20-0094	ADU	O	7/9/2020						1	1	1		No	ADU - approved
	481140016	12585 INDIAN ST, MORENO VALLEY, CA 92553	ADU/Garage Conversion	PEN20-0105	ADU	O	8/4/2020						1	1			No	ADU - In Review
	479090012	25241 EUCALYPTUS AVE, MORENO VALLEY, CA 92553	conversion of an existing attached two car garage into a Junior Accessory Dwelling Unit (ADU)	PEN20-0117	ADU	O	8/6/2020						1	1	1		No	ADU - approved
	474250059	26253 IRONWOOD AVE, MORENO VALLEY, CA 92557	convert 1200 square feet of an existing detached garage into an ADU	PEN20-0126	ADU	O	8/13/2020						1	1	1		No	ADU - approved
	485142018	15332 THERESA AVE, MORENO VALLEY, CA 92551	convert 478 square foot garage to an ADU	PEN20-0128	ADU	O	8/19/2020						1	1			No	ADU - In Review
	264373011	11775 CONSTANTINE CIR, MORENO VALLEY, CA 92557	ADU 1,200 square foot	PEN20-0129	ADU	O	8/19/2020						1	1	1		No	ADU - approved
	474371018	Steeplechase Dr	Custom Home	PEN20-0157	SFA	O	9/17/2020						1	1			No	In Review
	291172013	22143 BAY AVE, MORENO VALLEY, CA 92553	814 square foot attached ADU	PEN20-0178	ADU	O	9/30/2020						1	1			No	ADU - In Review
	484211016	25322 BILLIE DR, MORENO VALLEY, CA 92553	garage conversion to Accessory Dwelling Unit (ADU)	PEN20-0185	ADU	O	10/8/2020						1	1			No	ADU - In Review

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Table A2

Annual Building Activity Report Summary - New Construction, Entitled, Permits and Completed Units

Project Identifier					Unit Types		Affordability by Household Incomes - Completed Entitlement								Affordability by Household Incomes - Building Permits									Affordability by Household Incomes - Certificates of Occupancy										Streamlining	Infill	Housing with Financial Assistance and/or Deed Restrictions		Housing without Financial Assistance or Deed Restrictions	Term of Affordability or Deed Restriction	Demolished/Destroyed Units			Notes
1					2	3	4							5	6	7								8	9	10							11	12	13	14	15	16		17	18	19	20			21
Prior APN*	Current APN	Street Address	Project Name*	Local Jurisdiction Tracking ID*	Unit Category (SFA,SFD,2 to 4,5+ ,ADU,MH)	Tenure R=Renter O=Owner	Very Low-Income Deed Restricted	Very Low-Income Non Deed Restricted	Low- Income Deed Restricted	Low- Income Non Deed Restricted	Moderate-Income Deed Restricted	Moderate-Income Non Deed Restricted	Above Moderate-Income	Entitlement Date Approved	# of Units issued Entitlements	Very Low-Income Deed Restricted	Very Low-Income Non Deed Restricted	Low- Income Deed Restricted	Low- Income Non Deed Restricted	Moderate-Income Deed Restricted	Moderate-Income Non Deed Restricted	Above Moderate-Income	Building Permits Date Issued	# of Units Issued Building Permits	Very Low-Income Deed Restricted	Very Low-Income Non Deed Restricted	Low- Income Deed Restricted	Low- Income Non Deed Restricted	Moderate-Income Deed Restricted	Moderate-Income Non Deed Restricted	Above Moderate-Income	Certificates of Occupancy or other forms of readiness (see instructions) Date Issued	# of Units issued Certificates of Occupancy or other forms of readiness	How many of the units were Extremely Low Income?*	Was Project APPROVED using GC §§913.4(b)? (SB 35 Streamlining) Y/N	Infill Units? Y/N*	Assistance Programs for Each Development (see instructions)	Deed Restriction Type (see instructions)	For units affordable without financial assistance or deed restriction, explain how the locality determined the units were affordable (see instructions)	Term of Affordability or Deed Restriction (years) (If affordable in perpetuity enter 1000)*	Number of Demolished/Destroyed Units*	Demolished or Destroyed Units*	Demolished/Destroyed Units Owner or Renter*	Notes*
Summary Row: Start Data Entry Below							0	0	0	0	0	97	329		426	0	0	0	0	0	311	120		431	0	0	0	28	0	53	136		216	0	0							2	0	0	
	479230027	NWC of Chara St & Alessandro Blvd	Extension of Time - 58 Condo Units "Chara Villa" (r/t PEN16-0118)	PEN20-0005								58	0	1/26/2020	58									0								0		N					R10 -R20 Zoning is considered Moderate income				R15 - Condos
	485220023	Gentian St	Extension of Time for Legacy Park – PUD: 221 single family lots	PEN20-0015	5+	R							221	3/27/2020	221									0								0		N											
	475300046	24955 ESCONDIDO CT., MORENO VALLEY, CA 92557	Detached 750 square feet ADU	PEN20-0022	ADU	O							1	6/1/2020	1									0								0		N											
	256261010	21110 BOCCACCIO CT., MORENO VALLEY, CA 92557	1,200 Square Foot Detached Accessory Dwelling Unit (ADU)	PEN20-0055	ADU	O							1	9/29/2020	1									0								0		N											
	486240011	Moreno Beach Dr	Extension of Time for TTM 31590 - 96 lot subdivision	PEN20-0075	SFA	O							96	6/16/2020	96									0								0		N											
	481033001	12135 NITA DR., MORENO VALLEY, CA 92557	Garage conversion to an ADU	PEN20-0078	ADU	O							1	8/5/2020	1									0								0		N											
	264082050	11098 DEBRA WAY, MORENO VALLEY, CA 92557	452 square foot Accessory Dwelling Unit (ADU/Garage Conversion)	PEN20-0079	ADU	O							1	6/30/2020	1									0								0		N											
	475233011	24946 ENCHANTED WAY, MORENO VALLEY, CA 92557	garage conversion to an ADU	PEN20-0083	ADU	O							1	10/7/2020	1									0								0		N											
	475251016	24312 DUNLAVY CT, MORENO VALLEY, CA 92557	ADU/Garage Conversion	PEN20-0088	ADU	O							1	8/24/2020	1									0								0		N											
	474575001	10517 MORNING RIDGE DR, MORENO VALLEY, CA 92557	599 square foot ADU/Garage Conversion	PEN20-0094	ADU	O							1	9/10/2020	1									0								0		N											
	479099012	25241 EUCALYPTUS AVE, MORENO VALLEY, CA 92553	conversion of an existing attached two car garage into a Junior Accessory Dwelling Unit (ADU)	PEN20-0117	ADU	O							1	10/13/2020	1									0								0		N											
	474250059	26253 IRONWOOD AVE, MORENO VALLEY, CA 92557	convert 1200 square feet of an existing detached garage into an ADU	PEN20-0126	ADU	O							1	10/21/2020	1									0								0		N											
	264373011	11775 CONSTANTINE CIR, MORENO VALLEY, CA 92557	ADU 1,200 square foot	PEN20-0129	ADU	O							1	10/21/2020	1									0								0		N											
	474230005	26549 KALMIA AVE	New ADU	PEN18-0068/BFR19-0089	ADU	O							1	5/30/2019	1							1	2/27/2020	1								0		N											
	475032032	11133 INDAN ST	New ADU	PEN18-0076/BFR19-0104	ADU	O							1	7/17/2018	1							1	8/24/2020	1								0		N											
	479291012	13548 MEADOWLANDS CT	New ADU	PEN18-0185/BFR19-0119	ADU	O							1	7/12/2019	1							1	7/2/2020	1								0		N											
	475080008	11351 HUBBARD ST	Unpermitted structure into ADU	PEN18-0087/BFR19-0181	ADU	O							1	2/27/2019	1							1	5/21/2020	1								0		N											
	264261033	22753 WILD GERANIUM LN	Convert garage into ADU	PEN19-0208/BFR20-0009	ADU	O							1	12/30/2019	1							1	6/2/2020	1								0		N											
	291325003	22749 BAYWOOD DR	New ADU	PEN19-0022/BFR20-0042	ADU	O							1	1/24/2020	1							1	7/8/2020	1								0		N											
	482414016	14899 SILVERTREE RD	Convert garage into ADU	PEN19-0253/BFR20-0054	ADU	O							1	3/20/2020	1							1	10/26/2020	1								0		N											
	292211001	23782 HEMLOCK AVE	Bldg A - Hemlock Garden Units 1-6	PEN20-0013/BFR19-0125	5+	R						6		4/29/2020	6						6		6/30/2020	6								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292211001	23784 HEMLOCK AVE	Bldg B- Hemlock Garden Units 7-12	PEN20-0013/BFR19-0132	5+	R						6		4/29/2020	6						6		6/30/2020	6								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292181001	23786 HEMLOCK AVE	Bldg C - Hemlock Garden Units 13-20	PEN20-0013/BFR19-0133	5+	R						8		4/29/2020	8						8		6/30/2020	8								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292181001	23788 HEMLOCK AVE	Bldg D - Hemlock Garden Units 21-25	PEN20-0013/BFR19-0134	5+	R						5		4/29/2020	5						5		6/30/2020	5								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292181001	23790 HEMLOCK AVE	Bldg E - Hemlock Garden Units 26-28	PEN20-0013/BFR19-0135	5+	R						3		4/29/2020	3						3		6/30/2020	3								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292181001	23792 HEMLOCK AVE	Bldg F - Hemlock Garden Units 29-38	PEN20-0013/BFR19-0136	5+	R						10		4/29/2020	10						10		6/30/2020	10								0		N					R10 -R20 Zoning is considered Moderate income				R15
	292181001	23790 HEMLOCK AVE	Bldg 5 - Hemlock Garden (Manager's Unit 39)	PEN20-0013/BFR19-0137	5+	R						1		4/29/2020	1						1		6/30/2020	1								0		N					R10 -R20 Zoning is considered Moderate income				R15
	263132030	13153 EDGEMONT ST	Bldg #1 - Apollo III Units 1-4	PEN18-0064/BFR20-0077	5+	R							4	11/14/2019	4							4	12/16/2020	4								0		N											R10
	263132030	13165 EDGEMONT ST 5-8	Bldg #2 - Apollo III Units 5-8	PEN18-0064/BFR20-0078	5+	R							4	11/14/2019	4							4	12/16/2020	4								0		N											R10
	263132030	13177 EDGEMONT ST 9-12	Bldg #3 - Apollo III Units 9-12	PEN18-0064/BFR20-0079	5+	R							4	11/14/2019	4							4	12/16/2020	4								0		N											R10
	263132030	13191 EDGEMONT ST 15-18	Bldg #4 - Apollo III Units 15-18	PEN18-0064/BFR20-0080	5+	R							4	11/14/2019	4							4	12/16/2020	4								0		N											R10
	263132030	13189 EDGEMONT ST 13-14	Bldg #5 - Apollo III Units 13-14	PEN18-0064/BFR20-0081	5+	R							2	11/14/2019	2							2	12/16/2020	2								0		N											R10
	486280054	14302 LASSELLE ST	Villa Annette - Bldg 3 (10 units)	PEN19-0007/BFR19-0109	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14372 LASSELLE ST	Villa Annette - Bldg 1 (14 units)	PEN19-0007/BFR19-0110	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14316 LASSELLE ST	Villa Annette - Bldg 4 (18 units)	PEN20-0019/BFR19-0131	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14344 LASSELLE ST	Villa Annette - Bldg 5 (18 units)	PEN20-0019/BFR20-0132	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14358 LASSELLE ST	Villa Annette - Bldg 6 (18 units)	PEN20-0019/BFR20-0133	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14386 LASSELLE ST	Villa Annette - Bldg 7 (18 units)	PEN20-0019/BFR20-0134	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14414 LASSELLE ST	Villa Annette - Bldg 8 (18 units)	PEN20-0019/BFR20-0135	5+	R						18		8/5/2019	18						18		9/30/2020	18								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14330 LASSELLE ST	Villa Annette - Bldg 2 (14 units)	PEN20-0019/BFR20-0136	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14442 LASSELLE ST	Villa Annette - Bldg 9 (14 units)	PEN20-0019/BFR20-0137	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14470 LASSELLE ST	Villa Annette - Bldg 10 (14 units)	PEN20-0019/BFR20-0138	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14498 LASSELLE ST	Villa Annette - Bldg 11 (14 units)	PEN20-0019/BFR20-0139	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14484 LASSELLE ST	Villa Annette - Bldg 12 (14 units)	PEN20-0019/BFR20-0140	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14456 LASSELLE ST	Villa Annette - Bldg 13 (14 units)	PEN20-0019/BFR20-0141	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	486280054	14428 LASSELLE ST	Villa Annette - Bldg 14 (14 units)	PEN20-0019/BFR20-0142	5+	R						14		8/5/2019	14						14		9/30/2020	14								0		N					R10 -R20 Zoning is considered Moderate income				R20 (218 H)
	482030031	24268 ATWOOD AVE	Demolish Existing SFD and Replace with New Custom SFD 1500 SF	PEN18-0072/BFR19-0008	SFD	O							1	1/24/2019	1							1	12/15/2020	1								0		N											
	474230005	26545 KALMIA AVE	Custom Home - 3,864	PEN18-0063/BFR19-0088	SFD	O							1	5/14/2019	1							1	02/27/2020	1								0		N											
	485081043	24897 JOHN F KENNEDY DR Apt E	Caretakers Apt 1,576 SF - (Self Storage Facility - Bldg E)	PEN17-0135/BFR19-0092	2 to 4	R							1	9/4/2018	1							1	04/09/2020	1								0		N											
	256150030	21089 JENNINGS CT	Custom Home - 3602 SF	PA15-0047/BFR20-0028	SFD	O							1	6/16/2005	1							1	03/04/2020	1								0		N											
	259541017	23066 VALLEY VISTA LN	TR 24203 KB Boulder Ridge - PH 1 Plan 4AR, Lot 52 - SFD	PEN18-0145/BFT19-0336	SFD	O							1	8/23/2018	1							1	04/06/2020	1									1	12/28/2020	1	N									
	259541021	23010 VALLEY VISTA LN	KB Boulder Ridge TR 24203 PH 2 - Plan 4C, Lot 56 - SFD	PEN18-0145/BFT19-0337	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	10/12/2020	1	N									
	259531003	9617 TRAILHEAD LN	TR 24203 KB Boulder Ridge - Plan 4CR, Lot 60 - SFD	PEN18-0145/BFT19-0338	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	06/01/2020	1	N									
	259532006	9596 TRAILHEAD LN	KB Boulder Ridge TR 24203 PH 2 - Plan 4A, Lot 71 - SFD	PEN18-0145/BFT19-0339	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	08/31/2020	1	N									
	259531002	9603 TRAILHEAD LN	TR 24203 KB Boulder Ridge - Plan 1BR, Lot 59 - SFD 1551 sf	PEN18-0145/BFT19-0340	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	05/27/2020	1	N									
	259541022	9575 TRAILHEAD LN	KB Boulder Ridge TR 24203 PH 2 - Plan 1A, Lot 57 - SFD 1551 sf	PEN18-0145/BFT19-0341	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	05/27/2020	1	N									
	259541020	23024 VALLEY VISTA LN	TR 24203 KB Boulder Ridge - Plan 1CR, Lot 55 - SFD 1551 sf	PEN18-0145/BFT19-0342	SFD	O							1	8/23/2018	1							1	04/06/2020	1									1	09/15/2020	1	N									
	259532004	9624 TRAILHEAD LN	TR 24203 KB Boulder Ridge - Plan2B, Lot 69 - SFD 1751 sf	PEN18-0145/BFT19-0343	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	06/01/2020	1	N									
	259531001	9589 TRAILHEAD LN	KB Boulder Ridge TR 24203 PH 2 - Plan 2C, Lot 58 - SFD 1751 sf	PEN18-0145/BFT19-0344	SFD	O							1	8/23/2018	1							1	01/03/2020	1									1	06/01/2020	1	N									
	259541018	23052 VALLEY VISTA LN	TR 24203 KB Boulder Ridge - Plan 2BR, Lot 53 - SFD 1751 sf	PEN18-0145/BFT19-0345	SFD	O							1	8/23/2018	1							1	04/06/2020	1									1	08/31/2020	1	N									

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Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

	259532005	9610 TRAILHEAD LN	TR 24203 KB Boulder Ridge - Plan 3C, Lot 70 - SFD 2091 sf	PEN18-0145/BFT19-0346	SFD	O							1	8/23/2018	1							1	01/03/2020	1							1	05/27/2020	1		N									
	259541019	23038 VALLEY VISTA LN	TR 24203 KB Boulder Ridge - Plan 3AR, Lot 54 - SFD 2091 sf	PEN18-0145/BFT19-0347	SFD	O							1	8/23/2018	1							1	04/06/2020	1							1	08/31/2020	1		N									
	474760020	10746 VISTA LN	KB-Daybreak TR 31592 PH 6 Plan 3BR Lot 113: SFD 2696 SF	PEN17-0109/BFT19-0403	SFD	O							1	8/30/2017	1							1	01/03/2020	1							1	5/19/2020	1		N									
	474760021	10745 VISTA LN	KB-Daybreak TR 31592 PH 6 Plan 4DR Lot 114: SFD 2977 SF	PEN17-0109/BFT19-0404	SFD	O							1	8/30/2017	1							1	01/03/2020	1							1	5/14/2020	1		N									
	488430008	12737 MICA PL	Beazer - TR 36933 PH 19 Lot 85 Plan 3CR - SFD 1818 SF	PA10-0038/BFT19-0422	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/21/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430010	12721 MICA PL	Beazer - TR 36933 PH 19 Lot 87 Plan 3DR - SFD 1818 SF	PA10-0038/BFT19-0423	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/21/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430013	12702 MICA PL	Beazer - TR 36933 PH 19 Lot 90 Plan 3AR - SFD 1818 SF	PA10-0038/BFT19-0424	SFD	O						1		3/2/2011	1						1		12/13/2019	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430016	12726 MICA PL	Beazer - TR 36933 PH 19 Lot 93 Plan 3C - SFD 1818 SF	PA10-0038/BFT19-0425	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		10/1/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430017	12734 MICA PL	Beazer - TR 36933 PH 19 Lot 94 Plan 4A SFD 1982 SF	PA10-0038/BFT19-0426	SFD	O						1		3/2/2011	1						1		12/13/2019	1								10/1/2020	0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430009	12729 MICA PL	Beazer - TR 36933 PH 19 Lot 86 Plan 4BR - SFD 1982 SF	PA10-0038/BFT19-0427	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430012	12705 MICA PL	Beazer - TR 36933 PH 19 Lot 89 Plan 2B - SFD 1733 SF	PA10-0038/BFT19-0428	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430015	12718 MICA PL	Beazer - TR 36933 PH 19 Lot 92 Plan 2D - SFD 1733 SF	PA10-0038/BFT19-0429	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		09/10/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430011	12713 MICA PL	Beazer - TR 36933 PH 19 Lot 88 Plan 1AR - SFD 1542 SF	PA10-0038/BFT19-0430	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430014	12710 MICA PL	Beazer - TR 36933 PH 19 Lot 91 Plan 1B - SFD 1542 SF	PA10-0038/BFT19-0431	SFD	O						1		3/2/2011	1						1		12/13/2019	1						1		9/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	478440001	14271 QUINCY ST	KB-Bella Cortina TR 36436 PH 14, Plan 5CR, Lot 1 - SFD 3061 sf	PA12-0005/BFT19-0432	SFD	O							1	5/18/2015	1							1	06/10/2020	1							1	10/27/2020	1		N									
	478440002	14281 QUINCY ST	KB-Bella Cortina TR 36436 PH 14, Plan 3AR, Lot 2 - SFD 2128 sf	PA12-0005/BFT19-0433	SFD	O							1	5/18/2015	1							1	06/10/2020	1							1	11/30/2020	1		N									
	478440003	14291 QUINCY ST	KB-Bella Cortina TR 36436 PH 14, Plan 7BR, Lot 3 - SFD 1722 sf	PA12-0005/BFT19-0434	SFD	O							1	5/18/2015	1							1	06/10/2020	1									0		N									
	478440004	28464 PEONY CIR	KB-Bella Cortina TR 36436 PH 14, Plan 8C, Lot 4 - SFD 2237 sf	PA12-0005/BFT19-0435	SFD	O							1	5/18/2015	1							1	06/10/2020	1							1	11/23/2020	1		N									
	488430003	12712 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 80 Plan 3CR - SFD 1818 SF	PA10-0038/BF19-0436	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/02/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420031	12768 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 164 Plan 3D - SFD 1818 SF	PA10-0038/BF19-0437	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/05/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430006	12736 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 83 Plan 4C - SFD 1982 SF	PA10-0038/BF19-0438	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/02/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420030	12760 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 163 Plan 4BR - SFD 1982 SF	PA10-0038/BFT19-0439	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/05/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430005	12728 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 82 Plan 2A - SFD 1733 SF	PA10-0038/BFT19-0440	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/09/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430004	12720 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 81 Plan 1D - SFD 1542 SF	PA10-0038/BF19-0441	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/02/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488430007	12744 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 84 Plan 1B - SFD 1542 SF	PA10-0038/BFT19-0442	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/02/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420029	12752 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 20 Lot 162 Plan 1AR - SFD 1542 SF	PA10-0038/BFT19-0443	SFD	O						1		3/2/2011	1							1	12/16/2019	1						1		11/02/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	478452020	28605 TUBEROSE LN	KB-Bella Cortina TR 36436 PH 15, Plan 6DR, Lot 158 - SFD 1477 sf	PA12-0005/BFT19-0449	SFD	O							1	05/18/2015	1							1	06/15/2020	1									0		N									
	478452021	28595 TUBEROSE LN	KB-Bella Cortina TR 36436 PH 15, Plan 8B, Lot 159 - SFD 2237 sf	PA12-0005/BFT19-0450	SFD	O							1	5/18/2015	1							1	06/15/2020	1									0		N									
	478452007	28613 BUTTERCUP WAY	KB-Bella Cortina TR 36436 PH 16, Plan 8AR, Lot 145 - SFD 2237 sf	PA12-0005/BFT20-0001	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	11/23/2020	1		N									
	478452008	28603 BUTTERCUP WAY	KB-Bella Cortina TR 36436 PH 16, Plan 6CR, Lot 146 - SFD 1477 sf	PA12-0005/BFT20-0002	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	12/28/2020	1		N									
	478452009	28593 BUTTERCUP WAY	KB-Bella Cortina TR 36436 PH 16, Plan 7A, Lot 147 - SFD 1722 sf	PA12-0005/BFT20-0003	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	12/28/2020	1		N									
	478452010	28583 BUTTERCUP WAY	KB-Bella Cortina TR 36436 PH 16, Plan 3BR, Lot 148 - SFD 2128 sf	PA12-0005/BFT20-0004	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	10/27/2020	1		N									
	478452013	14424 BOTTLEBRUSH WAY	KB-Bella Cortina TR 36436 PH 17, Plan 8DR, Lot 151 - SFD 2237 sf, Gar 418 sf	PA12-0005/BFT20-0005	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	11/23/2020	1		N									
	478452014	14434 BOTTLEBRUSH WAY	KB-Bella Cortina TR 36436 PH 17, Plan 3C, Lot 152 - SFD 2128 sf	PA12-0005/BFT20-0006	SFD	O							1	5/18/2015	1							1	06/15/2020	1							1	11/23/2020	1		N									
	474742016	10393 CLOUD HAVEN DR	KB-Daybreak TR 31592 PH 7 Plan 4BR Lot 36: SFD 2977 SF	PEN17-0109/BF20-0009	SFD	O							1	8/30/2017	1							1	06/23/2020	1							1	12/2/2020	1		N									
	474742017	10381 CLOUD HAVEN DR	KB-Daybreak TR 31592 PH 7 Plan 2BR Lot 37: SFD 2347 SF	PEN17-0109/BF20-0010	SFD	O							1	8/30/2017	1							1	06/23/2020	1							1	11/24/2020	1		N									
	259541015	9584 JACOBS WAY	TR 24203 KB Boulder Ridge PH 4 - Plan 2BR, Lot 50 - SFD	PEN18-0145/BFT20-0052	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	9/22/2020	1		N									
	259541016	9572 JACOBS WAY	TR 24203 KB Boulder Ridge PH 4 - Plan 3BR, Lot 51 - SFD 2091 sf	PEN18-0145/BFT20-0053	SFD	O							1	8/23/2018	1							1	04/14/2020	1									0		N									
	259532007	9601 JACOBS WAY	TR 24203 KB Boulder Ridge PH 4 - Plan 2A, Lot 72 - SFD 1751 sf	PEN18-0145/BFT20-0054	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	08/27/2020	1		N									
	259541013	9606 JACOBS WAY	TR 24203 KB Boulder Ridge PH 5 - Plan 3AR, Lot 48 - SFD	PEN18-0145/BFT20-0055	SFD	O							1	8/23/2018	1							1	04/14/2020	1									0		N									
	259541014	9598 JACOBS WAY	TR 24203 KB Boulder Ridge PH 5 - Plan 1CR, Lot 49 - SFD	PEN18-0145/BFT20-0056	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	10/01/2020	1		N									
	259532008	9615 JACOBS WAY	TR 24203 KB Boulder Ridge PH 5 - Plan 3C, Lot 73 - SFD	PEN18-0145/BFT20-0057	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	12/28/2020	1		N									
	259532009	9629 JACOBS WAY	TR 24203 KB Boulder Ridge PH 5 - Plan 4B, Lot 74 - SFD	PEN18-0145/BFT20-0058	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	08/27/2020	1		N									
	259541012	23082 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 6 - Plan 1BR, Lot 47 - SFD	PEN18-0145/BFT20-0059	SFD	O							1	8/23/2018	1							1	03/04/2020	1							1	08/31/2020	1		N									
	259532010	9643 JACOBS WAY	TR 24203 KB Boulder Ridge PH 6 - Plan 2A, Lot 75 - SFD	PEN18-0145/BFT20-0060	SFD	O							1	8/23/2018	1							1	03/04/2020	1									0		N									
	259532011	9657 JACOBS WAY	TR 24203 KB Boulder Ridge PH 6 - Plan 4BR, Lot 76 - SFD	PEN18-0145/BFT20-0061	SFD	O							1	8/23/2018	1							1	03/04/2020	1							1	9/9/2020	0		N									
	259541011	23094 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 7 - Plan 4CR, Lot 46 - SFD	PEN18-0145/BFT20-0062	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	10/22/2020	1		N									
	259532012	23073 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 7 - Plan 2C, Lot 77 - SFD	PEN18-0145/BFT20-0063	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	10/26/2020	1		N									
	259532013	23087 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 7 - Plan 1A, Lot 78 - SFD	PEN18-0145/BFT20-0064	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	08/31/2020	1		N									
	259532014	23099 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 7 - Plan 4B, Lot 79 - SFD	PEN18-0145/BFT20-0065	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	10/22/2020	1		N									
	259541009	23124 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 8 - Plan 3CR, Lot 44 - SFD	PEN18-0145/BFT20-0066	SFD	O							1	8/23/2018	1							1	04/14/2020	1									0		N									
	259541010	23110 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 8 - Plan 2AR, Lot 45 - SFD	PEN18-0145/BFT20-0067	SFD	O							1	8/23/2018	1							1	04/14/2020	1									0		N									
	259532015	23113 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 8 - Plan 2C, Lot 80 - SFD	PEN18-0145/BFT20-0068	SFD	O							1	8/23/2018	1							1	04/14/2020	1									0		N									

Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT
Housing Element Implementation
(CCR Title 25 §6202)

Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

	259532016	23127 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 8 - Plan 1A, Lot 81 - SFD	PEN18-0145/BFT20-0069	SFD	O							1	8/23/2018	1							1	04/14/2020	1							1	10/26/2020	1		N									
	259541007	23152 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 9 - Plan 4AR Lot 42 - SFD	PEN18-0145/BFT20-0105	SFD	O							1	8/23/2018	1							1	07/09/2020	1									0		N									
	259541008	23138 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 9 - Plan 1RB Lot 43 - SFD	PEN18-0145/BFT20-0106	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	12/28/2020	1		N									
	259532017	23141 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 9 - Plan 2B Lot 82 - SFD	PEN18-0145/BFT20-0107	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	11/23/2020	1		N									
	259532018	23155 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 9 - Plan 3C Lot 83 - SFD	PEN18-0145/BFT20-0108	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	11/23/2020	1		N									
	259541006	23166 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 10 - Plan 3B Lot 41 - SFD	PEN18-0145/BFT20-0109	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	12/28/2020	1		N									
	259532019	23169 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 10 - Plan 4C Lot 84 - SFD	PEN18-0145/BFT20-0110	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	11/23/2020	1		N									
	259532020	23177 SAMANTHA PL	TR 24203 KB Boulder Ridge PH 10 - Plan 1RA Lot 85 - SFD	PEN18-0145/BFT20-0111	SFD	O							1	8/23/2018	1							1	07/09/2020	1							1	11/23/2020	1		N									
	259550006	9672 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 11 - Plan 2B Lot 16 - SFD	PEN18-0145/BFT20-0112	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550007	9654 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 11 - Plan 4C Lot 17 - SFD	PEN18-0145/BFT20-0113	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550008	9636 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 11 - Plan 2B Lot 18 - SFD	PEN18-0145/BFT20-0114	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550009	9622 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 11 - Plan 1A Lot 19 - SFD	PEN18-0145/BFT20-0115	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550010	9608 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 12 - Plan 4C Lot 20 - SFD	PEN18-0145/BFT20-0131	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550011	9594 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 12 - Plan 2B Lot 21 - SFD	PEN18-0145/BFT20-0132	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	259550012	9589 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 12 - Plan 4C Lot 22 - SFD	PEN18-0145/BFT20-0133	SFD	O							1	8/23/2018	1							1	08/18/2020	1									0		N									
	478452016	28594 TUBEROSE LN	MODEL HOME CONVERSION KB Bella Cortina	PA12-0005/BFT20-0134	SFD	O							1	5/18/2015	1							1	07/28/2020	1							1	08/27/2020	1		N									
	478452017	28604 TUBEROSE LN	MODEL HOME CONVERSION KB Bella Cortina	PA12-0005/BFT20-0135	SFD	O							1	5/18/2015	1							1	07/28/2020	1							1	09/10/2020	1		N									
	478452018	28614 TUBEROSE LN	MODEL HOME CONVERSION KB Bella Cortina	PA12-0005/BFT20-0136	SFD	O							1	5/18/2015	1							1	07/28/2020	1							1	08/31/2020	1		N									
	478452019	28615 TUBEROSE LN	MODEL HOME CONVERSION KB Bella Cortina	PA12-0005/BFT20-0137	SFD	O							1	5/18/2015	1							1	07/28/2020	1							1	08/27/2020	1		N									
	259541003	23125 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 13 - Plan 2B Lot 38 - SFD	PEN18-0145/BF20-0138	SFD	O							1	8/23/2018	1							1	08/24/2020	1									0		N									Above Moderate
	259541004	23141 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 13 - Plan 3RC Lot 39 - SFD	PEN18-0145/BF20-0139	SFD	O							1	8/23/2018	1							1	08/24/2020	1									0		N									Above Moderate
	259541005	23155 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 13 - Plan 2RA Lot 40 - SFD	PEN18-0145/BF20-0140	SFD	O							1	8/23/2018	1							1	08/24/2020	1									0		N									Above Moderate
	259540007	23108 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 14 - Plan 1RA, Lot 35 - SFD	PEN18-0145/BF20-0155	SFD	O							1	8/23/2018	1							1	09/09/2020	1									0		N									Above Moderate
	259541002	23113 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 14 - Plan 1A, Lot 37 - SFD 1551 sf	PEN18-0145/BF20-0156	SFD	O							1	8/23/2018	1							1	09/09/2020	1									0		N									Above Moderate
	259541001	23097 PARK VIEW CT	TR 24203 KB Boulder Ridge PH 14 - Plan 4C, Lot 36 - SFD	PEN18-0145/BF20-0157	SFD	O							1	8/23/2018	1							1	09/09/2020	1									0		N									
	474742013	10429 CLOUD HAVEN DR	MODEL HOME CONVERSION KB Daybreak	PEN17-0109/BFT20-0158	SFD	O							1	8/13/2017	1							1	08/11/2020	1							1	9/2/2020	1		N									
	474742014	10417 CLOUD HAVEN DR	MODEL HOME CONVERSION KB Daybreak	PEN17-0109/BFT20-0159	SFD	O							1	8/13/2017	1							1	08/11/2020	1							1	9/2/2020	1		N									
	474742015	10405 CLOUD HAVEN DR	MODEL HOME CONVERSION KB Daybreak	PEN17-0109/BFT20-0160	SFD	O							1	8/13/2017	1							1	08/11/2020	1							1	9/22/2020	1		N									
	488420005	12851 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 64 Plan 4BR - SFD	PA10-0038/BFT20-0165	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420006	12843 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 65 Plan 3AR - SFD	PA10-0038/BFT20-0166	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420007	12835 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 66 Plan 1DR - SFD	PA10-0038/BFT20-0167	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420008	12827 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 67 Plan 4C - SFD	PA10-0038/BFT20-0168	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420009	12819 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 68 Plan 1A - SFD	PA10-0038/BFT20-0169	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420010	12811 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 69 Plan 2B - SFD	PA10-0038/BFT20-0170	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420011	12814 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 70 Plan 1CR - SFD	PA10-0038/BFT20-0171	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420012	12822 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 71 Plan 4DR - SFD	PA10-0038/BFT20-0172	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420013	12830 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 72 Plan 2AR - SFD	PA10-0038/BFT20-0173	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420014	12838 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 73 Plan 3BR - SFD	PA10-0038/BFT20-0174	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420015	12846 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 74 Plan 1CR - SFD	PA10-0038/BFT20-0175	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420016	12854 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 21 Lot 75 Plan 4AR - SFD	PA10-0038/BFT20-0176	SFD	O						1		3/2/2011	1						1		09/24/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	474742012	10441 CLOUD HAVEN DR	KB-Daybreak TR 31592 PH Building Out Plan 4R Lot 32: SFD 2977 sf	PEN17-0109/BFT20-0181	SFD	O							1	8/3/2017	1							1	09/24/2020	1									0		N									
	478452015	28584 TUBEROSE LN	KB-Bella Cortina TR 36436 PH Build Out, Plan 7AR, Lot 153 - SFD 1722 sf	PA12-0005/BFT20-0182	SFD	O							1	5/18/2015	1							1	10/01/2020	1									0		N									
	259550013	9566 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 15 - Plan 1A, Lot 23 - SFD 1551 sf	PEN18-0145/BFT20-0187	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259540006	9569 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 15 - Plan 3RB, Lot 34 - SFD	PEN18-0145/BFT20-0188	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259540005	9555 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 15 - Plan 2RC, Lot 33 - SFD	PEN18-0145/BFT20-0189	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259550014	9552 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 15 - Plan 4C, Lot 24 - SFD	PEN18-0145/BFT20-0190	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259550015	9538 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 16 - Plan 2B, Lot 25 - SFD	PEN18-0145/BFT20-0191	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259550016	9524 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 16 - Plan 1C, Lot 26 - SFD	PEN18-0145/BFT20-0192	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259540003	9527 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 16 - Plan 2B, Lot 31 - SFD	PEN18-0145/BFT20-0193	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	259540004	9541 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 16 - Plan 4RA, Lot 32 - SFD	PEN18-0145/BFT20-0194	SFD	O							1	8/23/2018	1							1	10/05/2020	1									0		N									
	488420017	12862 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 76 Plan 3DR - SFD	PA10-0038/BFT20-0200	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420018	12870 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 77 Plan 2BR - SFD	PA10-0038/BFT20-0201	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420019	12878 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 78 Plan 3AR - SFD	PA10-0038/BFT20-0202	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420020	12886 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 79 Plan 4CR - SFD	PA10-0038/BFT20-0203	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420003	12883 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 62 Plan 2A - SFD	PA10-0038/BFT20-0204	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420004	12875 GREENSTONE WAY	Beazer Hyde Park - TR 36933 PH 22 Lot 63 Plan 1DR - SFD	PA10-0038/BFT20-0205	SFD	O						1		3/2/2011	1						1		10/26/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos

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Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

	482230024	24927 GULFSTREAM LN	TR 36708 Century Comm-Mesa Verde MODELS - Lot 1 SFD (Option: Multi Gen Suite)	PA15-0015/BFT20-0207	SFD	O						1		3/11/2015	1						1		11/13/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	24915 GULFSTREAM LN	TR 36708 Century Comm-Mesa Verde MODELS - Lot 2 - SFD	PA15-0015/BFT20-0208	SFD	O						1		3/11/2015	1						1		11/13/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	24891 GULFSTREAM LN	TR 36708 Century Comm-Mesa Verde MODELS - Lot 3 - SFD	PA15-0015/BFT20-0209	SFD	O						1		3/11/2015	1						1		11/13/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14713 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 56 - Plan 3AR - SFD	PA15-0015/BFT20-0210	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14688 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 68 - Plan 3A - SFD	PA15-0015/BFT20-0211	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14703 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 57 - Plan 2B - SFD	PA15-0015/BFT20-0212	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14708 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 70 - Plan 2A - SFD	PA15-0015/BFT20-0213	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14685 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 59 - Plan 4A - SFD	PA15-0015/BFT20-0214	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14698 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 69 - Plan 4BR - SFD	PA15-0015/BFT20-0215	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14691 STEALTH WAY	TR 36708 Century Comm-Mesa Verde PH 1 - Lot 58 - Plan 5CR - SFD (OPTION: Multi Gen Suite)	PA15-0015/BFT20-0216	SFD	O						1		3/11/2015	1						1		12/23/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	259550017	9510 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 17 - Plan 3B, Lot 27 - SFD	PEN18-0145/BFT20-0217	SFD	O							1	8/23/2018	1							1	12/23/2020	1									0		N									
	259550018	9502 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 17 - Plan 1RA, Lot 28 - SFD	PEN18-0145/BFT20-0218	SFD	O							1	8/23/2018	1							1	12/23/2020	1									0		N									
	259540001	9505 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 17 - Plan 4RC, Lot 29 - SFD	PEN18-0145/BFT20-0219	SFD	O							1	8/23/2018	1							1	12/23/2020	1									0		N									
	259540002	9513 AMERICAN WAY	TR 24203 KB Boulder Ridge PH 17 - Plan 1RA, Lot 30 - SFD	PEN18-0145/BFT20-0220	SFD	O							1	8/23/2018	1							1	12/23/2020	1									0		N									
	482230024	14709 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 71 - Plan 2CR - SFD	PA14-0015/BFT20-0222	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14714 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 117 - Plan 2AR - SFD	PA14-0015/BFT20-0223	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14683 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 73 - Plan 4BR - SFD	PA14-0015/BFT20-0224	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14686 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 114 - Plan 4A - SFD	PA14-0015/BFT20-0225	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14704 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 116 - Plan 4C - SFD	PA14-0015/BFT20-0226	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14697 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 72 - Plan 5A - SFD	PA14-0015/BFT20-0227	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14694 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 2 - Lot 115 - Plan 5BR - SFD	PA14-0015/BFT20-0228	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14679 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 74 - Plan 3C - SFD	PA14-0015/BFT20-0229	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14657 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 76 - Plan 3B - SFD	PA14-0015/BFT20-0230	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14637 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 78 - Plan 3A - SFD 2322 sf	PA14-0015/BFT20-0231	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14669 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 75 - Plan 4AR - SFD	PA14-0015/BFT20-0232	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14645 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 77 - Plan 4CR - SFD	PA14-0015/BFT20-0233	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14634 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 109 - Plan 2CR - SFD	PA14-0015/BFT20-0234	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14650 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 111 - Plan 2AR - SFD	PA14-0015/BFT20-0235	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14676 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 113 - Plan 2BR - SFD	PA14-0015/BFT20-0236	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14642 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 110 - Plan 5A - SFD (OPTION: Multi Gen Suite)	PA14-0015/BFT20-0237	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	482230024	14662 CESSNA LN	TR 36708 Century Comm-Mesa Verde PH 3 - Lot 112 - Plan 5C - SFD (OPTION: Multi Gen Suite)	PA14-0015/BFT20-0238	SFD	O						1		3/11/2015	1						1		12/30/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R10 - Condos
	488410049	12893 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 49 Plan 4B - SFD	PA10-0038/BFT20-0244	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488410051	12877 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 51 Plan 4A - SFD	PA10-0038/BFT20-0245	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488410053	12861 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 53 Plan 4C- SFD	PA10-0038/BFT20-0246	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488410050	12885 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 50 Plan 2D - SFD	PA10-0038/BFT20-0247	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420002	12882 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 61 Plan 2D - SFD	PA10-0038/BFT20-0248	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488410052	12869 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 52 Plan 3B - SFD	PA10-0038/BFT20-0249	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420001	12874 BRECCIA WAY	Beazer Hyde Park - TR 36933 PH 23 Lot 60 Plan 1AR - SFD	PA10-0038/BFT20-0250	SFD	O						1		3/2/2011	1						1		12/11/2020	1									0		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	485220042	15543 AVENGER DR	TR 36760 Meritage Homes/Legacy Park MODELS	PEN16-0095/BFT20-0254	SFD	O							1	8/24/2017	1							1	12/16/2020	1									0		N									R5
	485220042	15557 AVENGER DR	TR 36760 Meritage Homes/Legacy Park MODELS	PEN16-0095/BFT20-0255	SFD	O							1	8/24/2017	1							1	12/16/2020	1									0		N									R5
	485220042	15593 AVENGER DR	TR 36760 Meritage Homes/Legacy Park MODELS	PEN16-0095/BFT20-0256	SFD	O							1	8/24/2017	1							1	12/16/2020	1									0		N									R5
	485220042	15601 AVENGER DR	TR 36760 Meritage Homes/Legacy Park MODELS	PEN16-0095/BFT20-0257	SFD	O							1	8/24/2017	1							1	12/16/2020	1									0		N									R5
	291050013	12050 CLARK ST	Oak Parc Apts BLDG # 19 MF 14 unit	PA07-0016/BFR17-0094	5+	R				14				12/13/2007	14				14				5/3/2019	14				14				1/21/2020	14		N				R30 zoning is considered Low Income					R30 apts
	291050013	12074 CLARK ST	Oak Parc Apts BLDG # 14 MF 14 unit	PA07-0016/BFR17-0095	5+	R				14				12/13/2007	14				14				5/3/2019	14				14				1/21/2020	14		N				R30 zoning is considered Low Income					R30 apts
	473174013	28728 KALMIA AVE	New SFD Custom Home 2,420	PEN18-0062/BFR18-0158	SFD	O							1	8/17/2018	1							1	3/18/2019	1							1	01/14/2020	1		N									
	264192013	11704 HUMMINGBIRD PL	Convert the single car garage to ADU	PEN18-0236/BFR19-0031	SFD	O							1	2/12/2019	1							1	5/3/2019	1							1	3/3/2020	1		N									
	478165021	28891 KIMBERLY AVE	Custom Home 1-story SFD	PEN18-0047/BFR19-0002	SFD	O							1	1/3/2019	1							1	10/1/2019	1							1	7/6/2020	1		N									
	475150054	11613 SABLE WAY	Metric Homes, TR 35606 PH 4 (Build Out) Lot 11	PA07-0129/BFT18-0741	SFD	O							1	4/18/2011	1							1	12/20/2018	1							1	2/19/2020	1		N									
	475150055	11623 SABLE WAY	Metric Homes, TR 35606 PH 4 (Build Out) Lot 12	PA07-0129/BFT18-0742	SFD	O							1	4/18/2011	1							1	12/20/2018	1							1	2/19/2020	1		N									
	260500030	10321 PENGUIN CT	Lennar Meadow Creek TR 32515 Model Conversion	PA05-0057/BRT19-0398	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/10/2020	1		N									
	260500031	10311 PENGUIN CT	Lennar Meadow Creek TR 32515 Model Conversion	PA05-0057/BRT19-0399	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/10/2020	1		N									
	260500032	10301 PENGUIN CT	Lennar Meadow Creek TR 32515 Model Conversion	PA05-0057/BRT19-0400	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/10/2020	1		N									
	260500033	10291 PENGUIN CT	Lennar Meadow Creek TR 32515 Model Conversion	PA05-0057/BRT19-0401	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/10/2020	1		N									
	260500034	10292 PENGUIN CT	Lennar Meadow Creek TR 32515 Model Conversion	PA05-0057/BRT19-0402	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/10/2020	1		N									
	260490047	23173 FREESIA PL	Lennar TR 32515 PH 17 LOT 122 Plan 1C; SFD	PA05-0057/BRT19-0212	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/16/2020	1		N									

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	260490048	23161 FREESIA PL	Lennar TR 32515 PH 17 LOT 123 Plan 1YB; SFD	PA05-0057/BRT19-0213	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/16/2020	1		N									
	260490049	23149 FREESIA PL	Lennar TR 32515 PH 17 LOT 124 Plan 1A; SFD	PA05-0057/BRT19-0214	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/22/2020	1		N									
	260490050	23137 FREESIA PL	Lennar TR 32515 PH 17 LOT 125 Plan 1YC; SFD	PA05-0057/BRT19-0215	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	01/22/2020	1		N									
	260480035	10456 SPARROW CT	Lennar TR 32515, Lot 35 SFD	PA05-0057/BRT19-0368	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	03/10/2020	1		N									
	260490011	10383 SNOWY PLOVER CT	Lennar TR 32515 Ph 8 Lot 81 Plan 1XC, SFD	PA05-0057/BRT18-0023	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	03/10/2020	1		N									
	260500035	10302 PENGUIN CT	Lennar Meadow Creek PH BO LOT 157 Plan 4XC; SFD	PA05-0057/BRT19-0302	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	03/10/2020	1		N									
	260500036	10312 PENGUIN CT	Lennar Meadow Creek PH BO LOT 158 Plan 4A; SFD	PA05-0057/BRT19-0303	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	03/10/2020	1		N									
	260500037	10322 PENGUIN CT	Lennar Meadow Creek PH BO LOT 159 Plan 3A; SFD	PA05-0057/BRT19-0304	SFD	O							1	09/27/2006	1							1	11/12/2019	1							1	03/18/2020	1		N									
	488450011	27385 BASALT WAY	Beazer - TR 36933 PH 14 Lot 237 Plan 1AR - SFD	PA10-0038/BFT19-0238	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/07/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450012	27377 BASALT WAY	Beazer - TR 36933 PH 14 Lot 238 Plan 2CR - SFD	PA10-0038/BFT19-0239	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/07/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450013	27369 BASALT WAY	Beazer - TR 36933 PH 14 Lot 239 Plan 4DR - SFD	PA10-0038/BFT19-0240	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/07/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440055	27380 BASALT WAY	Beazer - TR 36933 PH 14 Lot 214 Plan 3C - SFD	PA10-0038/BFT19-0235	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/11/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440054	27372 BASALT WAY	Beazer - TR 36933 PH 14 Lot 213 Plan 2BR - SFD	PA10-0038/BFT19-0236	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/11/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450014	27361 BASALT WAY	Beazer - TR 36933 PH 14B Lot 240 Plan 1AR - SFD	PA10-0038/BFT19-0359	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/11/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440053	27366 BASALT WAY	Beazer - TR 36933 PH 14 Lot 212 Plan 1DR - SFD	PA10-0038/BFT19-0237	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		02/12/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440018	27352 RED ROCK RD	Beazer - TR 36933 PH 16 Lot 169 Plan 1CR - SFD	PA10-0038/BFT19-0372	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/04/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440019	27360 RED ROCK RD	Beazer - TR 36933 PH 16 Lot 170 Plan 2DR - SFD	PA10-0038/BFT19-0286	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/04/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440020	27368 RED ROCK RD	Beazer - TR 36933 PH 16 Lot 171 Plan 3B - SFD	PA10-0038/BFT19-0287	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/04/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440051	27363 RED ROCK RD	Beazer - TR 36933 PH 16 Lot 202 Plan 2B - SFD	PA10-0038/BFT19-0282	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/05/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488440052	27355 RED ROCK RD	Beazer - TR 36933 PH 16 Lot 203 Plan 1A - SFD	PA10-0038/BFT19-0284	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/05/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420039	27347 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 204 Plan 1CR - SFD	PA10-0038/BFT19-0289	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/05/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420039	27347 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 204 Plan 1CR - SFD	PA10-0038/BFT19-0281	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/06/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420038	27339 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 205 Plan 2AR - SFD	PA10-0038/BFT19-0283	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		03/06/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420037	27331 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 206 Plan 3BR - SFD	PA10-0038/BFT19-0396	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420032	27320 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 165 Plan 4BR - SFD	PA10-0038/BFT19-0373	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420033	27328 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 166 Plan 3AR - SFD 1818 SF, Garage 428 SF, Porch 22 SF - MVU Release	PA10-0038/BFT19-0374	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420036	27371 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 207 Plan 4DR - SFD	PA10-0038/BFT19-0375	SFD	O						1		03/02/2011	1						1		10/25/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420034	27336 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 167 Plan 2DR - SFD	PA10-0038/BFT19-0376	SFD	O						1		03/02/2011	1						1		12/13/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420035	27344 RED ROCK RD	Beazer - TR 36933 PH 17 Lot 168 Plan 1B - SFD 1542 SF, Garage 429 SF, Porch 24 SF - MVU Release	PA10-0038/BFT19-0377	SFD	O						1		03/02/2011	1						1		12/13/2019	1						1		04/20/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420041	27334 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 209 Plan 3A - SFD	PA10-0038/BFT19-0285	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/13/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450019	27321 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 245 Plan 3B - SFD	PA10-0038/BFT19-0394	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/13/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450015	27353 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 241 Plan 3BR - SFD	PA10-0038/BFT19-0395	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/13/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420040	27326 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 208 Plan 4C - SFD	PA10-0038/BFT19-0288	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/13/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450017	27337 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 243 Plan 1D; SFD	PA10-0038/BFT19-0390	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/14/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450018	27329 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 244 Plan 2C - SFD	PA10-0038/BFT19-0391	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/14/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488450016	27345 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 242 Plan 4C - SFD	PA10-0038/BFT19-0397	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/14/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420043	27350 BASALT WAY	Beazer - TR 36933 PH 15 Lot 211 Plan 1C - SFD	PA10-0038/BFT19-0392	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420042	27342 BASALT WAY	Beazer TR 36933 Hyde Park PH 15 Lot 210 Plan 2B - SFD	PA10-0038/BFT19-0393	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		05/15/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420021	27337 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 154 Plan 1DR - SFD	PA10-0038/BFT19-0414	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420025	27305 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 158 Plan 1CR - SFD	PA10-0038/BFT19-0415	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420022	27329 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 155 Plan 2CR - SFD	PA10-0038/BFT19-0416	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420023	27321 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 156 Plan 3BR - SFD	PA10-0038/BFT19-0418	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420027	27289 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 160 Plan 3AR - SFD	PA10-0038/BFT19-0419	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420024	27319 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 157 Plan 4AR - SFD	PA10-0038/BFT19-0420	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	488420028	27281 CAPROCK WAY	Beazer - TR 36933 PH 18 Lot 161 Plan 4DR - SFD	PA10-0038/BFT19-0421	SFD	O						1		03/02/2011	1						1		12/02/2019	1						1		07/30/2020	1		N				R10 -R20 Zoning is considered Moderate Income					R15 - Condos
	474760004	24872 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A Plan 2DR Lot 84: SFD	PEN17-0109/BRT19-0117	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474760006	24896 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A_2 Plan 2BR Lot 86: SFD	PEN17-0109/BRT19-0118	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	03/12/2020	1		N									
	474761005	24885 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A Plan 1D Lot 91: SFD	PEN17-0109/BRT19-0119	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474760008	24920 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A_2 Plan 4B Lot 88: SFD	PEN17-0109/BRT19-0120	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	02/21/2020	1		N									
	474761004	24897 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A Plan 4A Lot 90: SFD	PEN17-0109/BRT19-0121	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474761006	24873 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A Plan 4C-Garage Lot 92: SFD	PEN17-0109/BRT19-0122	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474761001	24849 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4A Plan 4B Lot 94: SFD	PEN17-0109/BRT19-0123	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474760002	24848 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 7DR Lot 82: SFD	PEN17-0109/BRT19-0179	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/21/2020	1		N									
	474760005	24884 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 7AR Lot 85: SFD	PEN17-0109/BRT19-0180	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	02/21/2020	1		N									
	474761007	24861 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 7A Lot 93: SFD	PEN17-0109/BRT19-0181	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/21/2020	1		N									
	474761003	24909 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 7CR Lot 89: SFD	PEN17-0109/BRT19-0182	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/22/2020	1		N									
	474760007	24908 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 8C Lot 87: SFD 2155	PEN17-0109/BRT19-0183	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	02/21/2020	1		N									
	474760003	24860 MINERS VIEW LN	KB-Daybreak TR 31592 PH 4B Plan 8CR Lot 83: SFD	PEN17-0109/BRT19-0184	SFD	O							1	8/30/2017	1							1	5/31/2019	1							1	01/21/2020	1		N									
	474742009	10428 PROSPECTOR LN	KB-Daybreak TR 31592 PH 4D Plan 2B Lot 29: SFD	PEN17-0109/BRT19-0189	SFD	O							1	8/30/2017	1							1	8/2/2019	1							1	01/24/2020	1		N									
	474742010	10440 PROSPECTOR LN	KB-Daybreak TR 31592 PH 4D Plan 7A Lot 30: SFD	PEN17-0109/BRT19-0192	SFD	O							1	8/30/2017	1							1	8/2/2019	1							1	01/24/2020	1		N									
	474742007	10404 PROSPECTOR LN	KB-Daybreak TR 31592 PH 4D Plan 7A Lot 27: SFD	PEN17-0109/BRT19-0193	SFD	O							1	8/30/2017	1							1	8/2/2019	1							1	03/02/2020	1		N									
	474742008	10416 PROSPECTOR LN	KB-Daybreak TR 31592 PH 4D Plan 8D Lot 28: SFD	PEN17-0109/BRT19-0194	SFD	O							1	8/30/2017	1							1	8/2/2019	1							1	01/24/2020	1		N									

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Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT
Housing Element Implementation
(CCR Title 25 §6202)

Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

	474742005	10380 PROSPECTOR LN	KB-Daybreak TR 31592 PH 4D Plan 8A Lot 25: SFD	PEN17-0109/BRT19-0195	SFD	O							1	8/30/2017	1							1	8/2/2019	1							1	12/29/2020	1		N									
	474761002	24850 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 7BR Lot 95: SFD	PEN17-0109/BRT19-0241	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/25/2020	1		N									
	474761009	24874 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 4C Lot 97: SFD	PEN17-0109/BRT19-0242	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/26/2020	1		N									
	474760011	24887 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 7C Lot 104: SFD	PEN17-0109/BRT19-0243	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/03/2020	1		N									
	474760009	24863 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 7A Lot 102: SFD	PEN17-0109/BRT19-0244	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/03/2020	1		N									
	474761010	24886 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 1B Lot 98: SFD	PEN17-0109/BRT19-0246	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/26/2020	1		N									
	474760001	24851 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 8D Lot 101: SFD	PEN17-0109/BRT19-0248	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/03/2020	1		N									
	474760010	24875 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 8B Lot 103: SFD	PEN17-0109/BRT19-0249	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/03/2020	1		N									
	474761008	24862 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 3AR Lot 96: SFD	PEN17-0109/BRT19-0250	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/26/2020	1		N									
	474760014	10674 VISTA LN	KB-Daybreak TR 31592 PH 4C Plan 3DR Lot 107: SFD	PEN17-0109/BRT19-0251	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	02/27/2020	1		N									
	474760015	10686 VISTA LN	KB-Daybreak TR 31592 PH 4C Plan 8A Lot 108: SFD	PEN17-0109/BRT19-0252	SFD	O							1	8/30/2017	1							1	9/16/2019	1							1	04/14/2020	1		N									
	474760018	10722 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 1CR Lot 111 SFD	PEN17-0109/BRT19-0307	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	05/14/2020	1		N									
	474760019	10734 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 2AR Lot 112: SFD	PEN17-0109/BRT19-0308	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	05/14/2020	1		N									
	474760016	10698 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 2C Lot 109: SFD	PEN17-0109/BRT19-0309	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	03/12/2020	1		N									
	474760017	10710 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 4B Lot 110: SFD	PEN17-0109/BRT19-0310	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	07/30/2020	1		N									
	474760012	10697 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 7BR Lot 105: SFD	PEN17-0109/BRT19-0311	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	03/20/2020	1		N									
	474760013	10709 VISTA LN	KB-Daybreak TR 31592 PH 5 Plan 8AR Lot 106: SFD	PEN17-0109/BRT19-0312	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	04/06/2020	1		N									
	474761012	24910 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 4CR Lot 100: SFD	PEN17-0109/BFT19-0245	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	06/01/2020	1		N									
	474761011	24898 OLIVE HILL LN	KB-Daybreak TR 31592 PH 4C Plan 8DR Lot 99: SFD	PEN17-0109/BFT19-0247	SFD	O							1	8/30/2017	1							1	10/28/2019	1							1	06/01/2020	1		N									
	478450030	14411 QUINCY ST	KB-Bella Cortina TR 36436 PH 11, Plan 5A, Lot 43 - SFD	PA12-0005/BRT19-0299	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	03/02/2020	1		N									
	478450017	28461 PEAR BLOSSOM LN	KB-Bella Cortina - TR 36436; PH 9A, Plan 3D, Lot 30 - SFD	PA12-0005/BRT19-0152	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	04/23/2020	1		N									
	478450026	28442 PEAR BLOSSOM LN	KB-Bella Cortina; TR 36436 PH 9A, Plan 3CR, Lot 39 - SFD	PA12-0005/BRT19-0154	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	02/11/2020	1		N									
	478450015	28441 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9A, Plan 5AR, Lot 28 - SFD	PA12-0005/BRT19-0155	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	03/26/2020	1		N									
	478450019	28481 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B, Plan 6B, Lot 32 - SFD 1	PA12-0005/BRT19-0157	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	11/23/2020	1		N									
	478450016	28451 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B Plan 7BR, Lot 29 - SFD	PA12-0005/BRT19-0159	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	04/23/2020	1		N									
	478450024	28462 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B Plan 7DR, Lot 37 - SFD	PA12-0005/BRT19-0160	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	02/11/2020	1		N									
	478450018	28471 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B, Plan 8AR, Lot 31 - SFD	PA12-0005/BRT19-0161	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	04/23/2020	1		N									
	478450020	28491 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B, Plan 8CR, Lot 33 - SFD	PA12-0005/BRT19-0162	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	11/23/2020	1		N									
	478450025	28452 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 9B, Plan 8B, Lot 38 - SFD	PA12-0005/BRT19-0163	SFD	O							1	5/18/2015	1							1	6/28/2019	1							1	02/11/2020	1		N									
	478450009	14407 PEAR BLOSSOM LN	KB-Bella Cortina; TR 36436 PH 10, Plan 3A, Lot 22 - SFD	PA12-0005/BRT19-0270	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	07/27/2020	1		N									
	478450014	14457 PEAR BLOSSOM LN	KB-Bella Cortina; TR 36436 PH 10, Plan 3DR, Lot 27 - SFD	PA12-0005/BRT19-0271	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	03/26/2020	1		N									
	478450012	14437 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10A, Plan 5AR, Lot 25 - SFD	PA12-0005/BRT19-0272	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	03/26/2020	1		N									
	478450029	14408 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10, Plan 5BR, Lot 42 - SFD	PA12-0005/BRT19-0273	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	06/01/2020	1		N									
	478450010	14417 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10, Plan 6CR, Lot 23 - SFD	PA12-0005/BRT19-0274	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	07/27/2020	1		N									
	478450013	14447 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10, Plan 6C, Lot 26 - SFD	PA12-0005/BRT19-0275	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	03/26/2020	1		N									
	478450028	14418 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10, Plan 6AR, Lot 41 - SFD	PA12-0005/BRT19-0276	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	06/01/2020	1		N									
	478450008	14397 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10 Plan 7DR, Lot 21 - SFD	PA12-0005/BRT19-0277	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	07/27/2020	1		N									
	478450027	14428 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10B Plan 7D, Lot 40 - SFD	PA12-0005/BRT19-0278	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	06/01/2020	1		N									
	478450011	14427 PEAR BLOSSOM LN	KB-Bella Cortina TR 36436 PH 10, Plan 8D, Lot 24 - SFD	PA12-0005/BRT19-0279	SFD	O							1	5/18/2015	1							1	9/16/2019	1							1	04/23/2020	1		N									
	478450031	14421 QUINCY ST	KB Homes-Bella Cortina TR 36436 PH 11 Plan 3BR Lot 44: SFD	PA12-0005/BRT19-0300	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	03/02/2020	1		N									
	478450032	14431 QUINCY ST	KB-Bella Cortina TR 36436 PH 11 Plan 7CR, Lot 45 - SFD	PA12-0005/BRT19-0301	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	03/02/2020	1		N									
	478450001	28497 LARKSONG WAY	TR 36436 KB-Bella Cortina; PH 12, Plan 3DR, Lot 14 - SFD	PA12-0005/BRT19-0313	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	12/28/2020	1		N									
	478450004	28467 LARKSONG WAY	TR 36436 KB-Bella Cortina; PH 12, Plan 3C, Lot 17 - SFD	PA12-0005/BRT19-0314	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	11/24/2020	1		N									
	478450002	28487 LARKSONG WAY	TR 36436 KB-Bella Cortina; PH 12, Plan 6A, Lot 15, Lot 41 - SFD	PA12-0005/BRT19-0316	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	11/24/2020	1		N									
	478450003	28477 LARKSONG WAY	TR 36436 KB-Bella Cortina PH 12, Plan 8BR, Lot 16 - SFD	PA12-0005/BRT19-0318	SFD	O							1	5/18/2015	1							1	11/7/2019	1							1	11/24/2020	1		N									
	478440005	28465 PEONY CIR	KB-Bella Cortina TR 36436 PH 13, Plan 5DR, Lot 5 - SFD	PA12-0005/BRT19-0405	SFD	O							1	5/18/2015	1							1	12/6/2019	1							1	11/23/2020	1		N									
	478440009	14321 QUINCY ST	KB-Bella Cortina TR 36436 PH 13, Plan 5C, Lot 9 - SFD	PA12-0005/BRT19-0406	SFD	O							1	5/18/2015	1							1	12/6/2019	1							1	11/24/2020	1		N									
	478440012	28478 LARKSONG WAY	KB-Bella Cortina TR 36436 PH 13, Plan 3A, Lot 12 - SFD	PA12-0005/BRT19-0407	SFD	O							1	5/18/2015	1							1	12/6/2019	1							1	10/27/2020	1		N									
	478440008	14311 QUINCY ST	KB-Bella Cortina TR 36436 PH 13, Plan 7AR, Lot 8 - SFD	PA12-0005/BRT19-0409	SFD	O							1	5/18/2015	1							1	12/6/2019	1							1	12/28/2020	1		N									
	478440011	14341 QUINCY ST	KB-Bella Cortina TR 36436 PH 13, Plan 7DR, Lot 11 - SFD	PA12-0005/BRT19-0410	SFD	O							1	5/18/2015	1							1	12/6/2019	1							1	12/28/2020	1		N									
	316210035	24771 NANDINA AVE	Complete demolition of SFD (24771 Nandina) and adjacent shed to be replaced with new industrial building (24773 Nandina)	BOD20-0017	SFD	O									0									0								9/15/2020	0		N						1	Demolished	O	To replaced with new industrial building
	481270049	12920 HEACOCK ST	Demolish Fire Damage Structure Per City of Moreno Valley (Comply with CCR18-1152 & BSR20-0014)	BOD20-0010	SFD	O									0									0								3/6/2020	0		N						1	Destroyed	O	Fire damage

Attachment: Appendix A - 2020 Housing Element Annual Progress Report Table [Revision 1] (4314 : General Plan Annual Progress Report)

Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT
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(CCR Title 25 §6202)

This table is auto-populated once you enter your jurisdiction name and current year data. Past year information comes from previous APRs.

Please contact HCD if your data is different than the material supplied here

Table B
Regional Housing Needs Allocation Progress
Permitted Units Issued by Affordability

		1	2									3	4
Income Level		**RHNA Allocation by Income Level**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total Units to Date (all years)**	**Total Remaining RHNA by Income Level**
Very Low	Deed Restricted	1500											1500
	Non-Deed Restricted												
Low	Deed Restricted	993											993
	Non-Deed Restricted												
Moderate	Deed Restricted	1112										768	344
	Non-Deed Restricted						84	135	238	311			
Above Moderate		2564		93	103	119	341	415	283	120		1474	1090
Total RHNA		**6169**											
Total Units				**93**	**103**	**119**	**425**	**550**	**521**	**431**		**2242**	**3927**

Note: units serving extremely low-income households are included in the very low-income permitted units totals
Cells in grey contain auto-calculation formulas

Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

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Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

Table C
Sites Identified or Rezoned to Accommodate Shortfall Housing Need

Project Identifier				Date of Rezone	RHNA Shortfall by Household Income Category				Type of Shortfall	Sites Description							
1				2	3				4	5	6	7	8		9	10	11
APN	Street Address	Project Name+	Local Jurisdiction Tracking ID+	Date of Rezone	Very Low-Income	Low-Income	Moderate-Income	Above Moderate-Income	Type of Shortfall	Parcel Size (Acres)	General Plan Designation	Zoning	Minimum Density Allowed	Maximum Density Allowed	Realistic Capacity	Vacant/Nonvacant	Description of Existing Uses
Summary Row: Start Data Entry Below																	

(No data required from the City of Moreno Valley)

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Jurisdiction	Moreno Valley	
Reporting Year	2020	(Jan. 1 - Dec. 31)

Table D

Program Implementation Status pursuant to GC Section 65583

Housing Programs Progress Report

Describe progress of all programs including local efforts to remove governmental constraints to the maintenance, improvement, and development of housing as identified in the housing elemen

1	2	3	4
Name of Program	**Objective**	**Timeframe in H.E**	**Status of Program Implementation**
Goal #1 - Availability of a wide range of housing by location, type of unit, and price to meet the existing and future needs of Moreno Valley residents.	(see Action 1.10 below)	2014-2021	(see Action 1.10 below)
Action 1.10	To encourage the development of affordable residential and mixed-use projects, the City will offer incentives such as a reduction in development standards (i.e. lot size and parking requirements) and with assistance from the Moreno Valley Housing Authority, subsidize a portion of development costs to encourage lot consolidation and to promote more intense residential and mixed-use development on vacant and underutilized sites within the Village Specific Plan (SP 204) area. While the City is more than able to accommodate the remaining RHNA allocation for the planning period on sites larger than one acre, this program allows for the City to begin planning for the future by encouraging property owners to consolidate adjacent properties to develop larger projects. *Responsible Agency: The City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	2014-2021	The lot consolidation discussion is good to keep for the 6th Cycle Housing Eleme Update (2021-2029) . The redesignation of the Village Specific Plan (Sunnymea Village) to allow up to 20 du/acre as part of the comprehensive General Plan upda will hopefully encourage consolidation of lots. The reduction in development standarc can be explored further through the zoning consistency/development code update.

Goal #2 - Promote and preserve suitable and affordable housing for persons with special needs, including lower income households, large families, single parent households, the disabled, senior citizens and shelter for the homeless.	(see Action 2.11 below)		(see Action 2.11 below)
Action 2.11	The City will adopt a density bonus ordinance in compliance with Government Code Section 65915. *Responsible Agency: Planning Division* *Timing: Adopt by end of 2014* *Funding: General Fund* *Objective: To promote the financial feasibility of development affordable to lower-income households utilizing density bonuses and incentives and concessions*	2014-2021	Density Bonus Section of Title 9 will be updated with SB2 funds - due to be start 2020 and completed in 2021.
Goal #3 - Removal or mitigation of constraints to the maintenance, improvement and development of affordable housing, where appropriate and legally possible.	(see Action 3.8 and 3.9 below)	2014-2021	(see Action 3.8 and 3.9 below)
Action 3.8	Waive Traffic Uniform Mitigation Fee (TUMF) for affordable units (Previously referred to as Program 8.17). *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing* *Potential Funding Source: General Fund* *Objective: 600 affordable units over the planning cycle*	2014-2021	The text will be revised in the upcoming Housing Element Update to clarify if the proje qualifies and if so, it will be exempt from TUMF based on the City's adopted ordinance

Action 3.9	Apply for grant funds to upgrade water infrastructure in the Box Springs Municipal Water Company (BSMWC) service area (Previously referred to as Program 8.22). *Responsible Agency: City of Moreno Valley Planning Division and Business Support & Neighborhood Programs Division* *Timeframe: Ongoing* *Potential Funding Source: Grants* *Objective: The City will continue to research grant opportunities.*	2014-2021	Ongoing - City continues to work with Box Springs Municipal Water Company Service area to support their pursuit of grant funding efforts to upgrade water infrastructure.
Goal #4 - Provide increased opportunities for homeownership.	(see Action 4.5 below)	2014-2021	(see Action 4.5 below)
Action 4.5	Provide funds for Homebuyer Assistance Program (HAP) silent seconds. Work with approved lenders that have HAP experience. The goal of the program is to provide homeownership for low and moderate income families (Previously referred to as Program 8.10). *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 15 units during the planning cycle of 2014-2021*	2014-2021	Ongoing - Finance provides this program through the County of Riverside and the us of PLHA funding.
Goal #5 - Enhance the quality of existing residential neighborhoods in Moreno Valley, through maintenance and preservation, while minimizing displacement impacts.	(see Action 5.6 below)	2014-2021	(see Action 5.6 below)

Action 5.6	Conduct five (5) annual neighborhood clean-ups, improving the living environment of residents. Provide bins for trash disposal. *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division and Code and Neighborhood Services Division.* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 5 clean ups per year during the planning cycle of 2014-2021.*	2014-2021	CDBG no longer funds neighborhood cleanups, however CDBG does fund clean up the City's right of ways with the use of the ESG Program known as Homeless To Worl
Goal #6 - Encourage energy conservation activities in all neighborhoods.	(see Action 6.6 below)	2014-2021	(see Action 6.6 below)
Action 6.6	Market energy efficiency program for residents of MV Utility area (Previously referred to as Program 8.34 in the 2008-2014 Housing Element). The City has energy efficiency information posted on its website and information regarding various programs is mailed out to MV Utility customers in their bills. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Utilities* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	2014-2021	Moreno Valley Utility keeps an energy efficiency page on the city's website. MV regularly includes bill inserts for customers that describe various cost-effective energ savings measures that can be easily implemented. MVU also distributes a quarter newsletter to customers that contains energy efficiency information.
Goal #7 - Equal housing opportunity for all residents of Moreno Valley, regardless of race, religion, sex, marital status, ancestry, national origin, color, or handicap.	(see Action 7.2 below)	2014-2021	(see Action 7.2 below)

Action 7.2	The housing needs of persons with developmental disabilities are typically not addressed by Title 24 Regulations, and requires in addition to basic affordability, slight modifications to existing units, and in some instances, a varying range of supportive housing facilities. To accommodate residents with developmental disabilities, the City will seek State and Federal monies, as funding becomes available, in support of housing construction and rehabilitation targeted for persons with developmental disabilities. Moreno Valley will also provide regulatory incentives, such as expedited permit processing, and fee waivers and deferrals, to projects targeted for persons with developmental disabilities. To further facilitate the development of units to accommodate persons with developmental disabilities, the City shall reach out to developers of supportive housing to encourage development of projects targeted for special needs groups. Finally, as housing is developed or identified, Moreno Valley will work with the Inland Regional Center to implement an outreach program informing families within the City of housing and services available for persons with developmental disabilities. Information will be made available on the City's website. *Responsible Agency: City of Moreno Valley*	2014-2021	The Action will be edited as part of the Housing Element Update to clarify that supportive housing will be addressed through the development code amendment th will be prepared. Funds awarded to Moreno Valley under the LEAP grant (2020/202 to support this work.

Jurisdiction	Moreno Valley
Reporting Period	2020 (Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT

Housing Element Implementation

(CCR Title 25 §6202)

Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

Table E

Commercial Development Bonus Approved pursuant to GC Section 65915.7

Project Identifier				Units Constructed as Part of Agreement				Description of Commercial Development Bonus	Commercial Development Bonus Date Approved
1				2				3	4
APN	Street Address	Project Name+	Local Jurisdiction Tracking ID+	Very Low Income	Low Income	Moderate Income	Above Moderate Income	Description of Commercial Development Bonus	Commercial Development Bonus Date Approved
Summary Row: Start Data Entry Below									

(No data required from the City of Moreno Valley)

Jurisdiction	Moreno Valley	
Reporting Period	2020	(Jan. 1 - Dec. 31)

ANNUAL ELEMENT PROGRESS REPORT
Housing Element Implementation
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Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

Table F
Units Rehabilitated, Preserved and Acquired for Alternative Adequate Sites pursuant to Government Code section 65583.1(c)

Please note this table is optional: The jurisdiction can use this table to report units that have been substantially rehabilitated, converted from non-affordable to affordable by acquisition, and preserved, including mobilehome park preservation, consistent w the standards set forth in Government Code section 65583.1, subdivision (c). Please note, motel, hotel, hostel rooms or other structures that are converted from non-residential to residential units pursuant to Government Code section 65583.1(c)(1)(D) a considered net-new housing units and must be reported in Table A2 and not reported in Table F.

Activity Type	Units that Do Not Count Towards RHNA+ Listed for Informational Purposes Only				Units that Count Towards RHNA + Note - Because the statutory requirements severely limit what can be counted, please contact HCD to receive the password that will enable you to populate these fields.				The description should adequately document ho each unit complies with subsection (c) of Governm Code Section 65583.1+
	Extremely Low-Income+	Very Low-Income+	Low-Income+	TOTAL UNITS+	Extremely Low-Income+	Very Low-Income+	Low-Income+	TOTAL UNITS+	
Rehabilitation Activity									
Preservation of Units At-Risk									
Acquisition of Residential Units									
Mobilehome Park Preservation									
Total Units by Income									

(No data required from the City of Moreno Valle

Jurisdiction	Moreno Valley	
Reporting Period	2020	(Jan. 1 - Dec. 31)

NOTE: This table must only be filled out if the housing element sites inventory contains a site which is or was owned by the reporting jurisdiction, and has been sold, leased, or otherwise disposed of during the reporting year.

Note: "+" indicates an optional field

Cells in grey contain auto-calculation formulas

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Table G
Locally Owned Lands Included in the Housing Element Sites Inventory that have been sold, leased, or otherwise disposed of

Project Identifier						
1				2	3	4
APN	**Street Address**	**Project Name+**	**Local Jurisdiction Tracking ID+**	**Realistic Capacity Identified in the Housing Element**	**Entity to whom the site transferred**	**Intended Use for Site**
Summary Row: Start Data Entry Below						
482161021	Northeast Corner of Cottonwood Ave and Indian St	The Courtyards at Cottonwood - 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated for public facilities, to be retained by the City).	PEN19-0110	20	The Moreno Valley Housing Authority transferred the site(s) to the developer in August 2020 (Rancho Belago Developers, Inc.)	The project is an entitled 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated fc public facilities, to be retained by the City).

482161022	Northeast Corner of Cottonwood Ave and Indian St	The Courtyards at Cottonwood - 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated for public facilities, to be retained by the City).	PEN19-0110	6	The Moreno Valley Housing Authority transferred the site(s) to the developer in August 2020 (Rancho Belago Developers, Inc.)	The project is an entitled 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated fo public facilities, to be retained by the City).
482161023	Northeast Corner of Cottonwood Ave and Indian St	The Courtyards at Cottonwood - 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated for public facilities, to be retained by the City).	PEN19-0110	6	The Moreno Valley Housing Authority transferred the site(s) to the developer in August 2020 (Rancho Belago Developers, Inc.)	The project is an entitled 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated fo public facilities, to be retained by the City).
482161024	Northeast Corner of Cottonwood Ave and Indian St	The Courtyards at Cottonwood - 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated for public facilities, to be retained by the City).	PEN19-0110	12	The Moreno Valley Housing Authority transferred the site(s) to the developer in August 2020 (Rancho Belago Developers, Inc.)	The project is an entitled 80-unit affordable multiple family residential development with 1 manager unit on 6.78 acres (1.59 acres designated fo public facilities, to be retained by the City).

Jurisdiction	Moreno Valley	
Reporting Period	2020 (Jan. 1 - Dec. 31)	

Note: "+" indicates an optional field

Cells in grey conta auto-calculation formulas

ANNUAL ELEMENT PROGRESS REPORT
Housing Element Implementation
(CCR Title 25 §6202)

Table H

Locally Owned Surplus Sites

Parcel Identifier				Designation	Size	Notes
1	2	3	4	5	6	7
APN	**Street Address/Intersection**	**Existing Use**	**Number of Units**	**Surplus Designation**	**Parcel Size (in acres)**	**Notes**
Summary Row: Start Data Entry Below						

(No data required from the City of Moreno Valle

Moreno Valley General Plan
Complete list of Goals and Policies

KEY	
Planning	Police
Land Development	Waste Coordinator
Special Districts	Transportation
Economic Development	Building
Parks / Community Services	Multiple Departments
Emergency Operations / Fire	

Goal/Policy	Description	Discussion on Implementation Status	Responsible Party
The City Structure Land Use Element Goals and Policies			
9.2 Community Development Element Goals, Objectives, Policies and Programs			
9.2.1 Community Development Element Goals			
Goal 2.1	A pattern of land uses, which organizes future growth, minimizes conflicts between land uses, and which promotes the rational utilization of presently underdeveloped and undeveloped parcels.	Land use designations provided in the General Plan minimizes conflicts between land uses and allows for buffers between industrial, commercial and more sensitive residential land uses. In higher intensity Specific Plans such as the Industrial Area Plan (SP 208), buffers have been established between industrial land uses and existing more sensitive residential development. This is an ongoing goal of the City.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

Goal 2.2	An organized, well-designed, high quality, and functional balance of urban and rural land uses that will meet the needs of a diverse population, and promote the optimum degree of health, safety, well- being, and beauty for all areas of the community, while maintaining a sound economic base.	The City of Moreno Valley strives to approve well-designed, high quality projects. There is a functional balance between urban and rural land uses that will meet the needs of the residents. For example, more rural land use designations are provided in the northern and eastern portions of the city, while urban land uses are provided in the western and southern portions. This practice allows for good sensible land use planning, while maintaining a sound economic base. This is an ongoing goal of the City.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Goal 2.3	Achieves an overall design statement that will establish a visually unique image throughout the City.	The City of Moreno Valley's General Plan provides for an overall design statement which establishes unique visual images throughout the City. The Municipal Code, which is consistent with the General Plan, establishes overall design guidelines and standards for residential, commercial and industrial development proposals, and reviews items such as, color, unity/diversity massing, and building proportion. This is an ongoing City goal.	Planning
Goal 2.4	A supply of housing in sufficient numbers suitable to meet the diverse needs of future residents and to support healthy economic development without creating an oversupply of any particular type of housing.	The downturn of the economy in 2007 limited new housing development in the City until recently. In the last year, new residential housing projects have been submitted and housing product has been very diverse. This includes such project types as smaller lot Planned Unit Developments for the senior or first time homeowner and multiple family housing such as apartments. This is an ongoing City goal. **In 2020 - the City had 431 residential permits pulled and 216 Certificates of Occupancy.**	Planning

Goal/Policy	Description	Discussion on Implementation Status	Responsible d
Goal 2.5	Maintenance of systems for water supply and distribution; wastewater collection, treatment, and disposal; solid waste collection and disposal; and energy distribution which are capable of meeting the present and future needs of all residential, commercial, and industrial customers within the City of Moreno Valley.	A specific goal for the City is to maintain water supply, wastewater collection/treatment/disposal and solid waste collection capable of meeting the present and future needs of City residents. MVU prepares an annual Distribution System Plan, which forecasts the future electrical needs of MVU's service area. Capital improvement projects are then developed and prioritized to ensure that the system will meet the present and future needs of MVU customers. This is an ongoing goal.	Water Purveyors/Waste Coordinator /MVU
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
9.2.2 Community Development Element Objectives and Policies			
Objective 2.1	Balance the provision of urban and rural lands within Moreno Valley by providing adequate land for present and future urban and economic development needs, while retaining the significant natural features and the rural character and lifestyle of the northeastern portion of the community.	The City of Moreno Valley continues to provide a balance of urban and rural land. The majority of the City is urbanized, with a continued emphasis of retaining natural features as well as the urban lifestyle with larger lots and larger animal keeping opportunities north of State Route 60 in the northeaster portion of the community. This is an ongoing City objective.	Planning

Objective 2.2	Provide a wide range of residential opportunities and dwelling types to meet the demands of present and future residents of all socioeconomic groups.	The City has a very diverse residential mix, including a wide range of residential opportunities to meet the demand of all socioeconomic groups. As included in Moreno Valley's approved 2014 Housing Element, the City strives for affordable housing opportunities. The City allows opportunities for Planned Unit Developments (PUD's) that provide smaller lot housing for the senior and first time home buyer. Although the market has been slow for condominium development, apartment projects have recently picked up momentum . There are also continued opportunities for market rate single family home development, from tract maps that have been carried over from before the economic downturn. This is an ongoing City objective. **In 2020 - the City had 431 residential permits pulled and 216 Certificates of Occupancy. The residential units include a mix of single-family houses, smaller PUD detached homes and multiple-family apartments.**	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
2.2.1	In determining allowable density for residential parcels an "adjusted net acreage" shall be used. Adjusted net acres shall mean the land area that would remain after dedication of ultimate rights-of- ways for arterial streets, freeways and park dedications.	All allowable density of residential projects in the City are determined by calculating an adjusted net average of buildable area after infrastructure dedication for streets, utilities, parks etc. This is a continuing City policy.	Planning
2.2.2	The primary purpose of areas designated **Hillside Residential** is to balance the preservation of hillside areas with the development of view-oriented residential uses. a. Within the Hillside Residential category, appropriate	Section 9.03.040 B "Residential Site Development Standards" of the Municipal Code establishes standards for hillside residential development consistent with the goals, objectives and policies of the General Plan. Hillside residential development	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

	residential uses include large lot residential uses. Lots smaller than one acre may only be permitted as clustered units to minimize grading, and other impacts on the environment, inclusive of the Multi-Species Habitat Conservation Plan. b. The maximum residential density within Hillside Residential areas shall be determined by the steepness of slopes within the project. The maximum allowable density shall not exceed one dwelling unit per acre on sloping hillside property and shall decrease with increasing slope gradient. c. Future development within Hillside Residential areas shall occur in such a manner as to maximize preservation of natural hillside contours, vegetation and other characteristics. Hillside area developments should minimize grading by following the natural contours as much as possible. d. Development within Hillside Residential areas shall be evaluated to determine the precise boundaries of the area. If the Community Development Director determines that adequate slope information is not available, applicants requesting to develop within these areas shall complete a slope analysis for the proposed development site.	**Goals, objectives and policies of hillside residential development will be further evaluated with the next comprehensive General Plan update.**	d
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
	(Continued from above) Portions of the development that exceed an average slope of 10% shall adhere to the policies within the Hillside Residential category. Portions of the development where the slopes are less than 10% on average shall adhere includes large lot residential uses, with the maximum allowable density not to exceed one dwelling unit per acre on sloping hillside property, including a decreasing density with an increasing slope gradient. Allowable development would preserve the preservation of natural hillsides. A slope analysis is the likely vehicle for development in hillside residential areas to determine the percentage of slope.		

2.2.3	The primary purpose of areas designated **Rural Residential** is to provide for and protect rural lifestyles, as well as to protect natural resources and hillsides in the rural portions of the City. a. The maximum residential density within Rural Residential and areas shall be determined by the steepness of slopes within the individual project area. The maximum allowable density shall be 0.4 dwelling units per acre (an average lot size of 2.5 acres) on flat terrain and shall decrease with increasing slope gradient. b. Within the Rural Residential category, appropriate residential uses include large lot residential uses. Lots smaller than 2.5 acres may only be permitted as clustered units to minimize grading and other impacts on the environment, inclusive of the Multi-Species Habitat Conservation Plan.	Section 9.03.040 A "Residential Site Development Standards" of the Municipal Code establishes standards for rural residential development consistent with the goals, objectives and policies of the General Plan. This includes large lot residential development allowing a maximum density of 0.4 dwelling units per acre on flat terrain, with a decrease in density as the slope gradient increases. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.2.4	The primary purpose of areas designated **Residential 1** is to provide for and protect rural lifestyles. The maximum allowable density for projects within the Residential 1 areas shall be 1.0 dwelling unit per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes requirements for Residential 1 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 1 dwelling unit per acre. This is an ongoing policy.	Planning

2.2.5	The primary purpose of areas designated **Residential 2** is to provide for suburban lifestyles on residential lots larger than commonly available in suburban subdivisions and to provide a rural atmosphere. The maximum allowable density shall be 2.0 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for Residential 2 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 2 dwelling units per acre. This is an ongoing policy.	Planning
2.2.6	The primary purpose of areas designated **Residential 3** is to provide a transition between rural and urban density development areas, and to provide for a suburban lifestyle on residential lots larger than those commonly found in suburban subdivisions. The maximum allowable density shall be 3.0 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for Residential 3 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 3 dwelling units per acre. This is an ongoing policy.	Planning
2.2.7	The primary purpose of areas designated **Residential 5** is to provide for single-family detached housing on standard sized suburban lots. The maximum allowable density shall be 5.0 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for Residential 5 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 5 dwelling unit per acre. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.2.8	The primary purpose of areas designated **Residential 10** is to provide for a variety of residential products and to encourage innovation in housing types. Developments within Residential 10 areas are typically expected to provide amenities not generally found in suburban subdivisions, such as common open space and recreational areas. The maximum allowable density shall be 10.0 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for Residential 10 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 10 dwelling units per acre. This is an ongoing policy.	Planning

2.2.9	The primary purpose of areas designated **Residential 15** is to provide a range of multi-family housing types for those not desiring dwellings on individual lots that include amenities such as common open space and recreational facilities. The maximum allowable density shall be 15.0 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for multiple- family Residential 15 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 15 dwelling unit per acre. This is an ongoing policy.	Planning
2.2.10	The primary purpose of areas designated **Residential 20** is to provide a range of high density multi-family housing types. Developments within Residential 20 areas shall also provide amenities, such as common open spaces and recreational facilities. The maximum density shall be 20 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for high density residential 20 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 20 dwelling units per acre. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.2.11	The primary purpose of areas designated **Residential 30** is to provide a range of high density multi-family housing types in an urban setting. Developments within Residential 30 areas shall also provide amenities, such as common open spaces and recreational facilities. The maximum density shall be 30 dwelling units per acre.	Section 9.03.040 "Residential Site Development Standards" of the Municipal Code establishes standards for high density Residential 30 development consistent with the goals, objectives and policies of the General Plan. Development shall not exceed 30 dwelling unit per acre. This is an ongoing policy.	Planning
2.2.12	Densities in excess of the maximum allowable density for residential projects may be permitted pursuant to California density bonus law.	The City encourages the use of density bonus for affordable housing and senior housing opportunities. Development Code Section 9.03.050 "Density Bonus Program for Affordable Housing" provides provisions for density bonus and greater on-site project densities. This is an ongoing policy.	Planning

2.2.13	Planned Unit Developments (PUD) shall be encouraged for residential construction in order to provide housing that is varied by type, design, form of ownership, and size. PUD's shall also provide opportunities to cluster units to protect significant environmental features and/or provide unique recreational facilities.	PUD's are encouraged to allow for more diverse designs, recreational opportunities and walkable residential communities. Section 9.03.060 "Planned Unit Developments of the Development Code provides for PUD's and clustering opportunities to avoid existing environmental constraints. This is an ongoing policy and the PUD Section will be expanded with the upcoming General Plan Update.	Planning
2.2.14	Discourage costly "leap-frog" development patterns by encouraging in-fill development wherever feasible, thereby reducing overall housing costs. Development within an area designated as SP 212-1 (Moreno Highlands) is not considered to be leapfrog development.	Developing on infill properties is always encouraged by the City. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.2.15	Encourage a diversity of housing types, including conventional, factory built, mobile home, and multiple family dwelling units.	The City encourages a diverse housing mix for all residentially zoned property. This is an ongoing policy.	Planning
2.2.16	Encourage the use of innovative and cost effective building materials, site design practices and energy and water conservation measures to conserve resources and reduce the cost of residential development.	The use of cost effective building materials, site design practices and energy/water conservation measures is encouraged through the Development and Building Codes. For example. The Landscape ordinance requires drought tolerant plant materials and waterwise irrigation practices . The Green Building Code requires conservations measures such as building material design and other energy requirements. This is an ongoing policy.	Planning
2.2.17	Affordable housing developments should be compatible in visual design with surrounding development.	All newly constructed affordable housing developments are compatible with both exterior design and surrounding development. This is an ongoing policy.	Planning

2.2.18	Discourage nonresidential uses on local residential streets that generate traffic, noise or other characteristics that would adversely affect nearby residents.	Current zoning practices discourages and in many cases does not allow for impactful non- residential development to occur. The Municipal Code (Section 9.02.020 "Permitted Uses"), restricts non residential uses in residential zones that are contained to local residential streets. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.3	Promote a sense of community and pride within residential areas through increased neighborhood interaction and enhanced project design.	A sense of community and pride is instilled in newly approved projects through good design and walkable communities. Increased neighborhood interaction is also encourage through such things as neighborhood watch and Pop teams established for multiple family residential development. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
2.3.1	Within individual residential projects, a variety of floor plans and elevations should be offered.	Pursuant to Section 9.16.130 (Table 9.16.130B) of the Code, all residential projects shall provide a variety of floor plans and elevations. This is an ongoing policy.	Planning
2.3.2	Encourage building placement variations, roofline variations, architectural projections, and other embellishments to enhance the visual interest along residential streets.	Chapter 16 of the Municipal Code requires roof-line variations, architectural projections and other embellishments such as four sided architecture. This is an ongoing policy.	Planning

2.3.3	Discourage the development of single-family residences with a bulk (building mass) that is out of scale with the size of the parcels on which they are located.	The City understands that building massing is a very important issue to consider in residential elevations and when developing single-family residential communities. The design guidelines contained in Section 9.16.010 of the Municipal Code discourages building massing that is out of context with the existing neighborhood. This is an ongoing policy.	Planning
2.3.4	Design large-scale small lot single family and multiple family residential projects to group dwellings around individual open space and/or recreational features.	Section 9.03.060 "Planned Unit Developments" of the Municipal Code encourages PUD's for greater innovation in housing development and conservation of natural resources and open space. Recreational facilities such as picnic areas, pocket parks, walking paths and gyms are commonplace among PUD developments. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.3.5	Ensure that all multiple family housing is well- designed, attractive and livable by: a. Ensuring all structures are architecturally compatible and include decorative architectural features and articulation in walls and roofs; b. Providing adequate parking, walkways, lighting, landscaping, amenities and open space areas; c. Providing private open space areas such as patios and balconies.	Pursuant to Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code, multiple-family residential projects shall be architecturally compatible with the existing neighborhood, provide parking, walkways and common open space areas such as picnic areas, pools, tot lots etc. This is an ongoing policy.	Planning

Objective 2.4	Provide commercial areas within the City that are conveniently located, efficient, attractive, and have safe and easy pedestrian and vehicular circulation in order to serve the retail and service commercial needs of Moreno Valley residents and businesses.	The City strives for commercial areas that provide functional vehicular circulation and safe pedestrian areas that are walkable internally between uses and externally to surrounding neighborhoods. This is an ongoing objective.	Planning
Policies:			
2.4.1	The primary purpose of areas designated **Commercial** is to provide property for business purposes, including, but not limited to, retail stores, restaurants, banks, hotels, professional offices, personal services and repair services. The zoning regulations shall identify the particular uses permitted on each parcel of land, which could include compatible noncommercial uses. Commercial development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.	Zoning regulations for commercial uses are consistent with established General Plan land use. For example, the City's zoning map establishes Commercial zoning designations and the Municipal Code Permitted Uses Table (Section 9.02.020-1) provides for permitted uses allowed for each commercial zoning category. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.4.2	The commercial area located at the intersection of **Alessandro Boulevard and Redlands Boulevard** shall provide for commercial land uses that are compatible with the historical, small town nature of the original Moreno town site. The zoning regulations shall identify the particular uses permitted on each parcel of land, which could include compatible noncommercial uses.	The General Plan Land Use Map shows the site zoned as VC or Village Commercial, which is a unique zoning classification allowing for unique uses. Any development at this intersection has been and would need to be compatible with the historical, small town nature of the original site.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2.4.3	The commercial area located on the **north side of State Route 60 at the intersection of Moreno Beach Drive** shall provide for the establishment of commercial land uses that serve the daily needs of the surrounding residential neighborhood and the traveling public. It is not intended to serve the needs of the region for goods, services, entertainment or recreation. The zoning regulations shall identify the particular uses and type of development permitted on each parcel, which could include office uses and compatible noncommercial uses.	Properties located north of State Route 60 at the intersection of Moreno Beach Drive are zoned CC or Community Commercial. The zoning established in the City's Land Use Map and Municipal Code identifies permitted uses allows for commercial/retail uses that both serve the needs of the surrounding residential neighborhood and the traveling public. The preferred alternative in the Highway 60 Corridor study suggested a town center concept which includes potential entertainment retail uses such as hotels and sit down restaurant. **This item shall be reviewed further during the next General Plan update.**	Planning
2.4.4	An overlay district limiting land uses to those that are supportive and compatible with medical uses shall be established around the **Riverside County Regional Medical Center and the Moreno Valley Community Hospital.** The zoning regulations shall identify the particular uses and type of development permitted on each parcel.	Municipal Code standards under Section 9.07- 040 "Medical Use Overlay District (MUO)", provides the foundation to create and maintain diverse and supportive medical uses in the vicinity of the Riverside County Regional Medical Center (Riverside University Health Systems) and the Moreno Valley Community Hospital. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2.4.5	The primary purpose of locations designated **Mixed- Use** on the Moreno Valley General Plan Land Use map is to provide for the establishment of commercial and office uses and/or residential developments of up to 20 dwelling units per acre. The zoning regulations shall identify the particular uses and type of development permitted on each parcel. Overall development intensity should not exceed a floor area ratio of 1.00.	The Mixed Use land use zone established in the General Plan provides for both commercial/office and higher density residential development opportunities. The permitted uses table (Municipal Code(Section 9.02.020-1) identifies types of uses and Residential Site Development Standards (Municipal Code Section 9.03.040-6) establishes floor area ratios. **The revised Mixed Use Overlay has established standards for denser residential development and allows density to rise from a maximum of 20 dwelling units per acre to a maximum of 40 dwelling units per acre. This item shall be further reviewed and adjusted accordingly with the next General Plan update.**	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.4.6	The primary purpose of areas designated **Residential/Office** on the Moreno Valley General Plan Land Use map is to provide areas for the establishment of office-based working environments or residential developments of up to 15 dwelling units per acre. The zoning regulations shall identify the particular uses and type of residential development permitted on each parcel of land. Overall development intensity should not exceed a Floor Area Ratio of 1.00.	As established in Chapter 9,02, Section 9.02.020 of the Municipal Code, areas zoned Residential/Office provide office based working environments and allow for higher density multiple-family residential development. Zoning regulations identify particular uses, types of residential development and floor area ratio requirements. This is an ongoing policy.	Planning

2.4.7	The primary purpose of areas designated **Office** is to provide for office uses, including, administrative, professional, legal, medical and financial offices. The zoning regulations shall identify the particular uses permitted on each parcel of land, which could include limited non-office uses that support and are compatible with office uses. Development intensity should not exceed a Floor Area Ratio of 2.00 and the average intensity should be significantly less.	The Municipal Code (Sections 9.02.020 and 9.04.010) establishes permitted uses and defines areas designated for office type uses. Current zoning regulations identifies development intensity. This is an ongoing policy.	Planning
2.4.8	Orient commercial development toward pedestrian use. Buildings should be designed and sited so as to present a human-scale environment, including convenient and comfortable pedestrian access, seating areas, courtyards, landscaping and convenient pedestrian access to the public sidewalk.	Section 9.04.010 encourages concentration of commercial use for the convenience of the public and to secure a mutually beneficial relationship between commercial uses and the and public. Section 9.16.150 "Commercial Design Guidelines requires pedestrian pathways in parking areas and further incorporates pedestrian ways and plazas to provide visual interest and functionality. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.4.9	Require reciprocal parking and access agreements between individual parcels where practical.	Section 9.16.150 "Commercial Design Guidelines requires interspace access be provided between commercial centers reducing the number of drive approaches from the street and to encourage commercial/retail crossover. This is an ongoing policy.	Planning

2.4.10	Design internal roadways so that direct access is available to all structures visible from a particular parking area entrance in order to eliminate unnecessary vehicle travel, and to improve emergency response.	Internal roadways provide direct access to all structures visible from a parking area entrance. This would also be the norm for Specific Plans under Chapter 9.13. This is an ongoing policy.	Planning
2.4.11	The commercial area located in the vicinity of the intersection of Gilman Springs Road and Jack Rabbit Trail shall provide those commercial support activities necessary and/or incidental to adjacent recreational uses and emphasize tourist-oriented activities and retail services. Recreation-oriented residential land use types may be appropriate to the extent that they are incidental to and complement the recreational character of the area. At such time as the area is annexed to the City, the zoning regulations shall identify the particular uses permitted on each parcel of land.	The General Plan Land Use Map provides a commercial land use designation for this area located in the City's Sphere of Influence. Based on the policy, land uses should be limited away from general commercial use, with an emphasis on more recreation or tourist oriented land uses. **This item shall be further reviewed and evaluated in the next comprehensive General Plan update.**	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.5	Promote a mix of industrial uses which provide a sound and diversified economic base and ample employment opportunities for the citizens of Moreno Valley with the establishment of industrial activities that have good access to the regional transportation system, accommodate the personal needs of workers and business visitors; and which meets the service needs of local businesses.	The Municipal Code provides for a mixture of industrial uses that provide a diverse economic base and opportunities for employment with access to regional transportation systems. For example, the recently approved World Logistics Center, situated in the southern and eastern portion of the City, takes advantage of easy access to the State Route 60 freeway.	Planning
Policies:			

2.5.1	The primary purpose of areas designated **Business Park/Industrial** is to provide for manufacturing, research and development, warehousing and distribution, as well as office and support commercial activities. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average floor area ratio should be significantly less.	The Business park/Industrial land use category provides for a wide variety of industrial uses from warehousing, manufacturing and office/support uses. The Municipal Code Permitted Uses Table (Section 9.02.020-1) establishes permitted uses allowed for this land use category. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.5.2	Locate manufacturing and industrial uses to avoid adverse impacts on surrounding land uses.	Industrial design guidelines provided in the Municipal Code Chapter 9.16 requires truck traffic to be channeled directly to truck routes and prohibits access to neighborhood streets. Manufacturing/industrial uses shall be screened and buffered from surrounding land uses. This is an ongoing policy.	Planning
2.5.3	Screen manufacturing and industrial uses where necessary to reduce glare, noise, dust, vibrations and unsightly views.	Municipal Code Sections 9.16.160 "Business Park/industrial" and 9.05.050 'Good Neighbor Guidelines for Warehouse Distribution Facilities" require screening for manufacturing and industrial uses in view of rights of way. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2.5.4	Design industrial developments to discourage access through residential areas.	Industrial development is designed to discourage access through residential zones. Industrial design guidelines provided in the Municipal Code Chapter 9.16 requires truck traffic to be channeled directly to truck routes and prohibits access to neighborhood streets. In addition, Section 9.05.050 "Good Neighbor Guidelines for Warehouse Distribution Facilities" eliminates diesel trucks from unnecessarily traversing through residential neighborhoods based on establish truck routes, parking restrictions and proper signage An example includes the World Logistics Center project, a 41 million square foot industrial logistics hub in the southeastern portion of the City which has prevented access to Redlands Boulevard and the adjacent residential neighborhoods to the west by redesigning streets and preventing through access. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.6	Maintain an adequate inventory of lands for the conduct of public, quasi-public, and institutional activities, including protection of areas needed for future public, quasi-public, and institutional facilities.	This is an on-going policy. Seniors and other users are encouraged to use paratransit services provided by the Riverside Transit Agency. This is consistent with Chapter 9.11.080 of the Municipal Code.	Land Dev./Administrative Services/Police/Fire/Planni
Policies:			

2.6.1	The primary purpose of areas designated Public/Quasi- Public is to provide property for civic, cultural and public utility uses, including, but not limited to schools, libraries, fire stations, museums, and government offices. The zoning regulations shall identify the particular uses permitted on each parcel of land. Development intensity should not exceed a Floor Area Ratio of 1.00 and the average Floor Area Ratio should be significantly less.	The Municipal Code (Sections 9.02.020 and 9.04.010) establishes permitted uses and defines areas designated for "Public" uses. The description in this policy is consistent with zoning requirements in the above sections. This is an ongoing policy.	Land Dev./Admin Services/Police/Fire/Planning
Objective 2.7	Encourage open space preservation through appropriate land use policies that recognize the valuable natural resources and areas required for protection of public safety that exist in the City.	Municipal Code Chapter 9.06, Section 9.06.010 establishes standards for open space districts. The intent is to require specific regulations to preserve certain life styles, significant geological or other unique features, and protect the public health safety and welfare. Municipal Code Section 9.02.020 establishes permitted uses for properties located in the district. This is an ongoing objective.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
2.7.1	The primary purpose of areas designated **Open Space**, is to provide areas that are substantially unimproved, including, but not limited to areas for outdoor recreation, the preservation of natural resources, the grazing of livestock and the production of crops. Development intensity should not exceed a Floor Area Ratio of 0.10 and the average Floor Area Ratio should be significantly less.	The purpose of Open Space Districts is to provide primarily unimproved areas, while preserving natural and environmentally sensitive areas. Municipal Code Chapter 9.06, Section 9.06.010 establishes standards for open space districts. Municipal Code Section 9.02.020 establishes permitted uses for properties located in the district. This is an ongoing policy.	Planning

2.7.2	The primary purpose of areas designated **Floodplain** is to designate floodplain areas where permanent structures for human occupancy are prohibited to protect of the public health and safety. Development intensity should not exceed a Floor Area Ratio of 0.05.	Accomplished through site design consistent with Municipal Code Chapter 8.12.	Land Development
Objective 2.8	The major purpose of specific plans is to encourage and promote the development of larger-scaled mixed- use developments for the purpose of providing adequate flexibility and innovation in residential building types, land use mixes, site design, and development concepts.	Some of the objectives of a specific plan are s to encourage and promote the development of larger scaled mixed use developments for purposes of providing flexibility and innovation in residential building types, land use mixes, site design and development concepts for areas at or exceeding 15 acres. Municipal Code Chapter 9.13, Sections 9.13.010 through 9.13.050 provide purpose and intent, applicability and specific plan requirements. This is an ongoing objective.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

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2.8.1	In order to provide superior design solutions, reduce adverse environmental impacts, preserve scenic values, and enhance the provision of open space and other amenities, transfers of residential densities permitted under the General Plan may be accomplished in accordance with the following: a. The transfer of residential densities may be accomplished only pursuant to approval of a planned unit development or hillside development. b. Up to one hundred percent (100%) of the density indicated on the General Plan Land Use map may be transferred within a single hillside development or planned unit development project. Densities may not be transferred from one project to another. c. The proposed transfer of densities shall be accomplished such that the project results in a superior use of land, increased sensitivity to the environment, and/or enhanced project amenities without an increased burden on public facilities and services.	Municipal Code chapter 9.03, Section 9.03.050 provides standards for density bonus and affordable housing opportunities. In addition, Chapter 9.03.060 "Planned Unit Developments", provide transfer of densities to preserve scenic areas, rock outcroppings and conservation of cultural or biological resources. Project amenities are enhanced by providing walkable communities that provide ample open space areas such as trails and parks. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.8.2	To the extent that development policies, land use standards, design guidelines, and other provisions of the adopted specific plans are, by their content, intended to address issues contained in the objectives, policies, and implementation programs of the Moreno Valley General Plan, and are inconsistent with the provisions of the General Plan, then the provisions of those specific plans shall be controlling; otherwise, all other provisions of the Moreno Valley General Plan shall remain in effect.	Specific Plans have been developed to be consistent with and to address issues contained in the Moreno Valley General Plan. All items not addressed in specific plans are directed to provisions in the Municipal Code (which is consistent with General Plan provisions). This is an ongoing policy.	Planning

Objective 2.9	Maintain City boundaries that are logical in terms of City service capabilities, economic development needs, social and economic interdependencies, citizen desires, and City costs and revenues.	Logical City boundaries have been maintained throughout the years with areas designated as spheres of influence for future expansion opportunities of the City. This is an ongoing objective.	Planning
Policies:			
2.9.1	Support and encourage the annexation of unincorporated areas within the General Plan study area for which: a. Long-term benefits will be derived by the City; b. Adequate infrastructure and services have been or can be economically provided in accordance with current City standards; c. The proposed annexation will generate sufficient revenues to adequately pay for the provision of City services within a reasonable period of time.	Logical City areas of future annexation of unincorporated areas (northern and eastern portions) have been encouraged to produce long term benefits only if the necessary infrastructure is in place or is attainable, and if the annexation can generate sufficient revenues to pay for City services. These areas have been designated as spheres of influence. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.10	Ensure that all development within the City of Moreno Valley is of high quality, yields a pleasant living and working environment for existing and future residents, and attracts business as the result of consistent exemplary design.	It is an objective of the City of Moreno Valley to make sure that development is of the highest quality, provides a pleasant living and working environment for residents and from an economic development standpoint, attracts business based on high quality design. This is an ongoing objective.	Planning
Policies:			

2.10.1	Encourage a design theme for each new development that is compatible with surrounding existing and planned developments.	Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code establishes design for different types of development. Consistent with this Chapter, design themes are encouraged for new development. The theme shall be compatible with surrounding development. This is an ongoing policy.	Planning
2.10.2	Screen trash storage and loading areas, ground and roof mounted mechanical equipment and outdoor storage areas from public view as appropriate.	Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code establishes design for screening of trash/ storage areas, loading areas, roof mounted mechanical equipment and outdoor storage areas from public view. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.10.3	Require exterior elevations of buildings to have architectural treatments that enhance their appearance. a. A design theme, with compatible materials and styles should be evident within a development project; b. Secondary accent materials, colors and lighting should be used to highlight building features; c. Variations in roofline and setbacks (projections and recesses) should be used to break up the building mass. d. Industrial buildings shall include architectural treatments on visible facades that are aesthetically pleasing.	Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code establishes design for exterior building facades and architectural treatments for all development types to include such items as overall design materials, accent materials, roof-lines and architectural treatments for industrial buildings. This is an ongoing policy.	Planning

2.10.4	Landscaping and open spaces should be provided as an integral part of project design to enhance building design, public views, and interior spaces; provide buffers and transitions as needed; and facilitate energy and resource conservation.	Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code requires landscape buffers and open spaces to enhance public design, public views and interior spaces. Landscape in buffers and opens space also facilitates energy conservation. This is an ongoing policy.	Planning
2.10.5	Development projects adjacent to freeways shall provide landscaped buffer strips along the ultimate freeway right-of-way.	Chapter 16, Section 9.16.130 "Design Guidelines" of the Municipal Code requires freeway adjacent developments to provide landscape buffers along freeway rights of ways. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.10.6	Buildings should be designed with a plan for adequate signage. Signs should be highly compatible with the building and site design relative to size, color, material, and placement.	Chapter 9.12"Sign Regulations" of the Municipal Code establishes requirements for sign placement and design. For visibility and economic viability of the business, adequate signage is required for building and site design. This is an ongoing policy.	Planning
2.10.7	On-site lighting should not cause nuisance levels of light or glare on adjacent properties.	Chapter 9.08 "General Development Standards" Section 9.08.100 "Lighting" of the Municipal Code provides standards for lighting and limitations for light and glare. Recent modifications to the Code have provided for dark sky provisions with further limitations of light spillage onto adjacent properties. This is an ongoing policy.	Planning

2.10.8	Lighting should improve the visual identification of structures. Within commercial areas, lighting should also help create a festive atmosphere by outlining buildings and encouraging nighttime use of areas by pedestrians.	Chapter 9.08, Section 9.08.100 "Lighting" of the Municipal Code provides lighting standards for visual identification. Lighting accents to the building through up lighting opportunities outline buildings and encourage use by pedestrians at night. This is an ongoing policy.	Planning
2.10.9	Fences and walls should incorporate landscape elements and changes in materials or texture to deter graffiti and add visual interest.	Both Chapters 9.08 Section 9.08.070 "Fences and Walls" and Chapter 9.16 "Design Guidelines" both require landscape elements, material changes and texture to deter graffiti to fences and walls This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.10.10	Minimize the use and visibility of reverse frontage walls along streets and freeways by such treatments as landscaping, berming, and "side-on" cul-de-sacs.	Due to the cost of establishing "Special Districts" to maintain reverse frontage landscape and irrigation, reverse frontage development has been discouraged. Therefore, the use of reverse frontage walls is minimal. Any necessary reverse frontage wall shall be decorative in nature and would include landscape and possible berming to break up the elevations. This is an ongoing policy.	Planning/Special Districts

2.10.11	Screen and buffer nonresidential projects from adjacent residential property and other sensitive land uses when necessary to mitigate noise, glare and other adverse effects on adjacent uses.	Chapter 9.16 "Design Guidelines", Sections 9.16.150 and 9.16.160 and Chapter 9.08, Section 9.08.150 of the Municipal Code provides general screening and buffer requirements for non-residential properties to other sensitive properties. This would include such items as trash areas, loading areas, ground-mounted equipment, roof mounted equipment etc. This is an ongoing policy.	Planning
2.10.12	Screen parking areas from streets to the extent consistent with surveillance needs (e.g. mounding, landscaping, low profile walls, and/or grade separations).	Both Landscape Guidelines (Parking Lots) approved by resolution in 2009 and Chapter 9.16 "Design Guidelines" for residential, commercial, industrial and office land uses include guidelines for screening of materials and equipment from streetscapes. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.10.13	Provide landscaping in automobile parking areas to reduce solar heat and glare.	Landscape Guidelines (Parking Lots) approved by resolution in 2009 specifically requires landscaping in automobile parking areas. This is an ongoing policy.	Planning
2.10.14	Preserve or relocate existing mature trees and vegetation where practical. Mature trees shall be replaced when they cannot be preserved or relocated.	Landscape Guidelines approved by resolution in 2009 specifically requires preservation of landscape and specifically trees. Mature trees not able to be preserved shall be replaced at a 3 to 1 ratio. This is an ongoing policy.	Planning

2.10.15	Emphasize the "gateway status" of lands in the vicinity of the intersection of I-215 and State Route 60, at the intersection of Alessandro Boulevard and I-215, at the intersection of Perris Boulevard and State Route 60, and at State Route 60 and Gilman Springs Road. In the vicinity of those areas designated as having "gateway status", the City shall encourage community identification signing.	Although gateway status has been emphasized with a recent upgrade of community identification status, the City has not designated any specific areas along the I- 215 or State Route 60 gateway status **As there are no specific policies or Code requirements on this subject, it is recommended that the item be further reviewed during the comprehensive update of the General Plan.**	Planning d
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.11	Maintain a water system that is capable of meeting the daily and peak demands of Moreno Valley residents and businesses, including the provision of adequate fire flows.	This item is accomplished through will serve letters, environmental documentation, and fire flow letters.	Land Development/Planning/Fir
Policies:			
2.11.1	Permit new development only where and when adequate water services can be provided.	This item is accomplished through will serve letters and environmental documentation.	Land Development/Planni
Objective 2.12	Maintain a wastewater collection, treatment, and disposal system that is capable of meeting the daily and peak demands of Moreno Valley residents and businesses.	Wastewater collection and treatment is provided by Eastern Municipal Water District (EMWD) Western Municipal Water District (WMWD), and Edgemont Community Services District (ECSD)	Land Development
Policies:			
2.12.1	Prior to the approval of any new development application ensure that adequate septic or sewer service capacity exists or will be available in a timely manner.	Requirement for sewer unless septic allowed by Riverside County Department of Environmental Health. This is consistent with Municipal Code Chapter 9.14.	Land Development
Objective 2.13	Coordinate development activity with the provision of public infrastructure and services to eliminate possible gaps in service provision.	Accomplished through design/construction consistent with Municipal Code Chapter 9.14.	Land Development
Policies:			
2.13.1	Limit the amount of development to that which can be adequately served by public services and facilities, based upon current information concerning the capability of public services and facilities.	Adequate public services are reviewed for each development proposal through California Environmental Quality Act guidelines.	Land Development/ Planni

2.13.2	Unless otherwise approved by the City, public water, sewer, drainage and other backbone facilities needed for a project phase shall be constructed prior to or concurrent with initial development within that phase.	Accomplished through design/construction consistent with Municipal Code Chapter 9.14.	Land Develop d
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.13.3	It shall be the ultimate responsibility of the sponsor of a development project to assure that all necessary infrastructure improvements (including system wide improvements) needed to support project development are available at the time that they are needed.	Accomplished through design/construction consistent with Municipal Code Chapters 9.8 and 9.14.	Land Development
2.13.4	Encourage installation of advanced technology infrastructure, including, but not limited to, infrastructure for high speed internet access and solar energy.	Land Development is not providing guidance on high speed internet access or involved with solar energy. Any involvement would be through the plan check process completed for utilities.	Land Development/Morer Valley Utility (MVU)
Objective 2.14	Establish and implement comprehensive solutions to the financing of public facilities that adequately distribute costs based on the level of benefit received and the timing of development.	This item is accomplished through implementation of DIF and TUMF programs consistent with Municipal Code Title 3. CFDs are also available.	Finance / Facilities / Land Development/SD/Capital Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
2.14.1	Conduct periodic review of public facilities impact mitigation fees in accordance with state statutes to ensure that the charges are consistent with the costs of improvements. Utilize the service and mitigation standards contained in the Moreno Valley General Plan as the basis for determining improvement costs.	DIF program is periodically updated and the program is implemented consistent with Municipal Code Title 3.	Finance / Facilities / Land Development/Capital Proje

2.14.2	Promote the establishment of benefit assessment districts, Mello-Roos Community Facilities Districts, tax increment financing, and other financing mechanisms in combination with programmed capital improvements to eliminate existing public service and facility gaps, and to provide necessary facilities in advance of the impacts created by development.	CFD No. 2014-01 (Maintenance Services) was established on March 25, 2014. The District was formed to provide an alternative financing tool for the development community. It provides a mechanism to fund the operation and maintenance of street lighting services and maintenance of public landscaping. With next comprehensive General Plan update, it is recommend to change, "Promote the establishment of benefit assessment district, Mello-Roos Community Facilities Districts, tax increment financing, and other financing mechanisms in combination. . ." with "Promote the establishment of various special financing districts based on qualifications of project in combination. . ."	Special Distr
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.14.3	Review development projects for their impacts on public services and facilities including, but not necessarily limited to, roadways, water, sewer, fire, police, parks, and libraries and require public services or facilities to be provided at the standards outlined in the Moreno Valley General Plan and the standards of applicable service agencies.	Water and sewer impacts/service is determined during entitlement and will serve letters from purveyor.	Public Works / Public Safety/Facilities/Parks
Objective 2.15	Ensure that all Moreno Valley residents have access to high-quality educational facilities, regardless of their socioeconomic status or location within the City.	This objective is being met with continual cooperation and dialog with the Moreno Valley Unified School District and the Van Verde Unified School District.	Administrative Services/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

2.15.1	Encourage an ongoing open liaison with all school districts regarding proposed school design and siting to maximize access and minimize impacts to adjacent uses.	This will ensure that City Standards are conveyed, joint-use facilities are considered, safe routes to school are established, opportunity for parks are incorporated on adjacent property, and amenities are designed to minimize impacts to adjacent uses.	Parks/Plann
Objective 2.16	Maintain local library facilities and reserves in accordance with the following minimum standards: 0.5 square feet of library space and 1.2 volumes per capita.	Libraries fall under Admin Services. Space and volume goals are well within national standards and will require funding to achieve the full goal. The .5 sq. ft. standard would require over 100,000 sq. ft. of space for library services. 2020 saw the addition of a new satellite library of 4,000 sq. ft. in the southerly area of the City.	Administrative Services/Par
Policies:			
2.16.1	Encourage inter-library loan agreements with the County library system and those of surrounding cities to provide the widest possible variety of materials to library patrons.	Inter-library loan agreements are encouraged with the County library system to provide the widest range and variety of materials possible to residents.	Administrative Services/Par
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2.16.2	Provide for the expansion of library facilities as needed to keep pace with the growing population of Moreno Valley.	A third library branch was opened in September 2020. The Iris Plaza Branch a dedicated technology area equipped with public computers, free WiFi, and a self-checkout kiosk.	Administrative Ser d
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 2.17	Provide cultural facilities, including history (natural, cultural and children's), art museums, and performing arts facilities.	On-going. The March Field Park Community Center is home to day camp and pre-school programs year round and is soon to be re-painted. The City's Arts commission is planning a Community Mural that will utilize volunteers to design and paint a mural on the exterior of the building depicting youth and recreation activities. Construction on the Moreno Valley Civic Center Amphitheater was 85% complete in 2020. Opening is planned for 2021, or when the pandemic allows.	Parks/Administrative Servic
Policies:			
2.17.1	Promote the development and construction of a civic/cultural center and museums.	Moreno Valley has constructed the Conference and Recreation Center, Cottonwood Banquet Room, and Towngate Community Center for use as civic/cultural centers. Events at these facilities are ongoing.	Parks / Administrative Services

Goal/Policy	Description	Discussion on Implementation Status	Responsible
Objective 2.18	Promote social services programs that meet the special needs for childcare, the elderly, and the disabled.	The City offers child care, elderly, and disabled programs to the community through Community Service District funding and grants. Many of these programs are held at City buildings and schools. On-going	Parks / Administrative Services

Goal/Policy	Description	Discussion on Implementation Status	Responsible Party
Policies:			
2.18.1	Ensure that a full range of human service programs are available to meet the lifetime development needs of residents of all ages, including the special needs of seniors, families, children, disabled persons, and youth groups.	The City provides a range of activities to service residents of all ages. **Youth:** *Sports* – Flag Football, Pee-Wee and Jr Soccer and Baseball, Multi-Sport Clinics, Skateboarding, Golf and Foot golf, hiking **Adult:** *Sports* – Softball, Kickball, Arena Soccer, Soccer, Basketball, Skateboarding, Golf and Foot Golf, hiking, volleyball. **Life Enrichment Classes and Activities** – acting,modeling, photography, writing, drawing, painting, dance, cheer, hula, martial arts, dog obedience, piano, guitar, CPR, Job Readiness Workshops, second languages, and aerobics, Time for Tots, Virtual Community Center, Movin' thru MoVal, Teen SPOT. **Special Needs:** Sunshine Social Club (physically challenged adults, professional development seminars. **Seniors**: driving courses, lunch program, arts and crafts courses, fitness, bunco, billiards, guitar, special events, nutrition. All are ongoing programs. The City also installed WiFi network cabling and equipment at three City facilities, Community Recreation Center's Community Garden area, at the Cottonwood Golf Center banquet and meeting rooms, and the Senior Center, to provide free public Wi-Fi to meet the needs of citizens during COVID in 2020.	Parks/Administrative Servic

2.18.2	Encourage day care through zoning regulations by permitting such facilities in all compatible zoning classifications.	The City's Parks and Community Services Department locates their facilities within it's own facilities, which are properly zoned for such use.	Parks/Administrati / Community Development
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
2.18.3	Work closely with local schools, private companies, churches, non-profit agencies, government social service agencies, and community groups to facilitate the provision of community services.	The City works with various groups to jointly provide a multitude of services to the community. Examples of these groups include: Moreno Valley and Val Verde Unified School Districts, Salvation Army, Family Services Association, Riverside University Health Systems, UC Riverside, Cal Baptist University, Friends of the MoVal Senior Center. Ongoing	Parks/Administrative Servic
2.18.4	Encourage the development of senior citizens independent living and congregate care facilities in locations with convenient access to social, commercial, and medical services.	Development of senior citizen independent living and congregate care facilities are encouraged in locations convenient to social, commercial and medical services.	Administrative Services / *Community Development*
2.18.5	Promote volunteer involvement in all public programs and within the community as a whole.	The City promotes volunteer involvement through several departments and programs within the City.	Parks/Administrative Servic
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
9.2 Community Development Element Goals, Objectives Policies and Programs			
9.2.3 Community Development Element Programs			

2-1	Develop a community signing scheme for street corridors, public buildings and selected entrances to the community and its sub-communities.	This is completed in concert with the bi- annual City Capital Improvement Plan effort. It is implemented in conformance with existing policies and procedures for signing throughout the City, and when needed, new policies may be developed. Wayfinding signs have been installed at selected locations. Future Wayfinding signs will be installed as need arises. "Welcome to Moreno Valley" signs have been installed at selected entrance points to the City, with remaining signs to be installed as priorities and funds allow.	Planning/Public Wo Projects
2-2	Review and revise the Municipal Code to implement the goals, objectives and policies stated in the General Plan.	Periodically, the Municipal Code is revised and updated to reflect General Plan goals, objectives and policies. A General Plan annual report to review current General Plan standards is also completed and submitted to the Office of Planning and Research (OPR) each year. This is a policy that is reviewed annually with periodic updates throughout the year. This is an ongoing policy.	Planning
2-3	Conduct a detailed capital improvement program using the revised population projections and proposed land use characteristics of the General Plan.	A detailed capital improvement program is conducted bi-annually by the Capital Projects Division of Public Works. This is an ongoing policy.	Public Works/Planning/Capi Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2-4	Periodically study the feasibility of extending the sphere of influence north of the city limits and annexing unincorporated areas along the city boundary.	Designated spheres of influence have been established east and north of the city limits. The City periodically studies the extension of the existing spheres of influence to the north, with the latest attempt at expansion studied with the City Council in 2016. This is an ongoing policy.	Planning
2-5	Disseminate local childcare resource information and provide referral service to residents and businesses.	Childcare resource information is provided to residents and businesses in the City. Ongoing	Planning/Administrative Services
2-6	Encourage demand-response public transportation facilities, such as the mini-bus or dial-a-ride systems in order facilitate the transportation needs of the elderly and the disabled.	This is an on-going policy. Seniors and other users are encouraged to use para transit services provided by the Riverside Transit Agency. This is consistent with Chapter 9.11.080 of the Municipal Code.	Transportation/Planning
2-7	Provide City information identifying available social services and facilities in a broad range of formats.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Any projects funded with HOME or Housing Authority funding is provided on the City's website.	Housing/Administrative Services/Planning
2-8	Evaluate existing social programs under the City's purview, and determine if they adequately address the needs of the aged, the disabled, low-income families and persons in crisis situations.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Any projects funded with HOME or Housing Authority funding is provided at City's website.	Housing/Administrative Services/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

2-9	Work with other jurisdictions to seek changes in state law to allow reasonable controls on the location of community care facilities, foster homes and sober living facilities.	The City strives to work with surrounding jurisdictions and jurisdictions in California regarding state law and controls on location of community care facilities, foster homes and sober living.	Planning/Admin Services d
The City Structure Economic Development Goals and Policies			
9.3 9.3 Economic Development Element Goals, Objectives, Policies and Programs			
9.3.1 Economic Development Element Goals			
	To be inserted after development of Economic Development Strategy.	**This item will be completed with the MoVal 2040 Comprehensive General Plan Update due to be completed in summer 2021.**	Economic Development
9.3.2 Economic Development Element Policies			
	To be inserted after development of Economic Development Strategy.	**This item will be completed with the MoVal 2040 Comprehensive General Plan Update due to be completed in summer 2021.**	Economic Development
9.3.3 Economic Development Element Programs			
	To be inserted after development of Economic Development Strategy.	**This item will be completed with the MoVal 2040 Comprehensive General Plan Update due to be completed in summer 2021.**	Economic Development
The City Structure Parks, Recreation and Open Space Element Goals and Policies			
9.4 Parks, Recreation and Open Space Element Goals, Objectives, Policies and Programs			
9.4.1 Parks, Recreation and Open Space Element Goals			
Goal 4.1	To enhance Moreno Valley as a desirable place in which to live, work, shop, and do business.	The City provides numerous amenities for residents including parks, sports facilities, cultural/community centers, outdoor Amphitheater, new skate park, libraries, restaurants, stores, entertainment, and medical facilities, to promote the desirability of the City. Ongoing.	Parks / Community Services Economic Development
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Goal 4.2	To retain an open space system that will conserve natural resources, preserve scenic beauty, promote a healthful atmosphere, provide space for outdoor recreation, and protect the public safety.	The City promotes the preservation of it's natural resources and scenic beauty of open space, creating a healthy atmosphere for outdoor recreation and public safety, per MVMC Title 7. On-going.	Parks / Community Services Planning
9.4.2 Parks, Recreation and Open Space Element Objectives and Policies			

Objective 4.1	Retain agricultural open space as long as agricultural activities can be economically conducted, and are desired by agricultural interests, and provide for an orderly transition of agricultural lands to other urban and rural uses.	The City encourages agricultural open space land as long as the activities can be economically conducted and it is an objective to provide for orderly transition of agricultural uses to other urban/rural lands. Permitted uses Table 9.02.020 in the Municipal Code allows for agricultural and crop production in all land use zones Ongoing.	Planning
Policies:			
4.1.1	Encourage grazing and crop production as a compatible part of a rural residential atmosphere.	Permitted uses Table 9.02.020 allows for agricultural and crop production in all land use zones. Ongoing.	Planning
Objective 4.2	Provide safe, affordable and accessible recreation facilities and programs to meet the current and future needs of Moreno Valley's various age and interest groups and promote the provision of private recreational facilities.	The City provides numerous safe, affordable, and accessible recreation facilities to meet the various needs or multiple age and interest groups. There are currently 4 community centers and 28 public parks that have recreation amenities. Ongoing. **2020 - The Mayor and City Council broke ground on Santiago Park, Moreno Valley's 33rd Community Park and began construction of the new Civic Center Amphitheater and Park.**	Parks / Community Service
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.2.1	Neighborhood parks shall serve as the day-to-day recreational areas of the City, Neighborhood parks should be within a reasonable walking distance of the population served. Community parks may also serve day-to-day recreation needs. That portion of the community and/or regional facilities that provide similar amenities to those found in neighborhood parks shall also be considered as meeting this objective.	Neighborhood parks are designed and constructed to be located within a reasonable distance of the population they are intended to serve. Community parks are designed and constructed to include similar amenities as neighborhood parks to meet the objective of a neighborhood park. On-going.	Parks / Community Service

4.2.2	Community parks shall provide opportunities for participation in sports and related athletic activities, water-oriented recreation and other special interest activities (e.g. golf, tennis, equestrian, etc.).	Community parks provide opportunities for a variety of athletic activities. Examples of these include: Cottonwood Golf Center, Moreno Valley Equestrian Center, March Field and Community Park skate parks, tennis courts at three sites, basketball and pickleball courts at several sites, soccer arena, and splash pads in two parks. Ongoing.	Parks / Communit
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.2.3	Employ a multifaceted approach in the financing and acquisition, development and maintenance of parkland, including the financing of parklands through development fees, state and federal grant-in-aid programs, gifts and donations, and other sources.	Moreno Valley utilizes development impact fees, Quimby in lieu fees, Community Facilities and Services Districts, and various grants, to finance acquisition, development, and maintenance of parks and parkland. "Zone A was formed at City incorporation to provide a funding mechanism for parks and community services. Every parcel in the City contributes to Zone A. CFD No. 1 (Park Maintenance) was established on July 8, 2003. The District was formed to provide financing tool for the residential development community. It provides a mechanism to fund the operation and maintenance of parks constructed after district formation. All new residential development is conditioned to contribute to the District. NBS has been engaged to evaluate possible creation of a new CFD to provide for a tax rate layer for non-residential development.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

4.2.4	Encourage special events (tournaments, festivals, celebrations) that reflect the uniqueness of Moreno Valley and contribute to community identity, cohesiveness and stability.	Moreno Valley encourages and hosts several special events. Some are unique to the City, in order to bring together it's residents. Examples are: 4th of July Independence Parade and Family Fun Fest, Youth Fest, Springtastic Festival and Egg Hunt, Recreation Expo, Concerts/Movies in the Parks, Snow Day and Holiday Tree Lighting. Ongoing	Parks / Communit
4.2.5	Work in conjunction with private and public school districts and other public agencies to facilitate the public use of school grounds and facilities for recreational activities. The City shall also encourage the development of park sites adjacent to school facilities to maximize recreational opportunities in Moreno Valley.	The City has joint-use agreements with the school districts for use of recreation facilities. The City encourages new developments to construct parks next to schools to maximize recreational opportunities in the City. Ongoing.	Parks / Community Service
4.2.6	The City shall use cost effectiveness, demand and need for service and potential return on investment as criteria for the development and operation of future recreational facilities and programs.	The City Council sets activities/program fees. Typically, senior programs are no-cost and youth and adult fees are cost recovery. Sponsorships are utilized to off-set costs. Ongoing.	Parks / Community Service
4.2.7	The City level of service standard is 3 acres of developed parkland for every 1,000 new residents. Exceptions from this ratio may be made in exchange for extraordinary amenities of comparable economic value. Land not suitable for active recreation purposes may not be counted toward fulfilling parkland dedication requirements.	This item will be reviewed with the MoVal 2040 Comprehensive General Plan Update due to be completed in summer 2021.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

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4.2.8	Encourage the development of recreational facilities within private developments, with appropriate mechanisms to ensure that such facilities are properly maintained and that they remain available to residents in perpetuity.	The Planning Division encourages development of recreational facilities within private developments, with facility maintenance provided through required Covenants, Conditions and Restrictions (CC&R's) and through a Homeowners Association.	Planning
4.2.9	In conjunction with the school districts, civic organizations, and other private, civic-minded entities, encourage and participate in the provision of organized recreational activities for Moreno Valley residents of all ages.	The City has many programs that incorporate organized recreation activities for schools, civic organizations, and private civic-minded entities. These are designed to encourage participation in organized recreational activities for resident of all ages.	Parks / Community Service
4.2.10	Involve individuals and citizen groups reflecting a cross section of Moreno Valley citizens (including youth and adults) in the planning, design and maintenance of parks, recreation facilities and recreation programs.	The City has established a Park and Trail adoption system for individuals and groups to assist with the maintenance of parks and trails. City has several boards and commissions that assist with the planning and design of recreation facilities, parks, and trails. Ongoing	Parks / Community Service
4.2.11	Emphasize joint planning and cooperation with all public agencies as the preferred approach to meeting the parks and program needs of Moreno Valley citizens.	Moreno Valley jointly plans and cooperates with the local fire department, police department, and water district, in its approach to meet the needs of citizens. On- going	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.2.12	Include multi-functional spaces and facilities in parks to facilitate cultural events.	Moreno Valley utilizes parks and the Conference and Recreation Center to facilitate cultural events such as: movies and concerts in the park; Day of the Dead, and various heritage related events. The new Amphitheater will allow for additional cultural events such as El Grito.	Parks / Community Service

4.2.13	Provide recreation programs and access to facilities at reasonable costs.	Ongoing - The MoVal Gives program is a scholarship program that assists disadvantaged youth to participate in recreation programming at little to no-cost.	Parks / Communit d
4.2.14	Establish linear parks in agreement with public and private utilities, including the State of California along the California Aqueduct, for the use and maintenance of utility corridors and rights-of-way for recreational purposes.	The City currently has agreements with the State Department of Water Resources for use of land over the California Aqueduct pipeline and Edison for the Sunnymead Ranch Linear Park, and Rancho Verde Park and Juan Bautista Trail. Ongoing	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.2.15	Work closely with Riverside County Parks Department in its open space program to ensure that trail systems within Moreno Valley effectively link open space components.	The City requires developers that are located on Riverside County boundaries to coordinate their trail plans with the County Parks. (On- going) "Zone A was formed at City incorporation to provide a funding mechanism for parks and community services. Every parcel in the City contributes to Zone A. CFD No. 1 (Park Maintenance) was established on July 8, 2003. The District was formed to provide financing tool for the residential development community. It provides a mechanism to fund the operation and maintenance of parks constructed after district formation. All new residential development is conditioned to contribute to the District.	Parks / Community Service

4.2.16	Acquire land jointly with the local school districts for future school/park sites.	The City makes every effort to coordinate placing parks next to schools. An example of an undeveloped park next to a school is adjacent to March Middle School. Through a joint-use agreement the City had two lighted ball fields constructed on the school and has a developer dedicated and construct Santiago park adjacent to the school. On-going	Parks / Communit
4.2.17	Require new development to contribute to the park needs of the City.	New development is required to provide fully functioning parks or a in-lieu fee for future construction of parks.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.2.18	Provide lighted sports fields to increase availability and utilization of courts and playing field facilities.	Where funding allows, the City has added or revamped lighting of sport facilities. Added/revamped facilities include Lassalle Sports Park and Morrison Park. Ongoing	Parks / Community Service
Objective 4.3	Develop a hierarchical system of trails which contribute to environmental quality and energy conservation by providing alternatives to motorized vehicular travel and opportunities for recreational equestrian riding, bicycle riding, and hiking, and that connects with major regional trail systems.	The City has a master plan of multi-use trails and non-motorized bike trails throughout the City. They are designed to connect to trails and adjacent agencies. The trail plan is reviewed with each development annexing the City, each development building in the City, and on a yearly basis. Ongoing	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
4.3.1	The City's network of multiuse trails, including regional trails, community trails, and local feeder trails, shall (1) be integrated with recreational, residential and commercial areas, schools and equestrian centers; (2) provide access to community resources and facilities, and (3) connect urban populations with passage to hillsides, ridgelines, and other scenic areas.	Per the Master Plan of Trails and the General Plan, trails are incorporated into parks, residential, commercial, and industrial developments. In many instances, trails provide access to facilities and other community resources. Trails are designed to connect to scenic areas. Ongoing	Parks / Community Service

4.3.2	The City shall establish an agreement with public and private utilities for the use and maintenance of utility corridors and rights-of-way for trail purposes.	The City has several agreements with both public and private utilities for the design, construction, and maintenance of trails. Examples of these include the California Department of Water Resources, The Gas Company, and Southern California Edison. Ongoing	Parks / Communit
4.3.3	All new development approvals shall be contingent on trail right-of-way dedication and improvement in accordance with the Master Plan of Trails (Figure 4-5).	In adherence to the Master Plan of Trails, the City may require fee or easement dedication for trails. New developments that annex to the City may be required to provide similar amenities. On-going	Parks / Community Service
4.3.4	In conjunction with all development review, the City shall consider multiuse trail access and traditional travel routes through the property.	Per the Master Plan of Trails and the General Plan, trails are incorporated into many developments adjacent to traditional travel routes (streets and sidewalks). On-going	Parks / Community Service
4.3.5	In conjunction with the review and approval of nonresidential developments, the City should consider the use of multiuse trail amenities such as hitching posts, benches, rest areas, and drinking facilities.	In adherence to the Master Plan of Trails, the City may require trails and related amenities within nonresidential development.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.3.6	Wherever possible, development of residential areas conditioned for animal keeping on lots of ½ acre or larger, shall include a decomposed granite trail on one side of the street and traditional concrete sidewalk on the other.	Where applicable, feeder trails are conditioned for residential developments that allow animal keeping. The standard is to have a trail on one side of the street and a traditional sidewalk on the other. On-going	Parks / Community Service
4.3.7	Trail design and construction should take into consideration the safety and convenience of all trail users as the primary concern.	User safety and convenience are the upmost concern in the planning and construction of multi-use trails. On-going	Parks / Community Service

4.3.8	The City should facilitate the development of a multiuse regional trail system.	The City has been working with the County of Riverside and Lake Perris State Park to coordinate trail systems. On-going	Parks / Communit
4.3.9	Unless otherwise specified due to fire department requirements, access or as established by a specific plan, city trails along roadways shall be ten (10) feet wide and shall be constructed with decomposed granite or equal material and shall provide appropriate fencing or other devices where needed to delineate trails from vehicular rights-of-way.	Multi-use trails where located adjacent or near roadways are designed to have a minimum flat surface of ten (10) foot in width, with a 2% cross-slope. Trails are delineated from vehicular traffic by means of fencing and or shrubbery. Trail surfaces are stabilized granite with a minimum thickness of four (4) inches.	Parks / Community Service
4.3.10	Where firefighting access is required, trails shall be 20' wide to meet the needs of the Fire Department and its equipment. Fire Department requirements shall be met in all conditions where access is required.	Where fire access and a trail is required, the minimum width of the trail shall be 20', to accommodate fire equipment and staging. On-going	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4.3.11	In unusual situations where legal or topographical barriers exist (e.g., excessive slope, the configuration of right-of-way, existing vegetation, etc.), the City shall have the discretion to amend the trail requirement as needed to accomplish the goals of this General Plan.	The City makes amendments to specific trail locations, based on various topographical barriers. This is done to create a trail system that can be utilized by the majority of citizens, without inconvenience to residents. On-going	Parks / Community Service
4.3.12	Local feeder trails shall connect residential lots in property zoned for horse keeping to the community trail system.	Where appropriate zoning exists, the City requires developers to install Feeder Trails that connect residential lots to the City's Trail System. On-going	Parks / Community Service
4.3.13	The City will encourage volunteer programs for the improvement of existing trails for the purpose of providing an integrated trail network that is safe, functional and readily accessible.	The City encourages volunteers for it's "Beautify MoVal Trails" Program, to maintain safe, functional, and accessible trails. To date, individuals to civic organizations have become volunteers. This is an on-going program.	Parks / Community Service

4.3.14	Where feasible, use drainage courses, utility rights-of-way and other such opportunities to incorporate trail and open space elements in the design of major development projects.	The City evaluates developer projects to maximize the undeveloped space for use with trails, passive parks, and open space. Ongoing	Parks / Communit d
4.3.15	Utilize the Citizen's Advisory Board on Recreational Trails in making recommendations to City Council for the distribution of funds for the construction of new trails.	When funds are available, the Recreation Trails Board would be recommending body to City Council for distribution of funds to construct new trails. Ongoing	Parks / Community Service
9.4.3 Parks, Recreation and Open Space Element Programs			
Programs:			
4-1	Develop a parks and recreation facilities master plan to implement the Parks and Recreation Element.	In 2012 the City developed a Parks Master Plan, to outline the current recreational facilities, as well to identify the deficiencies. The master plan is a living document, to be updated periodically.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4-2	Develop policies and criteria for the establishment of trails and rest/picnic areas in natural open space areas.	The City has developed policies and criteria for the establishment of trails and rest stops in open space areas. Ongoing	Parks / Community Service
4-3	Set policies and criteria for the establishment of greenbelt standards and design guidelines to allow flexibility in design of greenbelt/parks/open spaces areas within new development as long as non-auto circulation corridors (for equestrians, bicycles, pedestrians, etc.) are provided and the overall dedication requirement for greenbelt and park facilities is met.	The City has set policies and criteria for the design and construction of greenbelts, parks, and open space. Several provide for the use of equestrians, bicycles, and pedestrians. These uses have become dedication requirements. Reviews of standards and design are under review every one to two years.	Parks / Community Service
4-4	Explore the feasibility of requiring new development to provide a percentage of the development in greenbelt area.	New developments are examined for possible greenbelts. Many of these developments are required to construct these greenbelts for the resident's use.	Parks / Community Service

4-5	Provide on-going opportunities for public involvement and input into the park planning process.	The public is involved in assessing the current and future needs of park amenities. Some of this is done through committees/boards/commissions and some it through community meetings. On-going	Parks / Communit
4-6	Maintain advisory committees, such as the Parks and Recreation Advisory Committee, created by City Council in 1988, to serve in an advisory capacity on parks and recreation issues.	The City Parks and Community Services Departments maintains commissions/boards such as the Parks, Community Services and Trails Committee, Senior Citizen Advisory Board, various sports groups, and the Arts Commission.	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4-7	Work with coalitions of sports organizations to define mutually compatible facility needs and mechanisms for the development, construction, operation and maintenance of these facilities.	The City consistently meets with various sports groups to discuss facilities and their needs. The City utilizes this information to design and construct new facilities as well as modify existing facilities. Ongoing.	Parks / Community Service
4-8	Investigate the feasibility of establishing a non-profit foundation to seek and receive donations from private sources for the support of Parks and Recreation programs and facilities.	The City's Library currently has a foundation for capital improvements. The Moreno Valley Community Foundation can be expanded upon to include various parks commissions/boards for specific programs. However, this must be approved by the IRS, so it does not jeopardize the City's tax exempt status. This program needs more investigation for additional uses. Ongoing.	Parks / Community Service
4-9	Acquire land and develop neighborhood and community parks in the "Recommended Future Parkland Acquisition Areas" shown in Figure 4-4.	**Figure 4-4 was not provided in the 2006 General Plan. This item will need to be removed or updated with the next comprehensive General Plan update.**	Parks / Community Service

4-10	Prepare a comprehensive plan of trails that clearly defines the routing of city trails and is part of the General Plan.	During the last General Plan update a comprehensive master plan of trails was adopted, which defines locations for city trails.	Parks / Communit
4-11	Develop policies and criteria for the establishment of multiuse trails and rest/picnic areas in natural open space areas.	The City has developed policies and criteria for the establishment of trails and rest stops in open space areas. On-going. **This is a duplicate of Policy 4.2, and shall be removed during the next comprehensive General Plan Update (MoVal 2040).**	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
4-12	Periodically review the Master Plan of Trails to show existing and planned trails.	The Master Plan of Trails is periodically reviewed, adding newly constructed trails to the plan. Ongoing with yearly reviews.	Parks / Community Service
4-13	Enact ordinances requiring developers to incorporate trail corridors into their development plans in accordance with the Master Plan of Trails.	Ordinance 359 (1992) provides for recreational facilities for trails per the Master Plan of Trails.	Parks / Community Service
4-14	Develop standards for residential feeder trails to guide developers in locating and constructing trails and for the arrangement of on-going maintenance requirements of the trails.	The City has developed construction standards for residential feeder trails to guide developers in locating feeder trails, as well as requirement for the development to establish a funding mechanism to maintain these trails. On-going program	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

4-15	Establish a fee system for the equitable distribution of the cost of developing and maintaining trails citywide.	The City has established a Community Facilities District to pay for the cost of developing and maintaining trails. (On-going program.) Zone A was formed at City incorporation to provide a funding mechanism for parks and community services. Every parcel in the City contributes to Zone A. CFD No. 1 (Park Maintenance) was established on July 8, 2003. The District was formed to provide financing tool for the residential development community. It provides a mechanism to fund the operation and maintenance of parks constructed after district formation. All new residential development is conditioned to contribute to the District. Willdan Financial has been engaged to evaluate possible amendment to CFD No. 1 or creation of a new CFD to provide for a tax rate layer for non-residential development	Parks / Communit
4-16	Investigate the feasibility of creating a special district(s) for the purpose of acquiring and managing open space and trails.	Currently, the City has a special district to manage trails. However, it has been the responsibility of developer associations to acquire and maintain open space.	Parks / Community Service
4-17	Seek out and apply for grants sponsored by state and federal agencies, such as the Recreational Trails Program administered by the Federal Highways Administration and the State Department of Parks and Recreation.	The City applies for several grants for trails, if the qualifications are met. On-going program	Parks / Community Service
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
The City Structure Circulation Element Goals, Objectives, Policies, and Programs			
9.5 Circulation Element Goals, Objectives, Policies, and Programs			

9.5.1 Circulation Element Goals			
Goal 5.1	Develop a safe, efficient, environmentally and financially sound, integrated vehicular circulation system consistent with the City General Plan Circulation Element Map, Figure 9-1, which provides access to development and supports mobility requirements of the system's users.	This is an on-going goal. It is accomplished through provisions of Titles 9 and 12 of the Municipal Code.	Transportation
Goal 5.2	Maintain safe and adequate pedestrian, bicycle, and public transportation systems to provide alternatives to single occupant vehicular travel and to support planned land uses.	This is an on-going goal. It is accomplished through provisions of Titles 9 and 12 of the Municipal Code.	Transportation
9.5.2 Circulation Element Objectives and Goals			
Objective 5.1	Create a safe, efficient and neighborhood- friendly street system.	This is an on-going objective. It is accomplished in accordance with Titles 9 and 12 of the Municipal Code.	Transportation
Policies:			
5.1.1	Plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians, and bicycles.	This is an on-going policy. It is implemented in accordance with Title 9 of the Municipal Code.	Transportation
5.1.2	Plan the circulation system to reduce conflicts between vehicular, pedestrian and bicycle traffic.	This is an on-going policy. It is implemented in accordance with Titles 9 and 12 of the Municipal Code.	Transportation
5.1.3	Require adequate off-street parking for all developments.	This is an on-going policy. It is implemented in accordance with Chapter 9.11 of the Municipal Code.	Transportation
5.1.4	Driveway placement shall be designed for safety and to enhance circulation wherever possible.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.1.5	Incorporate American Disability Act (ADA) and Title 24 requirements in roadway improvements as appropriate.	This is an on-going policy. It is implemented in accordance with Chapter 9 of the Municipal Code.	Transportation/Capital Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.1.6	Design new developments to provide opportunity for access and circulation to future adjacent developments.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation

Objective 5.2	Implement access management policies.	This is an on-going objective. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat d
Policies:			
5.2.1	Locate residential units with access from local streets. Minimize direct residential access from collectors. Prohibit direct single-family driveway access on arterials and higher classification roadways.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.2.2	Feed short local streets into collectors.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.2.3	Encourage the incorporation of traffic calming design into local and collector streets to promote safe vehicle speeds.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 and Title 12 of the Municipal Code.	Transportation
5.2.4	Design new subdivisions to minimize the disruptive impact of motor vehicles on local streets. Long, broad and linear streets should be avoided. Residential streets should be no wider than 40 feet, and should have an uninterrupted length of less than one half mile. Curvilinear streets and cul-de-sacs are preferred. Streets within the subdivision should be designed to facilitate access to residences and to discourage through traffic.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 5.3	Maintain Level of Service (LOS) "C" on roadway links, wherever possible, and LOS "D" in the vicinity of SR 60 and high employment centers. Figure 9-2 depicts the LOS standards that are applicable to all segments of the General Plan Circulation Element Map.	This is an on-going objective. It is implemented in accordance with Title 9 of the Municipal Code. **A complete review of the Circulation Element will be accomplished with the next General Plan update.**	Transportation
Policies:			

5.3.1	Obtain right-of-way and construct roadways in accordance with the designations shown on the General Plan Circulation Element Map and the City street improvement standards.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat d
5.3.2	Wherever feasible, promote the development of roadways in accordance with the City standard roadway cross-sections, as shown in Figure 9-3. Cross- sections range from two-lane undivided roadways to 8- lane divided facilities.	This is an on-going policy. It is implemented in accordance with Chapters 9.14.100 of the Municipal Code.	Transportation
5.3.3	Create new roadway classifications to accommodate future traffic demand, including; Divided Major Arterial - Reduced Cross-Section, and Divided Arterial - 6-lane. These cross-sections are shown on Figure 9-3.	This is an on-going policy. It is implemented in accordance with Chapter 9.14.100 of the Municipal Code.	Transportation
5.3.4	For planning purposes, utilize LOS standards shown on Table 5 - 1 to determine recommended roadway widths.	This is an on-going policy. It is implemented in accordance with Title 9 of the Municipal Code. **A complete review of the Circulation Element will be accomplished with the next General Plan update.**	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.3.5	Ensure that new development pays a fair share of costs to provide local and regional transportation improvements and to mitigate cumulative traffic impacts. For this purpose, require new developments to participate in Transportation Uniform Mitigation Fee Program (TUMF), the Development Impact Fee Program (DIF) and any other applicable transportation fee programs and benefit assessment districts.	This is an on-going policy. It is implemented in accordance with Title 3 of the Municipal Code.	Transportation

5.3.6	Where new developments would increase traffic flows beyond the LOS C (or LOS D, where applicable), require appropriate and feasible mitigation measures as a condition of approval. Such measures may include extra right-of-way and improvements to accommodate left-turn and right-turn lanes at intersections, or other improvements.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat
5.3.7	Provide consideration to projects that have overriding regional or local benefits that would be desirable even though the LOS standards cannot be met. These projects would be required to analyze traffic impacts and mitigate such impacts to the extent that it is deemed feasible.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.3.8	Pursue arterial improvements that link and/or cross the State route 60 (SR-60) Freeway, including an additional over-crossing at Graham Street.	This is an on-going policy. An additional over- crossing at Graham Street is shown as Initiative 4.6.4 of the City's Strategic Plan.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.3.9	Address additional widenings at arterials providing access to SR-60 at Day Street, Frederick Street/Pigeon Pass road and Perris Boulevard.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. **A complete review of the Circulation Element will be accomplished with the next General Plan update.**	Transportation
Objective 5.4	Maximize efficiency of the regional circulation system through close coordination with state and regional agencies and implementation of regional transportation policies.	This is an on-going objective. The City works closely with all state and regional agencies to enhance the efficiency of the regional circulation system.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

5.4.1	Coordinate with Caltrans and the Riverside County Transportation Commission (RCTC) to identify and protect ultimate rights-of-way, including those for freeways, regional arterial projects, transit, bikeways and interchange expansion.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. **A complete review of the Circulation Element will be accomplished with the next General Plan update.**	Transportat
5.4.2	Coordinate with Caltrans and RCTC regarding the integration of Intelligent Transportation Systems (ITS) consistent with the principles and recommendations of the Inland Empire Regional ITS Architecture Project.	This is an on-going policy. It is implemented in accordance with the City's ITS Master Plan.	Transportation
5.4.3	Work with property owners, in cooperation with RCTC, to reserve rights-of-way for potential Community and Environmental Transportation Acceptability Process (CETAP) corridors through site design, dedication, and land acquisition, as appropriate.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. **A complete review of the Circulation Element will be accomplished with the next General Plan update.**	Transportation
5.4.4	The City Council will commit to establishing ongoing relationships with all agencies that play a role in the development of the City's transportation system. Council members who are appointed to these agencies as City representatives shall seek out leadership roles to maximize their effectiveness on behalf of the City. Council will strive to maintain continuity in their appointments of representatives to promote effective representation.	This is an on-going policy. The Administrative Codes for various regional agencies define the requirements for elected officials to be represented on their Executive Boards.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.4.5	Work with RCTC, WRCOG, and the TUMF Central Zone Committee to facilitate the expeditious construction of TUMF Network projects, especially projects that directly benefit Moreno Valley.	This is an on-going policy. The City has designated certain Public Works staff to represent Moreno Valley interests at various Technical Advisory meetings.	Transportation

5.4.6	Cooperatively participate with SCAG, RCTC, and WRCOG in the planning for a transportation system that anticipates regional needs for the safe and efficient movement of goods and people.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. A complete review of the Circulation Element will be accomplished with the next General Plan update.	Transportat d
5.4.7	Utilizing a combination of regional, state and federal funds, development impact fees, and other locally generated funds, provide needed improvements along SR 60 and the associated interchanges, including interchange and grade separation improvements.	This is an on-going policy. It is implemented in accordance with Chapters 3.44 and 9.11.080 of the Municipal Code.	Transportation
5.4.8	Reserve rights-of-way to accomplish future improvements as specified in the Caltrans District 8 Route Concept Fact Sheet for SR-60. Specifically, SR- 60 shall be built to six general purpose lanes and two High Occupancy Vehicle (HOV) lanes through Moreno Valley. Additional auxiliary lanes may be required between interchanges. The need for auxiliary lanes will be determined from future studies.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. A complete review of the Circulation Element will be accomplished with the next General Plan update.	Transportation
5.4.9	Lobby the State Legislature to keep triple trailer trucks off highways in developed areas of California.	This policy will be updated with the General Plan update	Transportation
Objective 5.5	Maximize efficiency of the local circulation system by using appropriate policies and standards to design, locate and size roadways.	This is an on-going objective primarily accomplished through provisions in Chapter 9.11.080 of the Municipal Code.	Transportation
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.5.1	Space Collectors between higher classification roadways within development areas at appropriate one-quarter mile intervals.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.5.2	Provide dedicated left-turn lanes at all major intersections on minor arterials and higher classification roadways.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation

5.5.3	Prohibit points of access from conflicting with other existing or planned access points. Require points of access to roadways to be separated sufficiently to maintain capacity, efficiency, and safety of the traffic flow.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat
5.5.4	Wherever possible, minimize the frequency of access points along streets by the consolidation of access points between adjacent properties on all circulation element streets, excluding collectors.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.5.5	Design streets and intersections in accordance with the Moreno Valley Municipal Code.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.5.6	Consider the overall safety, efficiency and capacity of street designs as more important than the location of on-street parking.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.5.7	For developments fronting both sides of a street, require that streets be constructed to full width. Where new developments front only one side of a street, require that streets be constructed to half width plus an additional 12-foot lane for opposing traffic, whenever possible. Additional width may be needed for medians or left and/or right turn lanes.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.5.8	Whenever possible, require private and public land developments to provide on-site and off-site improvements necessary to mitigate any development- generated circulation impacts. A review of each proposed land development project shall be undertaken to identify project impacts to the circulation system. The City may require developers to provide traffic impact studies prepared by qualified professionals to identify the impacts of a development.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation

5.5.9	Design curves and grades to permit safe movement of vehicular traffic per applicable Caltrans and Moreno Valley standards.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat
5.5.10	Provide adequate sight distances for safe vehicular movement at all intersections and driveways.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5.5.11	Implement National Pollutant Discharge Elimination System Best Management Practices relating to construction of roadways to control runoff contamination from affecting water resources.	The National Pollutant Discharge Elimination System Best Management Practices are required for projects relating to the construction of roadways, to control runoff contamination from impacting water resources (ongoing).	Transportation
Objective 5.6	Support development of a ground access system to March Inland Port in accordance with its development plan as a major cargo airport.	This is an on-going objective. The City works closely with the March Joint Powers Authority in implementing strategies / development in support of a major cargo airport.	Transportation
Policies:			
5.6.1	Ensure that City arterials that provide access to and from March Inland Port are properly designed to accommodate projected traffic volumes, including truck traffic.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.6.2	Ensure that traffic routes to March Inland Port are planned to minimize impacts to City residential communities.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Objective 5.7	Design roads to meet the needs of the residents of the community without detracting from the "rural" atmosphere in designated portions of Moreno Valley. (Designated "rural" areas include those encompassed by the Residential Agriculture 2, Residential 1, Rural Residential and Hillside Residential zoning districts. "Urban" areas encompass all other zoning districts.)	This is an on-going objective. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Policies:			

5.7.1	Pursue development of modified sidewalk standards for local and collector roads within low density areas to reflect the rural character of those areas.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat
5.7.2	Provide sidewalks on arterials in designated low density areas that provide access to schools and bus stops.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Objective 5.8	Encourage development of an efficient public transportation system for the entire community.	This is an on-going objective. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Policies:			
5.8.1	Support the development of high-speed transit linkages, or express routes, that would benefit the citizens and employers of Moreno Valley.	This is an on-going policy. The City works closely with Riverside Transit Agency (RTA) in the implementation of Bus Rapid Transit routes as developed in the RTA Comprehensive Operational Analysis (COA).	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.8.2	Support the efforts of the March Joint Powers Authority in its pursuit of a Transit Center.	This is an on-going policy. The City works closely with Riverside Transit Agency (RTA) in the implementation of recommended improvements developed in the RTA Comprehensive Operational Analysis (COA).	Transportation
5.8.3	Encourage public transportation opportunities that address the particular needs of transit dependent individuals in the City such as senior citizens, the disabled and low -income residents.	This is an on-going policy. The City works closely with Riverside Transit Agency (RTA) in the implementation of recommended improvements developed in the RTA Comprehensive Operational Analysis (COA).	Transportation
5.8.4	Ensure that all new developments make adequate provision for bus stops and turnout areas for both public transit and school bus service.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation

5.8.5	Continue on-going coordination with transit authorities toward the expansion of transit facilities into newly developed areas.	This is an on-going policy. The City works closely with Riverside Transit Agency (RTA) in the implementation of recommended improvements developed in the RTA Comprehensive Operational Analysis (COA).	Transportat
Objective 5.9	Support and encourage development of safe, efficient and aesthetic pedestrian facilities.	This is an on-going objective. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.9.1	Encourage walking as an alternative to single occupancy vehicle travel, and help ensure the safety of the pedestrian as follows: (a) All new developments shall provide sidewalks in conformance with the City's streets cross-section standards, and applicable policies for designated urban and rural areas. (b) The City shall actively pursue funding for the infill of sidewalks in developed areas. The highest priority shall be to provide sidewalks on designated school routes.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.100 of the Municipal Code.	Transportation
5.9.2	Walkways shall be designed to minimize conflicts between vehicles and pedestrians.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.100 of the Municipal Code.	Transportation
5.9.3	Where appropriate, provide amenities such as, but not limited to, enhanced paving, seating, and landscaping to enhance the pedestrian experience.	This is an on-going policy. New development is reviewed and conditioned to provide pedestrian friendly infrastructure in accordance with 9.11.100 of the Municipal Code.	Transportation
5.9.4	Require the provision of convenient and safe pedestrian access to buildings from the public sidewalk.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.100 of the Municipal Code.	Transportation

Objective 5.10	Encourage bicycling as an alternative to single occupant vehicle travel for the purpose of reducing fuel consumption, traffic congestion, and air pollution. The Moreno Bikeway Plan is shown in Figure 9-4.	This is an on-going objective. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportat
Policies:			
5.10.1	Bikeways shall link residential neighborhood areas with parks, employment centers, civic and commercial areas, and schools.	This is an on-going policy. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan. age 72 of 127	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5.10.2	Integrate bikeways, consistent with the Bikeway Plan, with the circulation system and maintain Class II and III bikeways as part of the City's street system.	This is an on-going policy. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportation
5.10.3	Support bicycle safety programs, and active enforcement of laws relating to the safe operation of bicycles on City streets.	This is an on-going policy. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportation
5.10.4	Link local bikeways with existing and planned regional bikeways.	This is an on-going policy. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportation
Objective 5.11	Eliminate obstructions that impede safe movement of vehicles, bicyclists, and pedestrians.	This is an on-going objective. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

5.11.1	Landscaping adjacent to City streets, sidewalks and bikeways shall be designed, installed and maintained so as not to physically or visually impede public use of these facilities. (a) The removal or relocation of mature trees, street trees and landscaping may be necessary to construct safe pedestrian, bicycle and street facilities. (b) New landscaping, especially street trees shall be planted in such a manner to avoid overhang into streets, obstruction of traffic control devices or sight distances, or creation of other safety hazards.	This is an on-going program. Transportation Engineering works closely with Special Districts to ensure existing and proposed landscaping does not interfere with traffic control devices or pose any problems for pedestrians and cyclists.	Transportat
5.11.2	Driveways shall be designed to avoid conflicts with pedestrian and bicycle travel.	This is an on-going policy. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Objective 5.12	Promote efficient circulation planning for all school sites that will maximize pedestrian safety, and minimize traffic congestion and neighborhood impacts.	This is an on-going objective. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
Policies:			
5.12.1	Coordinate with school districts to identify suggested pedestrian routes within existing and new subdivisions for school children to walk to and from schools and/or bus stops.	This is an on-going policy. The city has a robust Safe Routes to School Program which provides for designated walking routes, and school age pedestrian education / encouragement outreach efforts.	Transportation
9.5.3 Circulation Element Programs			
Programs:			Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5-1	Periodically review current traffic volumes, traffic collision data, and the pattern of urban development to coordinate, program, and as necessary revise the planning and prioritization of road improvements.	This is an on-going program. It is implemented in accordance with Title 12 of the Municipal Code.	Transportation

5-2	Periodically, reassess the goals, objectives and policies statements of the Circulation Element and propose amendments, as necessary.	This is an on-going program. **A comprehensive review of the Circulation Element will be performed with the next update of the General Plan.**	Transportat
5-3	Develop a comprehensive strategy to ensure full funding of the circulation system. The strategy will include the DIF, TUMF, and other funding sources that may be available to the City. In addition, the creation of benefit assessment districts, and road and bridge fee districts may be considered where appropriate.	This is an on-going policy. It is implemented in accordance with Title 3 of the Municipal Code.	Transportation
5-4	Develop a multi-year transportation infrastructure improvement program that, to the extent feasible, phases the construction of new projects in advance of new development.	This is a bi-annual City Capital Improvement Plan effort. It is implemented in accordance with the City's bi-annual budget process.	Transportation
5-5	The above referenced program will prioritize circulation improvement projects to be funded from DIF, TUMF and other sources. Prioritization to consider the following factors: (a) Traffic safety; (b) Congestion relief; (c) Access to new development; (d) Equitable benefit.	This is a bi-annual City Capital Improvement Plan effort. It is implemented in accordance with the City's bi-annual budget process.	Transportation/ Capital Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

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5-6	Conduct studies of specified arterial segments to determine if any additional improvements will be needed to maintain an acceptable LOS at General Plan build-out. Generally, these segments will be studied as new developments are proposed in their vicinity. Measures will be identified that are consistent with the Circulation Element designation of these roadway segments, such as additional turn lanes at intersections, signal optimization by coordination and enhanced phasing, and travel demand management measures. The study of specified arterial segments will be required to identify measures to maintain an acceptable LOS at General Plan build-out for at least one of the reasons discussed below: (a) Segments will need improvement, but their ultimate volumes slightly exceed design capabilities. (b) Segments will need improvements but require inter-jurisdictional coordination. (c) Segments would require significant encroachment on existing adjacent development if built-out to their Circulation Element designations.	This is an on-going program. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. The Circulation Element will undergo an extensive analysis with the next update of the General Plan.	Transportat
5-7	Establish traffic study guidelines to deal with development projects in a consistent manner. The traffic study guidelines shall include criteria for projects that propose changes it the approved General Plan land uses.	This is an on-going program. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code. **Traffic study guidelines will be modified with the next update of the General Plan to ensure compliance with SB 743.**	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

5-8	Develop access guidelines for arterials with commercial frontage to facilitate access to development and preservation of safe flow of traffic. A component of guidelines shall address shared access.	This is an on-going program. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportat
5-9	Collaborate with all adjacent jurisdictions to implement and integrate right-of-way requirements and improvement standards for General Plan roads that cross-jurisdictional boundary.	This is an on-going program. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5-10	Support regional projects that improve access to Moreno Valley. Examples of specific ongoing projects that should be supported include: (a) CETAP Cajalco alignment and extension to State Route 241 in Orange County; (b) CETAP Moreno Valley to San Bernardino alternative alignments including Reche Canyon Road / Reche Vista Road alignment and the Pigeon Pass Road to Pepper Avenue alignment; (c) TUMF Backbone Network projects to widen Alessandro Boulevard and Van Buren Boulevard; (d) Measure A projects to widen SR-60 through the Badlands, widen Interstate 215 (I-215) from Riverside interchange to Interstate 10, and extension of San Jacinto commuter rail line; (e) Construction of commuter rail stations in Highgrove, and at the intersection of Alessandro at I- 215; (f) Construction of HOV ramp connector from westbound SR-60 to south bound I-215; (g) Widen SR-60/I-215 from Moreno Valley interchange to Riverside interchange.	This is an on-going program. The City has designated certain Public Works staff to represent Moreno Valley interests at various Technical Advisory meetings. In progress: TUMF Backbone Network projects to widen Alessandro Boulevard and Van Buren Boulevard Completed: Widening of Interstate 215 (I-215) from Riverside interchange to Interstate 10 Widening of SR-60/I-215 from Moreno Valley interchange to Riverside interchange Commuter rail stations in Highgrove, and at the intersection of Alessandro at I- 215 have be built	Transportation/ Capital Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5-11	Work with RCTC, Caltrans, County of Riverside, adjacent jurisdictions and other affected agencies to plan and develop a multi-modal transportation system.	This is an on-going program. The City works closely with regional partners in the development of a circulation system that supports all modes of transportation.	Transportation

5-12	Coordinate with Caltrans to redesign and reconstruct the SR-60 interchanges with Day Street, Perris Boulevard, Nason Street, Moreno Beach Drive, Redlands Boulevard, Theodore Street and Gilman Springs Road.	This is completed in concert with the bi- annual City Capital Improvement Plan effort. It is implemented in accordance with the City's bi-annual budget process and Riverside County's bi-annual Federal Transportation Improvement Plan (FTIP) process. Nason Street interchange is complete	Transportat Capital Projects
5-13	Implement Transportation demand management (TDM) strategies that reduce congestion in the peak travel hours. Examples include carpooling, telecommuting, and flexible work hours.	This is an on-going program. It is implemented in accordance with Chapter 9.11.080 of the Municipal Code.	Transportation
5-14	Implement programs in support of the efforts of Riverside Transit Agency toward the expansion of the existing bus system within the City and the provision of future public transportation consistent with the Riverside County Transit Plan.	This is an on-going program. The City works closely with Riverside Transit Agency (RTA) in the implementation of recommended improvements developed in the RTA Comprehensive Operational Analysis (COA).	Transportation
5-15	Work with Riverside County Transportation Commission and Riverside Transit Agency to implement the Transit Oasis system.	This program is out of date and will be updated with the General Plan update. The City worked with RTA when they developed their Comprehensive Operational Analysis which is their long range planning document.	Transportation
5-16	Implement programs that mitigate on-street hazards for bicyclists.	This is an on-going program. Bicycle Infrastructure is developed in accordance with the adopted Bicycle Master Plan.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
5-17	Pursue regional, state and federal grant opportunities to fund design and construction of the City bikeway system.	This is an on-going program. Bicycle Infrastructure funding opportunities are identified in the adopted Bicycle Master Plan.	Transportation
5-18	Pursue grant funding that supports traffic safety at and in the vicinity of school facilities.	This is an on-going program. The City aggressively pursues all traffic safety related grant funding.	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

5-19	Work with school districts and private schools to identify school site locations and designs that will minimize traffic impacts and promote traffic safety.	This is an on-going program. The city has a robust Safe Routes to School Program which provides for designated walking routes, and school age pedestrian education / encouragement outreach efforts.	Transportat d
5-20	Work with school districts and private schools to identify suggested school routes and drop-off/pick-up plans for cars and buses.	This is an on-going program. The city has a robust Safe Routes to School Program which provides for designated walking routes, and school age pedestrian education / encouragement outreach efforts.	Transportation
5-21	Work with school districts and private schools to develop and promote traffic safety education programs.	This is an on-going program. The city has a robust Safe Routes to School Program which provides for designated walking routes, and school age pedestrian education / encouragement outreach efforts.	Transportation
The City Structure Safety Element Goals, Objectives, Policies, and Programs			
9.6 Safety Element Goals, Objectives, Policies, and Programs			
9.6.1 Safety Element Goals			
Goal 6.1	To achieve acceptable levels of protection from natural and man-made hazards to life, health, and property	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services. 3. The City's fire prevention and building safety divisions adopt and enforce the latest codes pertaining to structural, building construction and fire safety in the built environment.	Fire / Police / Building / Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

Goal 6.2	To have emergency services which are adequate to meet minor emergency and major catastrophic situations.	1.The City contracts with Cal-Fire for fire protection and emergency services. The city has seven fire stations and access to a full complement of emergency services to respond to fires, medical emergencies, extrications, urban search and rescue, wild land fires, and swift water rescues. 2.Building and Safety Inspectors are trained through Cal OES and certified for the State of California in the Safety Assessment Program, for emergency assessment of all buildings and properties. 3. PD: The police department is almost fully staffed, and fully prepared to provide adequate services to meet emergency and catastrophic incident needs.	Fire / Police / B
9.6.2 Safety Element Objectives and Goals			
Objective 6.1			
	Minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage due to seismic ground shaking and secondary effects.	All residential and commercial buildings and structures are built to the current 2016 California Building Codes part 1 &2, volume 1&2 for all seismic events.	Fire / Police / Building / Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6.1.1	Reduce fault rupture and liquefaction hazards through the identification and recognition of potentially hazardous conditions and areas as they relate to the San Jacinto fault zone and the high and very high liquefaction hazard zones. During the review of future development projects, the City shall require geologic studies and mitigation for fault rupture hazards in accordance with the Alquist-Priolo Special Study Zones Act. Additionally, future geotechnical studies shall contain calculations for seismic settlement on all alluvial sites identified as having high or very high liquefaction potential. Should the calculations show a potential for liquefaction, appropriate mitigation shall be identified and implemented.	All residential and commercial buildings and structures are built to the current 2016 California Building Codes part 1 &2, volume 1&2 for all seismic events .	Building
6.1.2	Require all new developments, existing critical and essential facilities and structures to comply with the most recent Uniform Building Code seismic design standards.	All residential and commercial buildings and structures are built to the current 2016 California Building Codes part 1 &2, volume 1&2 for all seismic events . The City's building safety division adopts and enforces the latest California Building Code pertaining to structural and seismic safety in the built environment. This is an ongoing goal. See MVMC 8.20.	Building
Objective 6.2	Minimize the potential for loss of life and protect residents, workers, and visitors to the City from physical injury and property damage, and to minimize nuisances due to flooding.	Currently being done consistent with Municipal Code Chapter 8.12 as well as Federal Emergency Management Agency (FEMA) requirements.	Land Development
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

6.2.1	Permit only that development in 100-year floodplain that represents an acceptable use of the land in relation to the hazards involved and the costs of providing flood control facilities. Locate critical facilities, such as hospitals, fire stations, police stations, public administration buildings, and schools outside of flood hazard areas.	This item is currently applied consistently with Municipal Code Chapter 8.12 as well as Federal Emergency Management Agency (FEMA) requirements.	Land Develop d
6.2.2	Storm drains and catch basins owned and operated by the City shall be inspected, cleaned and maintained pursuant to an approved clean out schedule.	M&O maintains storm drains compliant with NPDES requirements consistent with Muni Code Chapter 8.10.	Land Development/M&O
6.2.3	Maximize pervious areas in order to reduce increases in downstream runoff resulting from new development.	This is accomplished through the review/implementation of WQMPs and site design features consistent with Municipal Code Chapters 9.16, 9.17, et al.	Land Development /Planni
6.2.4	Design, construct and maintain street and storm drain flood control systems to accommodate 10 year and 100 year storm flows respectively.	This is completed in conjunction with Riverside County Flood Control and Water Conservation District's (RCFC&WCD) cooperation and funding. It is implemented in accordance with RCFC&WCD's annual Zone budget effort.	Land Development/M&O Capital Projects
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6.2.5	The storm drain system shall conform to Riverside County Flood Control and Water Conservation District master drainage plans and the requirements of the Federal Emergency Management Agency.	This is completed in conjunction with Riverside County Flood Control and Water Conservation District's (RCFC&WCD) cooperation and funding. It is implemented in accordance with RCFC&WCD's annual Zone budget effort.	Land Developmer Projects
Objective 6.3	Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.	Chapter 9.10, Section 9.10.140 "Noise and Sound" of the Municipal Code provides standards for commercial and industrial uses. Additionally, Title 11, Chapter 11.80 "Noise Regulation" provides requirements for construction noise and times construction and grading can occur. This is an ongoing objective for all development.	Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

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6.3.1	The following uses shall require mitigation to reduce noise exposure where current or future exterior noise levels exceed 20 CNEL above the desired interior noise level: a. Single and multiple family residential buildings shall achieve an interior noise level of 45 CNEL or less. Such buildings shall include sound-insulating windows, walls, roofs and ventilation systems. Sound barriers shall also be installed (e.g. masonry walls or walls with berms) between single-family residences and major roadways. b. New libraries, hospitals and extended medical care facilities, places of worship and office uses shall be insulated to achieve interior noise levels of 50 CNEL or less. c. New schools shall be insulated to achieve interior noise levels of 45 CNEL or less.	Chapter 9.10, Section 9.10.140 "Noise and Sound" of the Municipal Code provides standards for commercial and industrial uses. Additionally, Title 11, Chapter 11.80 "Noise Regulation" provides regulations for construction noise and times construction and grading can occur. If CNEL levels are not met with the uses listed in this policy, mitigation measures for items such as installation shall be provided through the Noise Study and/or environmental document. This is an ongoing	Planning
6.3.2	Discourage residential uses where current or projected exterior noise due to aircraft over flights will exceed 65 CNEL.	Title 11, Chapter 11.80 "Noise Regulation" provides requirements for residential uses noise and Section 9.07.060 of the Municipal Code provides standards consistent with the Air Installation Compatibility Zone (ACUZ) Use Overlay District. Land use and building restrictions are provided when exceeding noise levels or if development/use is not in compliance with ACUZ standards. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6.3.3	Where the future noise environment is likely to exceed 70 CNEL due to overflights from the joint-use airport at March, new buildings containing uses that are not addressed under Policy 6.3.1 shall require insulation to achieve interior noise levels recommended in the March Air Reserve Base Air Installation Compatible Use Zone Report.	Section 9.07.060, referring to the Air Installation Compatibility Zone (ACUZ) Use Overlay District, provides land use and building restrictions when exceeding noise levels or not in compliance with ACUZ standards. This is an ongoing policy.	Planning
6.3.4	Encourage residential development heavily impacted by aircraft over flight noise, to transition to uses that are more noise compatible.	Section 9.07.060 as well as ACUZ and/or standards required by the Airport Land Use Commission encourage non-compatible land uses to transition to more compatible uses.	Planning
6.3.5	Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.	Title 24 noise insulation standards for both new multi-family housing developments and hotels/motels are continually enforced through the California Administrative Code. This is an ongoing policy.	Planning
6.3.6	Building shall be limited in areas of sensitive receptors.	Section 9.07.060 as well as ACUZ and/or Airport Land Use Commission regulations restricts or limits building within areas of sensitive receptors.	Planning
Objective 6.4	Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.	Potential Noise issues to surrounding land uses are reviewed through the project design review stage at the Project Review Staff Committee and through the California Environmental Quality Act (CEQA) standards. Mitigation measures for noise shall be provided in environmental documents to limit noise impacts. This is an ongoing City objective.	Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6.4.1	Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.	Specific design features are incorporated into projects during design review to minimize noise impacts. This could include site design features such as the placement of loading areas away from residential sensitive receptors, dense landscape and decorative walls. This is an ongoing policy.	Planning
Objective 6.5	Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.	Chapter 9.10, Section 9.10.120 "Performance Standards" of the Municipal Code requires all mechanical and electrical equipment associated with such items as vehicles, land use or construction etc. to screen and minimize potential noise in a manner that it does not disturb adjacent uses and activities. (Ongoing)	Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6.5.1	New commercial and industrial activities (including the placement of mechanical equipment) shall be evaluated and designed to mitigate noise impacts on adjacent uses	Chapter 9.16 "Design Guidelines", Sections 9.16.150 and 9.16.160 and Chapter 9.08, Section 9.08.150 of the Municipal Code provides general screening and buffer requirements for non-residential properties to other sensitive properties. This would include such items as trash areas, loading areas, ground-mounted equipment, roof mounted equipment etc. Chapter 9.10, Section 9.10.120 "performance Standards" of the Municipal Code requires all mechanical and electrical equipment associated with such items as vehicles, land use or construction etc. to screen and minimize potential noise in a manner that it does not disturb adjacent uses and activities. This is an ongoing policy.	Planning
6.5.2	Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.	Chapter 9.10, Section 9.10.140 "Noise and Sound" of the Municipal Code provides standards for commercial and industrial uses. Additionally, Title 11, Chapter 11.80 "Noise Regulation" provides regulations for construction noise and times construction and grading can occur. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 6.6	Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.	The General Plan Land Use Map and the City's zoning map have provided land uses and patterns that reduce vehicle trips and distances for essential services. This is an ongoing objective.	Planning
Policies:			

6.6.1	Provide sites for new neighborhood commercial facilities within close proximity to the residential areas they serve.	The General Plan Land Use Map and the City's zoning map have provided land use designations and patterns that provide opportunities for residential areas to easily access neighborhood commercial areas (Ongoing)	Planning
6.6.2	Provide multi-family residential development sites in close proximity to neighborhood commercial centers in order to encourage pedestrian instead of vehicular travel.	Zoning Maps provided in the Municipal Code are consistent with the General Plan land use maps and have provided multiple-family zoning near or adjacent to where neighborhood commercial zoned property is located. This is an ongoing policy.	Planning
6.6.3	Locate neighborhood parks in close proximity to the appropriate concentration of residents in order to encourage pedestrian and bicycle travel to local recreation areas.	Moreno Valley strives to locate neighborhood parks in close proximity to the development the park will serve. Examples of these are: Victoriano Park/School, El Potrero Park/School, Morrison Park, Westbluff Park, and Ridgecrest Park. Pedestrian and bicycle travel to the parks are encourage, as well as shopping areas around parks. On-going	Parks
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 6.7	Reduce mobile and stationary source air pollutant emissions.	Mobile and stationary source air pollution emissions are reviewed for most projects. For larger industrial projects, it is a primary objective to reduce air pollution sources. Air Quality is reviewed through the California Environmental Quality Act Guidelines and mitigation measures to reduce source are pollution emissions are a frequent occurrence. This is an ongoing City objective	Planning
Policies:			

6.7.1	Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.	The City complies with standards within the California Air Resources Board (CARB) South Coast Air Quality Management District SCAQMD) requirements and rules (i.e. Rule 403) regarding emissions and air quality strategies. Checks and balances are reviewed thoroughly in the appropriate project environmental document. This is an ongoing policy.	Planning
6.7.2	Encourage the financing and construction of park-and- ride facilities.	This is an on-going policy. The City works closely with Caltrans and RCTC in the development of Park and Ride Facilities.	Transportation
6.7.3	Encourage express transit service from Moreno Valley to the greater metropolitan areas of Riverside, San Bernardino, Orange and Los Angeles Counties.	This is an on-going policy. The City works closely with Riverside Transit Agency (RTA) in the implementation of recommended improvements developed in the RTA Comprehensive Operational Analysis (COA).	Transportation
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.7.4	Locate heavy industrial and extraction facilities away from residential areas and sensitive receptors.	Chapter 9.05 provides Good Neighbor standards for the location of industrial uses relative to residential uses.	Planning

6.7.5	Require grading activities to comply with South Coast Air Quality Management District's Rule 403 regarding the control of fugitive dust.	All grading activities comply with the South Coast Air Quality Management Districts Rule 403. Conditions of approval on projects confirm control of fugitive dust by such measures as continual watering of the site and restriction of grading during higher wind events. This is an ongoing policy.	Planning
6.7.6	Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.	All residential and commercial buildings and structures are built to the current 2016 California Energy and Green Codes for all new and remodeled and tenant improvement project.	Building
Objective 6.8	As feasible given budget constraints, strive to maintain a police force with a ratio of one sworn officer for each 1,000 residents.	The county continues to fill open positions and the new contract allows for two additional sworn officers.	Police
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.8.1	Explore the most effective and economical means of providing responsive and adequate law enforcement protection in the future.	Senior leadership continues to work toward improving community policing programs, reducing crime, improving service and reducing costs.	Police

Objective 6.9	Reduce the risk and fear of crime through physical planning strategies that maximize surveillance opportunities and minimize opportunities for crime found in the present and future built environment, and by creating and maintaining a high level of community awareness and support of crime prevention.	Police Senior leadership continues to work toward improving community policing programs, reducing crime, improving service delivery, and improving the perception of safety in the city. New patrol tactics, team deployments, social media platforms, and crime analysis strategies are being used to maximize our efforts.	Police
Policies:			
6.9.1	Promote the establishment of neighborhood and business watch programs to encourage community participation in the patrol of neighborhood areas, and increased awareness of any suspicious activity.	Our Community Services Unit and Problem Oriented Policing Teams continues to work with neighborhood watch programs, businesses, and apartment managers to encourage community participation in the patrol of neighborhood areas, and increased awareness of any suspicious activity. A social media component is in the works to assist with these programs as well.	Police
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.9.2	Require well-lighted entrances, walkways and parking lots, street lighting in all commercial, industrial areas and multiple-family residential areas to facilitate nighttime surveillance and discourage crime.	Crime Prevention through Environmental Design (CPTED) Concepts are provided to businesses and homeowners via an inspection process handled by the Department's Community Services Unit.	Police

6.9.3	Incorporate "defensible space" concepts into the design of dwellings and nonresidential structures, including, but not limited to configuration of lots, buildings, fences, walls and other features that facilitate surveillance and reinforce a sense of territorial control.	Crime Prevention through Environmental Design (CPTED) Concepts are provided to businesses and homeowners via an inspection process handled by the Department's Community Services Unit.	Police / Planning
Objective 6.10	Protect life and property from the potential short- term and long-term deleterious effects of the necessary transportation, use, storage treatment and disposal and hazardous materials and waste within the City of Moreno Valley.	The Fire Prevention Division strives to inspect business occupancies who store, handle, use hazardous materials on an annual basis. The latest California Fire Code regulations pertaining to hazardous materials processes are enforced.	Fire
Policies:			
6.10.1	Require all land use applications and approvals to be consistent with the siting criteria and other applicable provisions of the adopted Hazardous Waste Management Plan, which is also incorporated into and as part of the General Plan.	The Hazardous Waste Management Plan.	Waste Coordinator
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.10.2	Manage the generation, collection, storage, processing, treatment, transport and disposal of hazardous waste in accordance with provisions of the City of Moreno Valley's adopted Hazardous Waste Management Plan, which is also incorporated into and as part of the General Plan.	The Hazardous Waste Management Plan. Host hazardous waste collection events; educate residents how to properly handle and dispose of hazardous waste; support Riverside County's efforts to provide residents and businesses with opportunities to dispose of hazardous waste properly. Work with Federal, State and County agencies to identify and regulate the use and disposal of toxic waste.	Waste Coordinator

Objective 6.11	Maintain an integrated emergency management program that is properly staffed, trained, and equipped for receiving emergency calls, providing initial response, providing for key support to major incidents.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services.	Fire
Policies:			
6.11.1	Respond to any disaster situation in the City to provide necessary initial response and providing for key support to major incidents.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services.	Emergency Operations / Fi
6.11.2	Provide emergency first aid treatment when necessary.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services. age 94 of 127	Emergency Operations / Fi
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.11.3	Support the maintenance of a trauma center within the City.	The City contracts with Cal-Fire for fire protection and emergency services.	Emergency Operations / Fi
6.11.4	Aggressively attack uncontrolled fires and hold losses to a minimum.	The City contracts with Cal-Fire for fire protection and emergency services.	Fire
6.11.5	Minimize uncontrolled fires through support of weed abatement programs.	The Fire Prevention Division has a pro-active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners.	Fire
Objective 6.12			

	Coordinate with Federal, State and County agencies and neighboring communities in developing a regional system to respond to emergencies and major catastrophes.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services.	Emergency Operat
Policies:			
6.12.1	Support mutual aid agreements and communication links with the County of Riverside and other local participating jurisdictions.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services.	Emergency Operations / Fi
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 6.13	Maintain fire prevention, fire-related law enforcement, and public education and information programs to prevent fires.	The Fire Prevention division conducts inspections on multi-family dwellings, schools, hospitals, and business occupancies and provides education to residents and business owners regarding fire code violations and other potential safety problems.	Emergency Operations / Fi
Policies:			
6.13.1	Provide fire safety education to residents of appropriate age.	The Fire Prevention division conducts inspections on multi-family dwellings, schools, hospitals, and business occupancies and provides education to residents and business owners regarding fire code violations and other potential safety problems. The fire department participates in a number of public events throughout the year providing public education to our residents.	Fire

Objective 6.14	Maintain the capacity to respond rapidly to emergency situations.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS. 2. The City contracts with Cal-Fire for fire protection and emergency services.	Fire
Policies:			
6.14.1	Locate fire stations in accordance with the Fire Station Master Plan as shown in Figure 6-1. The exact location of each fire station may be modified based on availability of land and other factors.	Since the general plan was written, Station 58 was added off Moreno Beach and Auto Mall Dr. and Station 99 was added at Morrison and Cottonwood.	Fire
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.14.2	Relate the timing of fire station construction to the rise of service demand in surrounding areas.	1. Demand for service is continually monitored by Cal-Fire and recommendations are brought to the city.	Fire
Objective 6.15	Ensure that property in or adjacent to wildland areas is reasonably protected from wildland fire hazard, consistent with the maintenance of a viable natural ecology.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
Policies:			

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6.15.1	Encourage programs to minimize the fire hazard, including but not limited to the prevention of fuel build-up where wildland areas are adjacent to urban development.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.15.2	Tailor fire prevention measures implemented in wildland areas to both the aesthetic and functional needs of the natural environment.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
Objective 6.16	Ensure that uses within urbanized areas are planned and designed consistent with accepted safety.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
Policies:			

6.16.1	Ensure that ordinances, resolutions and policies relating to urban development are consistent with the requirements of acceptable fire safety, including requirements for smoke detectors, emergency water supply and automatic fire sprinkler systems.	1. The Fire Prevention division enforces the latest state adopted California Fire Code to ensure appropriate fire protection systems are installed. 2. Annual inspections are conducted as resources permit to ensure fire protection systems are properly maintained.	Fire
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6.16.2	Encourage the systematic mitigation of existing fire hazards related to land urban development or patterns of urban development as they are identified and as resources permit.	The Fire Prevention division conducts annual inspections as resources permit to ensure fire protection systems are properly maintained, egress and ingress are provided for, and that other hazards are mitigated as required.	Fire
6.16.3	Ensure that adequate emergency ingress and egress is provided for each development.	1. The Fire Prevention division reviews all new developments for sufficient ingress, egress, and water supply. 2. The Fire Prevention division conducts annual inspections as resources permit to ensure fire protection systems are properly maintained, egress and ingress are provided for, and that other hazards are mitigated as required.	Fire
6.16.4	Within the safety zones (e.g. Air Crash Hazard Zones and Clear Zones) shown in Figure 6-5, residential uses shall not be permitted, and business uses shall be restricted to low intensity uses as defined in the March Air Reserve Base Air Installation Compatible Use Zone Report, as amended from time to time.	Residential uses are generally not permitted and businesses shall be restricted to low intensity uses within air crash hazard and clear zones. This use is monitored and regulated by March Air Reserve Base Air Installation Compatible Use Zones and the Airport Land Use Commission (ALUC), This is an ongoing policy.	Planning

Objective 6.17	Provide non-emergency public services provided that such demands do not interfere with fire protection and other emergency services.	1. The City of Moreno Valley has a robust, pro- active emergency management program that incorporates all elements of NIMS.	Fire **d**
9.6.3 Safety Element Programs			
Programs:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
6-1	Request that public utility companies inspect their facilities and distribution networks to determine the potential impact of earthquake damage.	MVU routinely inspects all facilities and performs any necessary repairs. The City of Moreno Valley has a robust, pro-active emergency management program that works closely with local hospitals, utilities and other critical infrastructure.	Fire/MVU
6-2	Evaluate historic buildings relative to the need for mitigation of geologic hazards, while weighing their historical value against the potential hazard of their collapse.	All residential and commercial buildings and structures are built to the current 2016 California Building Codes for all renovations to historic buildings	Building
6-3	Reevaluate designated truck routes in terms of noise impact on existing land uses to determine if those established routes and the hours of their use should be adjusted to minimize exposure to truck noise.	This is an on-going program. It is accomplished through provisions of Title 12 of the Municipal Code. A comprehensive review of the designated truck routes will be performed with the General Plan update.	Transportation
6-4	Review existing ordinances to ensure that building and site design standards specifically address crime prevention utilizing defensible space criteria. Incorporate security standards into the Municipal Code.	This item will be reviewed in conjunction with upcoming Zoning Code updates.	Police/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

6-5	Seek state and federal grants to offset any required additions in law enforcement staffing and/or equipment.	Senior police leadership is constantly on the lookout out for grant opportunities. Similarly, the Riverside County Sheriff's Department assists in this effort by applying for grants on the police department's behalf. All grant awards are sent to the city for approval before acceptance. The police department is currently utilizing several grants to fund equipment purchases and staff positions.	Police
6-6	Update the Fire Protection Master Plan as conditions warrant.	1. Demand for service is continually monitored by Cal-Fire and recommendations are brought to the city.	Fire
6-7	Establish regulations for development along the urban- wildland interface.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
6-8	Establish criteria for the design, maintenance, modification and replacement of fire facilities.	1. Demand for service is continually monitored by Cal-Fire and recommendations are brought to the city.	Fire
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

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6-9	Establish criteria for weed abatement programs.	1. The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners. 2. During development, the Fire Prevention division ensures that all Wildland Urban Interface developments meet the construction requirements of the California Fire and Building Codes.	Fire
The City Structure Conservation Element Goals, Objectives, Policies, and Programs			
9.7 Conservation Element Goals, Objectives, Policies, and Programs			
9.7.1 Conservation Element Goals			
Goal 7.1	To achieve the wise use of natural resources within the City of Moreno Valley, its sphere of influence and planning area.	The City continues to adhere to Goal 7.1, which includes conservation of natural resources within the city limits and is sphere of influence.	Planning
9.7.2 Conservation Element Objectives and Goals			
Objective 7.1	Minimize erosion problems resulting from development activities.	Accomplished through grading and erosion control plans consistent with Municipal Code Chapter 8.21.	Land Development
Policies:			
7.1.1	Require that grading plans include appropriate and feasible measures to minimize erosion, sedimentation, wind erosion and fugitive dust.	Grading plans are reviewed for these aspects consistent with Municipal Code Chapter 8.21.	Land Development
7.1.2	Circulation patterns within newly developing portions of Moreno Valley, particularly in hillside areas, should follow natural contours to minimize grading.	Circulation patterns are accomplished through review of site plans and tract maps consistent with Municipal Code Chapters 8.21 and 9.16	Land Development
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

Objective 7.2	Maintain surface water quality and the supply and quality of groundwater.	Surface water quality is achieved through the review and implementation of WQMPs consistent with Municipal Code Chapter 8.10.	Land Develop d
Policies:			
7.2.1	New development may use individual wells only where an adequate supply of good quality groundwater is available.	Well installation is governed by Riverside County Department of Environmental Health.	Land Development
7.2.2	The City shall comply with the provisions of its permit(s) issued by the Regional Water Quality Control Board for the protection of water quality pursuant to the National Pollutant Discharge Elimination System.	This is an on-going policy, consistent with Municipal Code Chapter 8.10.	Land Development
7.2.3	In concert with the water purveyor identify aquifer recharge areas and establish regulations to protect recharge areas and regulate new individual wells.	Wells are governed by Riverside County Department of Environmental Health. This policy will be reviewed with the comprehensive General Plan Update.	Land Development
Objective 7.3	Minimize the consumption of water through a combination of water conservation and reuse.	This policy will be reviewed with the next comprehensive General Plan update and include steps the City of Moreno Valley will take to reduce water use.	Land Development/ Special Districts/ Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7.3.1	Require water conserving landscape and irrigation systems through development review. Minimize the use of lawn within private developments, and within parkway areas. The use of mulch and native and drought tolerant landscaping shall be encouraged.	The City's Water Conservation Landscape Ordinance as approved in 2009 requires water conservation landscape and irrigation systems in all development review. City uses Public Works Department Landscape Design Guidelines, Planning Division Landscape Standards and Municipal Code Chapter 17, Title 9 when reviewing and approving landscape plans for public landscape. In 2016, non-functional turf (irrigated with potable water) was removed in all publically maintained medians and parkway and replaced with drought tolerant landscaping and water efficient irrigation. This is an ongoing policy.	Planning
7.3.2	Encourage the use of reclaimed wastewater, stored rainwater, or other legally acceptable non-potable water supply for irrigation.	Land Development contributes to reuse through review/implementation of WQMPs consistent with Municipal Code Chapter 8.10.	Land Development/Planni
Objective 7.4	Maintain, protect, and preserve biologically significant habitats where practical, including the San Jacinto Wildlife Area, riparian areas, habitats of rare and endangered species, and other areas of natural significance.	The Planning Division, through the provisions of the Western Riverside County Multi- species Habitat Conservation Plan. assures that biologically significant habitats are protected and preserved during site design review at the Project Review Staff Committee. This is an ongoing objective.	Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7.4.1	Require all development, including roads, proposed adjacent to riparian and other biologically sensitive habitats to provide adequate buffers to mitigate impacts to such areas.	Development or public rights of way proposed adjacent to significant habitats are protected and preserved during site design review and review at the Project Review Staff Committee. This is an ongoing policy.	Planning
7.4.2	Limit the removal of natural vegetation in hillside areas when retaining natural habitat does not pose threats to public safety.	The Fire Prevention Division has a pro- active hazard abatement program in which all vacant parcels are inspected on an annual basis to ensure proper maintenance is being conducted by property owners.	Fire
7.4.3	Preserve natural drainage courses in their natural state and the natural hydrology, unless the protection of life and property necessitate improvement as concrete channels.	Accomplished through site design consistent with Municipal Code Chapters 8.12, 8.21, and 9.16.	Planning / Land Developme
7.4.4	Incorporate significant rock formations into the design of hillside developments.	Natural rock formations are incorporated into design of hillside residential developments through Municipal Code standards included in Section 9.03.040 "Residential Site Development Standards" and Section 9.16.190 "Natural Open Space Standards". Section 9.03.060 "Planned Unit Developments" also incorporates the conservation of Cultural and Natural Resources. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7.4.5	The City shall fulfill its obligations set forth within any agreement(s) and permit(s) that the City may enter into for the purpose of implementing the Western Riverside County Multi-species Habitat Conservation Plan.	This goal is satisfied through the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP) approved on June 17, 2003, The MSHCP Plan was incorporated by the City of Moreno Valley and the City fulfills its obligations for implementing the Plan regarding agreements, permits, review of cell groups etc. This is an ongoing policy.	Planning
Objective 7.5	Encourage efficient use of energy resources.	The City's adopted Climate Action Strategy provides strategies for efficient use of energy resources citywide. MVU regularly forecasts demand for energy and procures enough energy to meet demand. A portion of the energy is from renewable resources, such as wind and solar. This is an ongoing objective. **Energy efficiency - for calendar year 2020:** **Number of residential energy audits: 230** **Total annual kWh savings (residential and commercial customers) : 2,131,005** **Target annual kWh savings: 1,326,027**	Planning/MVU
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			
7.5.1	Encourage building, site design, and landscaping techniques that provide passive heating and cooling to reduce energy demand.	Building, site design and landscaping techniques that provide passive heating and cooling as well as energy reduction are achieved by following the current 2016 California Energy and Green Code for reference. MVU has established Energy Efficiency Programs for residential and commercial customers that provide rebates and incentives for the installation of energy saving projects, including window film and cool roof applications.	Building/Planning /MVU

7.5.2	Encourage energy efficient modes of transportation and fixed facilities, including transit, bicycle, equestrian, and pedestrian transportation. Emphasize fuel efficiency in the acquisition and use of City-owned vehicles.	This is an on-going policy. It is accomplished through implementation of the Bicycle Master Plan, continued development of the Safe Routes to School program, and support of the recommendations within Riverside Transit Agency's (RTA) Comprehensive Operational Analysis. Also Public Works uses fuel efficiency as a major factor in the acquisition of City vehicles. Additionally, the Transportation Electrification Roadmap was completed in early 2020 by MVU. This Roadmap process had two distinct deliverables: (1) provide a needs assessment and identification of strategies for the utility related to transportation electrification; and (2) define actionable steps to achieve the goals identified in the strategies over the next 5 years. Construction began in late 2020 that will result in the installation of 3 electric vehicle charging stations - two Level 2 chargers and one fast charger. When completed, these EV chargers will be the third set of EV charging stations owned and operated by the City's electric utility.	d Transportation/ Moreno Valley Utility (MVU)
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
7.5.3	Locate areas planned for commercial, industrial and multiple family density residential development within areas of high transit potential and access.	The General Plan Land Use Map and the City's zoning map have provided land use designations and patterns that provide opportunities for commercial, industrial and multiple-family residential development to locate within areas of high transit potential and access. New plans such as the Nason Corridor and Alessandro Corridor have provided additional opportunities for development near transit corridors. This is an ongoing policy.	Planning

7.5.4	Encourage efficient energy usage in all city public buildings.	Efficient energy usage in all city public buildings is achieved by following the current 2016 California Energy and Green Code for reference. The lighting at the City's Senior Center was retrofitted with LED fixtures in 2020. This improvement aligns with the goal to encourage efficient energy use in all city public buildings, and builds upon the retrofit completed at City Hall in 2019. In addition, the City converted all street lights to LED technology (2019). This is an ongoing objective of the City.	d Moreno Valley Utility (MVU)/ Building
7.5.5	Encourage the use of solar power and other renewable energy systems.	The use of solar power and other renewable energy systems is achieved by following the current 2016 California Energy and Green Code and by goals included in the City's Climate Action Plan. The City owns and operates a 500kW solar carport system that generated 867,940 kWh in 2020. Construction of an additional 50kW solar carport system began in late 2020. MVU has a solar program for residential and commercial customers. As of December 2020, MVU customers have installed over 10 MW of solar.	Moreno Valley Utility (MVU Building
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 7.6	Identify and preserve Moreno Valley's unique historical and archaeological resources for future generations.	The City has identified historical and archeological resources for preservation purposes. This includes review of historic resources through project review under the California Environmental Quality Act (CEQA) and archeological resources through Native American Tribal entity review and general Archeological Studies through CEQA review. This is an ongoing objective of the City.	Planning / Building
Policies:			
7.6.1	Historical, cultural and archaeological resources shall be located and preserved, or mitigated consistent with their intrinsic value.	Through environmental review and required technical studies, project conditions of approval and coordination with Native American Tribes,, mitigation measures are provided to conserve cultural resources that are uncovered during excavation and construction act ivies This is an ongoing policy.	Planning

7.6.2	Implement appropriate mitigation measures to conserve cultural resources that are uncovered during excavation and construction activities.	Through environmental review and required technical studies, project conditions of approval and coordination with Native American Tribes, mitigation measures are provided to conserve cultural resources that are uncovered during excavation and construction activities This is an ongoing policy.	Planning
7.6.3	Minimize damage to the integrity of historic structures when they are altered.	Altered structures are reviewed internally with Building and Planning staff. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
7.6.4	Encourage restoration and adaptive reuse of historical buildings worthy of preservation.	Restoration and adaptive reuse to preserve historical buildings are reviewed internally with Building and Planning staff. This is an ongoing policy.	Planning
7.6.5	Encourage documentation of historic buildings when such buildings must be demolished.	When historic buildings must be demolished, documentation would occur through the Building and Safety Division's building permit process.	Planning/Building & Safety

Objective 7.7	Where practical, preserve significant visual features significant views and vistas.	Review of development projects through Project Staff Review strive to preserve visual features, significant views and vistas. The item is further reviewed through Appendix G, "Aesthetics" and "Cultural Resources" of the California Environmental Quality Act (CEQA Guidelines. This is an ongoing objective.	Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
7.7.1	Discourage development directly upon a prominent ridgeline.	Section 9.03.040 B "Residential Site Development Standards" of the Municipal Code establishes standards for hillside residential development consistent with the goals, objectives and policies of the General Plan. Allowable development would preserve natural hillsides and ridgelines. **Goals, objectives and policies of hillside residential development will be further evaluated with the next comprehensive General Plan update**.	Planning
7.7.2	Require new electrical and communication lines to be placed underground.	This item is accomplished through site design consistent with Municipal Code Section 9.14.130.	Land Development
7.7.3	Implement reasonable controls on the size, number and design of signs to minimize degradation of visual quality.	Sign regulations included in Chapter 9.12 "Sign Regulations" provides controls on size, number and design of signs. Sign programs for larger commercial and industrial sites also provide regulations that are consistent with the Municipal Code and General Plan policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7.7.4	Gilman Springs Road, Moreno Beach Drive, and State Route 60 shall be designated as local scenic roads.	Caltrans manages the Scenic Highway Program in accordance with State Scenic Highway Guidelines and Sections 260 through 263 of the Streets and Highways Code. A county highway component was added to the Program in Section 154 of the Streets and Highways Code. Key criteria include memorable landscape, minimal intrusions, local support, and length not less than 1 mile.	Transportation/P
7.7.5	Require development along scenic roadways to be visually attractive and to allow for scenic views of the surrounding mountains and Mystic Lake.	Development along scenic roadways and the allowance for scenic views of the surrounding mountains are achieved through environmental review and Appendix N "Aesthetics" of the California Environmental Quality Act Guidelines.	Building/Planning
7.7.6	Minimize the visibility of wireless communication facilities by the public. Encourage "stealth" designs and encourage new antennas to be located on existing poles, buildings and other structures.	Chapter 9.09, Section 9.09.040 "Communication facilities, antennas and satellite dishes includes standards to minimize the visibility of wireless communications and encourages stealth designs. Co-location of facilities are encouraged. This is an ongoing policy.	Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Objective 7.8	Maintain an adequate system of solid waste collection and disposal to meet existing and future needs.	Franchise agreements are in place, continued update/amendments as existing and future needs change and or emerge.	Waste Coordinator
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

7.8.1	Encourage recycling projects by individuals, non-profit organizations, or corporations and local businesses, as well as programs sponsored through government agencies.	The City of Moreno Valley actively encourages recycling projects and promotes participation in Keep Moreno Valley Clean and Beautiful (KMVCB); and educates groups regarding recyclable materials guidelines and goals. The City is involved in extensive outreach and education activities with respect to the three R's: reduce, reuse, recycle.	Waste Coordi

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9.7.3 Conservation Element Programs			
Programs:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7-1	Support regional solid waste disposal efforts by the County of Riverside.	**Capital Projects:** The City offers a number of waste reduction, recycling and community clean-up programs. There is a franchise agreement in place with a major solid waste/recycling (AB 939) hauler, for residential (curbside) and commercial (AB 341) materials, that has resulted in the attainment of significant diversion. The City in partnership with Riverside County hosts biannual hazardous and electronic waste collections and community outreach events. The City is implementing AB 1826, requiring businesses to recycle their organic waste. The City has implemented a used motor oil and filters recycling public education program, and promotes Riverside County's free Backyard Composting Workshops, where residents can learn to properly compost green waste.	Waste Coordinator/M&O/Capital Projects
7-2	Advocate for natural drainage channels to the Riverside County Flood Control District, in order to assure the maximum recovery of local water, and to protect riparian habitats and wildlife.	This item is accomplished through site design and coordination with Flood Control consistent with Municipal Code Chapter 8.12.	Land Development /Capita Projects
7-3	Maintain a close working relationship with EMWD to ensure that EMWD plans for and is aware of opportunities to use reclaimed water in the City.	A close working relationship is maintained with EMWD on all projects to review reclaimed water opportunities in the City	Land Development/Specia Districts
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

7-4	Provide guidelines for preferred planting schemes and specific species to encourage aesthetically pleasing landscape statements that minimize water use.	Current Landscape Development Guidelines and Specifications in the Municipal Code provide preferred planting schemes and aesthetically pleasing landscape statements that minimize water use and require drought tolerant species. This is an ongoing policy.	Planning
7-5	Develop incentives where appropriate, for the maintenance and sensitive rehabilitation of historic structures and properties.	Although historic structures and properties are reviewed and conserved, specific incentives have not been developed for maintenance and sensitive rehabilitation of historic structures. This item shall be further reviewed and evaluated in the next comprehensive General Plan update.	Planning
7-6	In areas where archaeological or paleontological resources are known or reasonably expected to exist, based upon the citywide survey conducted by the UCR Archaeological Research Unit, incorporate the recommendations and determinations of that report to reduce potential impacts to levels of insignificance.	Archeological and paleontological resources are reviewed through face to face meetings with Native American Tribes and review of studies that determine where resources lie. One such vehicle to review resources is the studies and reports provided by the UCR Archaeological Research Unit. The City incorporates the recommendations and determinations of these reports into the review of proposed development projects to reduce any noted impacts to levels of insignificance. This is an ongoing policy.	Planning
The City Structure Housing Element Goals, Objectives, Policies, and Programs			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
9.8 Housing Element Goals, Objectives, Policies, and Programs			
9.8.1 Housing Element Goals			

Goal 8.1	Improve and maintain decent, sanitary and affordable housing.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to monitor previously funded affordable units.	Housing/Plan
Goal 8.2	Improve and maintain decent, sanitary and affordable housing for very-low income households and seniors.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to monitor previously funded affordable units.	Housing/Planning
Goal 8.3	Reduce substandard housing and health and safety violations.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to monitor previously funded affordable units.	Housing/Planning
Goal 8.4	Assist in the revitalization of older neighborhoods.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Planning
Goal 8.5	Improve and maintain decent and affordable rental housing.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to monitor previously funded affordable units.	Housing/Planning
Goal 8.6	Assist very low, low and moderate-income first time buyers to purchase homes.	**Housing:** Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

Goal 8.7	Add to the number of affordable rental units for very low and low-income households.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to seek new opportunities to develop new units.	Housing/Plan
Goal 8.8	Create affordable housing units for senior households.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to seek new opportunities to develop new units.	Housing/Planning
9.8.2 Housing Element Objectives and Policies			
Objective 8.1	Rehabilitate a minimum of fifteen single- family homes under the Home Improvement Loan Program (HILP).	The Home Improvement Loan Program is on hold pending identification of new funding source. The program was previously funded by Redevelopment Agency. The program has met its goal and is currently no longer active due to funding.	Housing/Planning
Objective 8.2	Rehabilitate a minimum of fifteen single-family homes under the Homeowner Assistance for Minor Rehabilitation loan program (HAMR).	The Homeowners Assistance for Minor Rehabilitation (HAMR) program is on hold pending identification of new funding source. The program was previously funded by the Redevelopment Agency. The program has met its goal and is currently no longer active due to funding.	Housing/Planning
Policies:			
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

8.2.1	Rehabilitate single-family homes to correct substandard conditions, improve handicap accessibility, and improve the aesthetics of older neighborhoods, thereby contributing to their preservation and revitalization.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority is continuing to seek new opportunities to contribute to preservation of units.	Housing/Plan
Objective 8.3	Rehabilitate a minimum of ninety mobile homes, for very low-income homeowners, in mobile home parks citywide, under the Mobile Home Grant Program.	Program is due to continue as the City converted to a contract program with Habitat for Humanity starting in FY 2013-14. - Housing may have additional information. Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Through the City's CDBG funds, there continues to be multiple units addressed each year.	Housing/Planning
Policies:			
8.3.1	Correct substandard conditions in mobile home parks.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Through the City's CDBG funds, there continues to be multiple units addressed each year.	Housing/Planning

Goal/Policy	Description	Discussion on Implementation Status	Responsible Party

Objective 8.4	Obtain code compliance from a minimum of twenty- five very low and moderate-income property owners, citywide, with emphasis on focus neighborhoods.	Administer a program to provide grant funds for neighborhood beautification in targeted neighborhoods. Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Code Compliance continues to seek compliance of the units.	Housing/Plan
Policies:			
8.4.1	Enforce correction by property owners of identified housing and code violations in rental properties occupied by very low to moderate-income households.	New program funds included in FY 2013-14 CDBG allocation will allow continuation of the program. Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Code Compliance continues to seek compliance of the units	Housing/Planning
Objective 8.5	Conduct five neighborhood clean-ups annually; provide related services to Community Development Block Grant (CDBG) areas in conjunction with other projects, and assist in clean-up of 360 housing units.	The program will continue with funds from future CDBG allocations.	Housing/Planning
Policies:			Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

8.5.1	Provide neighborhood improvement programs to CDBG target areas.	The program originally included both CDBG target areas and the Redevelopment Area. The program was revised after dissolution of the state's redevelopment agencies. Funding of the program in the CDBG target areas will continue in the 2014-2021 planning cycle. Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Plan
Objective 8.6	Assist 300 households citywide.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Planning
Policies:			
8.6.1	Provide fair housing and landlord/tenant education services to very low to moderate-income households.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. Through the City's CDBG funding, the City continues to fund Fair Housing services.	Housing/Planning
Objective 8.7	Rehabilitate affordable multi-family units, citywide, through utilization of the Rental Rehabilitation Program or Federal Grant Funds.	**4 Multiple-family units were rehabbed in 2020.**	Housing/Planning
Policies:			
8.7.1	To eliminate substandard housing conditions for low- income renters, while enhancing the appearance of multi-family developments.	The City is currently working on establishing funding sources for this item. Ongoing.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**

Objective 8.8	Assist households with down payment and closing costs.	- Provide funds for Homebuyer Assistance Program (HAP) silent seconds. Work with approved lenders. Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Plan
Policies:			
8.8.1	Provide assistance to facilitate homeownership for very low to moderate-income households.	Program will continue (need update from Housing) Housing: Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Planning
Objective 8.9	Create a minimum of 126 affordable rental units, citywide.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
Policies:			

8.9.1	Facilitate the creation of affordable rental units.	Program 8.13 was deleted after dissolution of the state's redevelopment agencies. The City will continue to look for new funding source and other programs to promote the development of affordable units for larger families. Housing: Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Plan
Objective 8.10	Create a minimum of seventy senior units.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available**.** The Housing Authority will continue to address new units as funding is available.	Housing/Planning
Policies:			
8.10.1	Create decent and affordable housing opportunities for low and very-low income seniors.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Planning
9.8.3 Housing Element Programs			
Programs:			
8-1	Utilize the Home Improvement Loan Program (HILP) that provides a 3% loan for up to $15,000 deferred for 20 years. Available citywide for very low to lower income homeowners.	The program has met its goal and is currently no longer active due to funding.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
8-2	Utilize the Homeowner Assistance for Minor Rehabilitation (HAMR) loan program that provides a 3% to 5% loan for up to $7,500 amortized over a 10- year term.	The program has met its goal and is currently no longer active due to funding.	Housing/Planning

8-3	Utilize the Mobile Home Grant Program that provides grants up to $10,000 for owner-occupants of mobile homes.	CDBG Funding is still being used for this purpose.	Housing/Plan
8-4	Provide enhanced code compliance services and referrals to City housing rehabilitation programs.	When Redevelopment was dissolved several years ago any referrals ceased at that point due to lack of funding availability	Housing/Planning
8-5	Utilize the City Neighborhood Clean-up Program to provide volunteers and equipment to neighborhoods for clean-up activities.	This program was administered by the Sustainability & intergovernmental Program Manager. The city has created an Annual Day of Volunteerism (5.1.2) that may replace this program.	Housing/Planning
8-6	Contract with a fair housing agency to mediate between landlords and tenants and educate them on their rights and responsibilities.	Fair housing receives CDBG funding for these activities on an annual basis.	Housing/Planning
8-7	Update the City's Analysis of Impediments to Fair Housing.	This item is no longer active due to funding loss. Funding sources are being looked at.	Housing/Planning
8-8	Provide rehabilitation loans through the City's Rental Rehabilitation Program that offers 5% loans with the first year deferred and amortized over a 19-year period.	The program has met its goal and is currently no longer active due to funding.	Housing/Planning
8-9	Through the Homebuyer Assistance Program, provide 30-year deferred silent second loans, with no interest, up to 20% or $200,000 of the purchase price of resale homes.	The program has met its goal and is currently no longer active due to funding.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
8-10	Work with local CHDO to construct and/or rehabilitate houses for very low-income households.	The City receives an allocation of HOME funds for CHDOs. This funding may only be used for this purpose.	Housing/Planning

8-11	Purchase HUD homes for resale to first time homebuyers.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Plan
8-12	Administer new construction home ownership program and youth job training.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Planning
8-13	Work with housing developers by providing Agency assistance to write-down the costs of units via loans.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Planning
8-14	Provide financial assistance for the development of affordable rental units for larger families.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available. The Housing Authority will continue to address new units as funding is available.	Housing/Planning
8-15	Revise General Plan.	The General Plan was revised in 2013 to add the R30 land use.	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
8-16	Continue to implement permit streamlining.	Permit streamlining is ongoing in support of affordable housing projects within the Housing Element.	Housing/Planning

8-17	Develop standards for mobile home parks and mobile home subdivisions.	If not governed or following under state regulations, Mobile home parks and subdivisions are addressed in the Municipal Code regarding use (Section 9.02.020-1 - Conditional Use Permit in residential zones) and standards (Section 9.08.110 "Manufactured Home Requirements").	Housing/Plan
8-18	Review parking standards for multi-family 3 and 4 bedroom units, including covered parking requirements to determine if reductions are appropriate.	The Municipal Code addresses density bonus, affordable housing and senior housing projects through reductions/modifications to standards.	Housing/Planning
8-19	Review second unit regulations to determine if expansion is merited to additional districts.	This item is ongoing to meet new state regulations and will remain in compliance with State law requirements.	Housing/Planning
8-20	Continue to pay the development fees for projects, on a case-by-case basis, that have received State or Federal funds, such as Section 202 and Tax Credits.	All uses, including Section 202 projects , continue to pay development impact fees on a case by case basis (ongoing).	Housing/Planning
8-21	Utilize Redevelopment Agency funds, where appropriate and necessary, to facilitate infrastructure for affordable projects.	Following the dissolution of RDA, there are no currently active programs due to limited or no funding available.	Housing/Planning
8-22	Propose general plan changes for rezoning areas in the city to housing uses or mixed uses that include housing.	The Municipal Code was updated in 2014 to include provisions for mixed use projects	Housing/Planning
Goal/Policy	**Description**	**Discussion on Implementation Status**	**Responsible Party**
8-23	Facilitate the construction of a sixty-nine unit multi- family senior complex.	We are currently pursuing a senior development opportunity on Housing Authority property.	Housing/Planning

Moreno Valley General Plan

Complete List of Goals and Policies from the Housing Element 2014- 2021 (Cycle 5)

1	2	3	4
Name of Program	**Objective**	**Timeframe**	**Status of the Program Implementation**
Action 1.1	Review and update the General Plan periodically (if an update is needed) to ensure that growth trends are addressed. *Responsible Agency: City of Moreno Valley Planning Division* *Time frame: Ongoing 2014-2021* *Potential Funding Source: General Fund*	Ongoing 2014 – 2021	**The City of Moreno Valley is currently working on a comprehensive General Plan Update due to be completed in mid 2021. The effort is entitled "MoVal 2040".**
Action 1.2	Encourage variety of housing development through various Overlay zone alternatives (Senior Housing, Planned Development, Mixed Use) or with the density bonus incentives. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund* *Objective: Target 1 mixed-use project over the planning period.*	Ongoing 2014 – 2021	Ongoing
Action 1.3	The Moreno Valley Housing Authority will utilize available funding, HOME, CDBG, etc. allocations to provide the following incentives which may be applied to an affordable housing project: 1) Lease or purchase of City owned property at low rates; 2) Provision of off-site improvements. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: CDBG, HOME, General Fund*	Ongoing 2014 – 2021	Ongoing
Action 1.4	Encourage a mixture of diverse housing types and densities in new developments, guided by specific plans	Ongoing 2014 – 2021	Ongoing

	and the Mixed Use Overlay District, around Sunnymead and Alessandro Boulevards and throughout the City. Focus development activity within the Village Specific Plan (SP 204) area to suitably zoned underutilized land and the potential for mixed-use projects exists for the development of affordable housing. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund, Moreno Valley Housing Authority* *Objective: Target 1 mixed-use project over the planning period.*		
Action 1.5	Support the use of innovative building techniques and construction materials for residential development, such as energy efficient buildings that utilize solar panels and sustainable building materials that are recyclable. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021 (latest grant funded through December 2014)* *Potential Funding Source: General Fund, Grants* *Objective: Using SC Edison grants to develop innovative development standards for energy conservation.*	Ongoing 2014 – 2021	Ongoing Latest grant funded through December 2014.
Action 1.6	Work with Habitat for Humanity to utilize vacant Housing Authority owned infill lots for single-family development to provide housing for lower income families and individuals. *Responsible Agency: City of Moreno Valley Planning Division, Business Support & Neighborhood Programs Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: CDBG& NSP 3 funds for acquisition of property to be rehabilitated and sold* *Objective: Approval of 8 unit Tract Map and building 8 units in the planning period. Tentative Tract map for project*	Ongoing 2014 – 2021	Approval of 8 unit Tract Map (TTR 36598) and building of all 8 single-family residences by Habitat for Humanity. TTR 36598 was approved at Planning Commission on December 12, 2013. The residences were all finaled and occupied in 2016.

	was approved at Planning Commission in on December 12, 2013. Building of units to begin in Fall 2014.		
Action 1.7	Continue to track affordable housing units City-wide. This includes monitoring the method by which units remain affordable to lower-income households (i.e. covenants, deed restrictions, loans, etc.). Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division and Moreno Valley Housing Authority Timeframe: Ongoing 2014-2021 Potential Funding Source: General Fund	Ongoing 2014 – 2021	Support provided by the City of Moreno Valley Business Support & Neighborhood Programs Division and Moreno Valley Housing Authority, which is now part of the Financial & Management Services Department.
Action 1.8	The Planning Division will utilize design, development, processing and streamlining incentives, such as reductions in parking requirements, and other standards, to encourage residential uses and to promote more intense residential development in the Mixed Use Districts Overlay and Residential 30 (R30) areas. Information on these financial and regulatory incentives will be made available on the City's website and in public places at City Hall. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Sources: General Fund, Tax Credits, HOME funds, CDBG, CHFA funds, HUD, Local Lenders* *Objective: Promote development of one mixed use project for lower and moderate-income households*	Ongoing 2014 – 2021	Ongoing
Action 1.9	Establish parking standards for senior and affordable housing developments that are located in proximity to transit stops. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Adopt by end of 2014* *Potential Funding Source: General Fund* *Objective: To promote high density housing near transportation opportunities. Promote development of*	Ongoing 2014 – 2021	Ongoing Parking standards are reduced for senior/affordable projects.

	one senior and affordable housing development over the planning period.		
Action 1.10	To encourage the development of affordable residential and mixed-use projects, the City will offer incentives such as a reduction in development standards (i.e. lot size and parking requirements) and with assistance from the Moreno Valley Housing Authority, subsidize a portion of development costs to encourage lot consolidation and to promote more intense residential and mixed-use development on vacant and underutilized sites within the Village Specific Plan (SP 204) area. While the City is more than able to accommodate the remaining RHNA allocation for the planning period on sites larger than one acre, this program allows for the City to begin planning for the future by encouraging property owners to consolidate adjacent properties to develop larger projects. *Responsible Agency: The City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	Ongoing 2014 – 2021	Ongoing The redesignation of the Village Specific Plan (Sunnymead Village) to allow up to 20 du/acre as part of the comprehensive General Plan update will hopefully encourage consolidation of lots. The reduction in development standards can be explored further through the zoning consistency/ development code update.

Action 2.1	Utilize resources such as HOME funds, California Housing Finance Agency single-family and multiple-family programs, HUD Section 208/811 loans, and HOPE II and III Homeownership programs to stimulate private developer and non-profit entity efforts in the development and financing of housing for lower and moderate-income households. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: HOME funds, CDBG, CHFA funds, HUD, Local Lenders*	*Ongoing 2014-2021*	Ongoing
Action 2.2	The Moreno Valley Housing Authority should facilitate discussions between developers and local banks to meet their	*Ongoing 2014-2021*	Ongoing

	obligations pursuant to the California Community Reinvestment Act (CCRA) providing favorable financing to developers involved in projects designed to provide lower and moderate-income housing opportunities. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021*		
Action 2.3	Consider pursuing a program through the Moreno Valley Housing Authority, if funding is available, or through interested certified Community Housing Development Organization's (CHDO) and/or non-profit organizations, to purchase affordability covenants on existing multiple-family units, subject to restrictions that the affordability covenants would be in effect for not less than 30 years, and that at least 20 percent of the units would be affordable to extremely low- and very low-income households. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: Moreno Valley Housing Authority, CDBG, HOME, Bond Financing* *Objective: Target one project of a minimum of 40 units for extremely-low and very-low incomes.*	*Ongoing 2014-2021*	Ongoing
Action 2.4	To comply with Senate Bill 2, the City has amended the Moreno Valley Industrial Area Plan (SP 208) to permit emergency shelters by right in the Industrial Support Area without a conditional use permit or other discretionary permit. The City will continue to monitor the inventory of sites appropriate to accommodate emergency shelters and will work with appropriate organizations to ensure the needs of the homeless population whenever possible. *Responsible Agency: City of Moreno Valley Planning Division*	*Ongoing 2014-2021*	Ongoing

	Timeframe: 2014-2021 *Potential Funding Source: General Fund, Emergency Shelter Grant Funds* *Objective: Yearly review of inventory sites in the Moreno Valley Industrial Area Plan (SP 208)*		
Action 2.5	The City will maintain a list of mortgage lenders participating in the California Housing Finance Agency (CHFA) program and refer the program to builders or corporations interested in developing housing in the City. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021*	*Ongoing 2014-2021*	Ongoing List available from the Moreno Valley Housing Authority.
Action 2.6	Continue cooperation with the Riverside County Housing Authority to provide Section 8 rental assistance and work with property owners to encourage expansion of rental projects participating in the program. *Responsible Agency: Moreno Valley Housing Authority and Riverside County Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: Riverside County Housing Authority, HUD Section 8*	*Ongoing 2014-2021*	Ongoing City continues to work with the Moreno Valley Housing Authority.
Action 2.7	Provide incentives for development of lower income housing through the density bonus program. Actively promote its use in conjunction with mixed-use projects in the Mixed Use Districts Overlay, for senior housing, and within multiple-family zones. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund, Tax Credits* *Objective: Target 1 mixed-use project over the planning period.*	*Ongoing 2014-2021*	Ongoing Density program is ongoing.

Action 2.8	Continue to support the City's effort of encouraging multiple-family developments with affordability covenants on units through offering development incentives. These incentives could include reduction in development standards, and expedited permit processing. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: 2014-2021* *Potential Funding Source: CDBG, HOME funds, Bond Financing* Potential Funding Source: General Fund *Objective: Target 1 mixed-use project over the planning period.*	*Ongoing 2014-2021*	Ongoing Development incentives are ongoing.
Action 2.9	Pursuant to Government Code Section 65583, the City of Moreno Valley is obligated to remove potential and actual governmental constraints upon the maintenance, improvement, or development of housing for all income levels and for persons with disabilities. To address the needs of this population, the City amended the Zoning Code to adopt formal reasonable accommodation procedures. Reasonable accommodation provides a basis for residents with disabilities to request flexibility in the application of land use and zoning regulations or, in some instances, even a waiver of certain restrictions or requirements from the local government to ensure equal access to housing opportunities. The City will provide information regarding the City's reasonable accommodation ordinance and make information on the program more widely available to residents. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: 2014-2021* *Potential Funding Source: General Fund, HUD Section 202/811 funds*	*Ongoing 2014-2021*	Ongoing
Action 2.10	Prioritize resources such as HOME funds, California Housing Finance Agency single-family and multiple-family programs, HUD Section	*Ongoing 2014-2021*	Ongoing

	208/811 loans for the development of rental projects that provide units with two or three bedrooms. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: CHFA funds, HUD loans, HOPE funds, HOME funds* *Objective: Promote the development of 20 rental units with two or three bedrooms*		
Action 2.11	The City will adopt a density bonus ordinance in compliance with Government Code Section 65915. *Responsible Agency: Planning Division* *Timing: Adopt by end of 2014* *Funding: General Fund* *Objective: To promote the financial feasibility of development affordable to lower-income households utilizing density bonuses and incentives and concessions.*	*Ongoing 2014-2021*	Density Bonus Section of Title 9 will be updated with SB2 funds - due to be start in 2020 and completed in 2021.

Action 3.1	The City shall expedite and prioritize development processing time of applications for new construction or rehabilitation of housing for lower and moderate-income households and seniors (Previously referred to as Program 8.16). Expedited permit processing would allow complete development applications to be reviewed at an accelerated rate by City Staff in order to ensure that permit processing times do not create a potential constraint on the development of affordable units by adding to the overall cost of the project. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing Expedited permit processing is available for new construction or rehabilitation.
Action 3.2	To accommodate the needs of extremely low-income households and households with special needs	*Ongoing 2014-2021*	Ongoing

	and comply with Senate Bill 2, the City amended Zoning Code Section 9.09.190 to include Single room occupancy (SRO) facilities. Residential 30 (R30), the Mixed Use District Overlay and Community Commercial (CC)allow Single Room Occupancy (SRO) housing as a permitted use without a conditional use permit or other discretionary permit. The City will continue to monitor the inventory of sites appropriate to accommodate single-room occupancy units and will work with the appropriate organizations to ensure the needs of extremely low-income residents are met. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: 2014-2021* *Potential Funding Source: General Fund* *Objective: Yearly review of site inventory.*		
Action 3.3	Continue to permit manufactured housing on permanent foundations in residential zones subject to compatibility criteria (manufactured housing is subject to the same design review criteria as custom or tract homes). *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing 2014-2021*	*Ongoing 2014-2021*	Ongoing Continues to be allowed.
Action 3.4	In accordance with Government Code Section 65589.7 as revised in 2005, immediately following City Council adoption, the City must deliver a copy of the 2014-2021 Housing Element to all public agencies or private entities that provide water or sewer services to properties within the City of Moreno Valley. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: By March 1, 2014* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Completed by March 1, 2014.

Action 3.5	Administer contract with fair housing agency (Previously referred to as Program 8.7). These services provide educating households on their rights and responsibilities and assist residents with fair housing issues. *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division* *Timeframe: 2014-2021* *Potential Funding Source: General Fund* *Objective: To assist 2,500 households during the planning cycle of 2014-2021.*	*Ongoing 2014-2021*	Ongoing Services are ongoing.
Action 3.6	Maintain Development Impact Fees (DIF) at a lower level for affordable units (Previously referred to as Program 8.15). The City offers 25% reduction in the Development Impact Fees (DIF) for affordable housing developments. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing* *Potential Funding Source: General Fund* *Objective: 600 affordable units over the planning cycle.*	*Ongoing 2014-2021*	Ongoing
Action 3.7	Defer Development Impact Fee for affordable units, until issuance of Certificate of Occupancy (Previously referred to as Program 8.14). *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing* *Potential Funding Source: General Fund* *Objective: 600 affordable units over the planning cycle.*	*Ongoing 2014-2021*	Ongoing
Action 3.8	Waive Traffic Uniform Mitigation Fee (TUMF) for affordable units (Previously referred to as Program 8.17). *Responsible Agency: City of Moreno Valley Planning Division*	*Ongoing 2014-2021*	The text will be revised in the upcoming Housing Element Update to clarify if the project qualifies and if so, it will be exempt from TUMF based on the City's adopted ordinance.

	Timeframe: Ongoing *Potential Funding Source: General Fund* *Objective: 600 affordable units over the planning cycle.*		
Action 3.9	Apply for grant funds to upgrade water infrastructure in the Box Springs Municipal Water Company (BSMWC) service area (Previously referred to as Program 8.22). *Responsible Agency: City of Moreno Valley Planning Division and Business Support & Neighborhood Programs Division* *Timeframe: Ongoing* *Potential Funding Source: Grants* *Objective: The City will continue to research grant opportunities.*	*Ongoing 2014-2021*	Ongoing - City continues to work with Box Springs Municipal Water Company Service area to support their pursuit of grant funding efforts to upgrade water infrastructure.

Action 4.1	Continue to provide favorable home purchasing options to lower and moderate-income households, when funds are available, through the County of Riverside's First Time Homebuyers Down Payment Assistance Program and homeownership assistance with the County Mortgage Credit Certificate (MCC) program. *Responsible Agency: County of Riverside Housing Authority and Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: County of Riverside Economic Development Department*	*Ongoing 2014-2021*	Ongoing
Action 4.2	Continue to work with Habitat for Humanity in the development of single-family homes for lower income families. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: HOME Funds* *Objective: Approval of 8 unit Tract Map and building 8 units in the*	*Ongoing 2014-2021*	Ongoing SF homes built in 2014. Program remains in place, but no recent activity.

	planning period. Tentative Tract map was approved at Planning Commission on December 12, 2013. Building of units to begin in Fall 2014.		
Action 4.3	The Moreno Valley Housing Authority shall provide support to the California Housing Finance Agency (CHFA) program, which supports construction of new owner-occupied units in conjunction with non-profit organizations and/or private developers through advertisement and referral to the program. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: HOME Funds, CHFA Funds*	*Ongoing 2014-2021*	Ongoing
Action 4.4	The City shall establish relationships with local lenders, developers and other constituencies such as realtors, and non-profit organizations through community outreach workshops that emphasize specific ideas, issues, and expectations for future development in Moreno Valley. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing
Action 4.5	Provide funds for Homebuyer Assistance Program (HAP) silent seconds. Work with approved lenders that have HAP experience. The goal of the program is to provide homeownership for low and moderate income families (Previously referred to as Program 8.10). *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 15 units during the planning cycle of 2014-2021.*	*Ongoing 2014-2021*	Ongoing - Finance provides this program through the County of Riverside and the use of PLHA funding.

Action 5.1	Maintain code compliance to ensure building safety and integrity of residential neighborhoods. Enforce the building code through issuance of a permit prior to construction, repair, addition to, or relocation of any residential structure. *Responsible Agency: City of Moreno Valley Planning Division and Building Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing
Action 5.2	Monitor the substandard dwellings which cannot be economically repaired and remove when necessary and feasible. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund* *Objective: Target of 3 units during the planning period.*	*Ongoing 2014-2021*	Ongoing
Action 5.3	Administer a program to provide grant funds for neighborhood beautification in targeted neighborhoods (Previously referred to as Program 8.3). *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 3 units per year during the planning cycle of 2014-2021.*	*Ongoing 2014-2021*	Ongoing
Action 5.4	Receive and approve applications for Mobile Home Grant Program (the goal of the program is to correct substandard living conditions for very low-income owner-occupants). Market program via City Links newsletter. Continue to distribute program material to mobile home parks (Previously referred to as Program 8.4).	*Ongoing 2014-2021*	Ongoing

	Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division and Habitat for Humanity *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 3 mobile homes per year during the planning cycle of 2014-2021.*		
Action 5.5	Provide enhanced code compliance services in the CDBG target areas. Fund 5,000 hours of code enforcement in the CDBG target areas (Previously referred to as Program 8.5). *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division and Code and Neighborhood Services Division.* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target is to fund 5,000 hours of code enforcement over the next planning cycle of 2014-2021.*	*Ongoing 2014-2021*	Ongoing
Action 5.6	Conduct five (5) annual neighborhood clean-ups, improving the living environment of residents. Provide bins for trash disposal. *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division and Code and Neighborhood Services Division.* *Timeframe: 2014-2021* *Potential Funding Source: CDBG funds* *Objective: Target of 5 clean ups per year during the planning cycle of 2014-2021.*	*Ongoing 2014-2021*	Ongoing CDBG no longer funds neighborhood cleanups, however CDBG does fund clean up in the City's right of ways with the use of the ESG Program known as Homeless To Work.

Action 6.1	Encourage maximum utilization of Federal, State, and local government programs, such as the County of Riverside Home Weatherization Program and Western Riverside Council of Governments HERO	*Ongoing 2014-2021*	

	program, and assist homeowners in providing energy conservation measures. *Responsible Agency: Moreno Valley Housing Authority* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: County of Riverside*		
Action 6.2	Maintain and distribute literature on energy conservation, including solar power, additional insulation, and subsidies available from utility companies, and encourage homeowners and landlords to incorporate these features into construction and remodeling projects. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing Moreno Valley Utilities (MVU)
Action 6.3	Facilitate sustainable development in the City by enforcing the goals, policies, and implementation measures established in the proposed Sustainable Community section in the Conservation Element. *Responsible Agency: City of Moreno Valley Planning Division and Building Division* *Timeframe: Ongoing 2014-2021*	*Ongoing 2014-2021*	Ongoing
Action 6.4	The City shall implement its local action plan for reduction of greenhouse gas emissions. *Responsible Agency: City of Moreno Valley Planning Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing
Action 6.5	Implement residential Solar Initiative Program to MV Utility customers (Previously referred to as Program 8.31). Literature for the public on energy saving programs offered by local utility companies are available in	*Ongoing 2014-2021*	Ongoing

	City Hall offices and on the City's website. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Utilities* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund* *Objective: The City will continue to encourage homeowners and landlords to incorporate energy conservation within construction and remodeling projects.*		
Action 6.6	Market energy efficiency program for residents of MV Utility area (Previously referred to as Program 8.34). The City has energy efficiency information posted on its website and information regarding various programs is mailed out to MV Utility customers in their bills. *Responsible Agency: City of Moreno Valley Planning Division and Moreno Valley Utilities* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	Ongoing

Action 7.1	The City, in conjunction with the Riverside County Fair Housing Council, shall support efforts dedicated to working towards the elimination of the discrimination of housing by actively pursuing any complaints of housing discrimination within the City. Information detailing fair housing practices will be made available at City Hall and on the City's website. Additionally, the City will participate with the Riverside County Fair Housing Council to conduct workshops and seminars about landlord and tenant responsibilities and rights (Previously referred to as Program 8.7). *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division*	*Ongoing 2014-2021*	Ongoing

	and Riverside County Fair Housing Council *Timeframe: Ongoing 2014-2021* *Potential Funding Source: CDBG* *Objective: To assist 2,500 households during the planning cycle of 2014-2021.*		
Action 7.2	The housing needs of persons with developmental disabilities are typically not addressed by Title 24 Regulations, and requires in addition to basic affordability, slight modifications to existing units, and in some instances, a varying range of supportive housing facilities. To accommodate residents with developmental disabilities, the City will seek State and Federal monies, as funding becomes available, in support of housing construction and rehabilitation targeted for persons with developmental disabilities. Moreno Valley will also provide regulatory incentives, such as expedited permit processing, and fee waivers and deferrals, to projects targeted for persons with developmental disabilities. To further facilitate the development of units to accommodate persons with developmental disabilities, the City shall reach out to developers of supportive housing to encourage development of projects targeted for special needs groups. Finally, as housing is developed or identified, Moreno Valley will work with the Inland Regional Center to implement an outreach program informing families within the City of housing and services available for persons with developmental disabilities. Information will be made available on the City's website. *Responsible Agency: City of Moreno Valley Business Support & Neighborhood Programs Division* *Timeframe: Ongoing 2014-2021* *Potential Funding Source: General Fund*	*Ongoing 2014-2021*	The Action will be edited as part of the Housing Element Update to clarify that supportive housing will be addressed through the development code amendment that will be prepared. Funds awarded to Moreno Valley under the LEAP grant (2020/2021) to support this work.

PLANNING COMMISSION

STAFF REPORT

Meeting Date: February 11, 2021

CONDITIONAL USE PERMIT FOR A 1,474 SQUARE FOOT RETAIL CANNABIS DISPENSARY LOCATED WITHIN AN EXISTING BUILDING AT 24095 SUNNYMEAD BOULEVARD AND CLASS 32 CEQA EXEMPTION

Case:	PEN20-0093 Conditional Use Permit
Applicant:	RD Medigroup, Inc - DBA It's 4:20 Time
Property Owner:	Judith Flores
Representative:	Roberto Milli
Location:	24095 Sunnymead Boulevard, on the south side of Sunnymead Boulevard between Indian Street and Heacock Street. (APN's 481-120-004 & 481-120-005)
Case Planner:	Sean Kelleher
Council District:	1
Proposal	Conditional Use Permit for a 1,474 square foot retail cannabis Dispensary, "It's 4:20 Time," located within an existing building at 24095 Sunnymead Boulevard.

SUMMARY

The applicant, RD Medigroup, is requesting approval of a Conditional Use Permit (CUP) to allow a 1,474 square foot retail cannabis dispensary within an existing building and associated improvements on the westerly-adjacent parcel in the Village Specific Plan SP 204, Village Commercial Residential (VCR) District. The Village Specific Plan SP 204, Village Commercial Residential (VCR) District incorporates the permitted and conditionally permitted uses within the Moreno Valley Municipal Code's Neighborhood Commercial (NC) District by reference. The proposed use of commercial retail sales of

cannabis is a conditionally permitted use within the Neighborhood Commercial (NC) District and therefore is also a conditionally permitted use in the Village Specific Plan SP 204, Village Commercial Residential (VCR) District. The proposed use is for commercial retail sales of cannabis and cannabis products sold to individuals who are 21 years of age or older.

Background

City Regulations

In November 2017, the City Council adopted Ordinance 926, which set rules for the establishment, operation, and regulation of specific commercial cannabis uses. In March 2018, the City Council approved Resolution 2018-11 approving the initial procedure for permit applications. Land use regulations for the operation of cannabis uses were established in April 2018 with the adoption of Ordinance 932, which provided for the following cannabis uses: dispensaries, testing, cultivation, manufacturing, microbusinesses, and distribution.

Additionally, in December 2018, the City Council adopted Resolution No. 2018-94, establishing a maximum of 43 commercial cannabis permits. The table below identifies the various types of commercial cannabis permit types, the number of permits allowed, and the number and status of permits submitted.

Commercial Cannabis Permit Types	Number of Permits Allowed	Number of Provisional Business Permits Issued	Number of Conditional Use Permit Applications Submitted	Number of Conditional Use Permit Applications In Review	Number of Conditional Use Permit Applications Approved
Dispensaries	23	23*	22*	3	18
Manufacturing	5	2	2	2	0
Cultivation	8	2	2	2	0
Distribution (of products from licensee to licensee only)	2	2	2	1	1
Microbusinesses	3	3*	3*	0	2
Testing Facilities	2	0	0	0	0
*Note: The Provisional Business License for one Microbusiness and one Dispensary have been revoked; therefore, the associated Conditional Use Permit Applications were closed.					

The City's multi-step process for selecting commercial cannabis businesses that can legally operate in the City is as follows:

Step 1 – Application Process. Commercial Cannabis Business Permit applications were reviewed, and a background check of business owner(s) and their employees, was conducted. Applications with a minimum overall score of 80% were interviewed by staff to establish a candidate pool, and applications were required to be submitted

through an online (PlanetBids) system. The City issued provisional Commercial Cannabis Business Permits to 32 successful applicants. Only those commercial cannabis businesses with provisional permits are eligible to proceed to the subsequent steps in the process.

Step 2 – Obtain a Conditional Use Permit. Municipal Code Section 9.09.290(C)(2) requires that commercial cannabis businesses must obtain a Conditional Use Permit, which is a land use entitlement process to confirm the proposed land use and site development elements will be consistent with City established development regulations as well as compatible with other land uses near the proposed project.

Step 3 – State approval. In addition to local permits, each commercial cannabis business must also obtain applicable State of California cannabis permits prior to commencing operation lawfully within the City.

Step 4 – Obtain a Certificate of Occupancy. Lastly, all commercial cannabis businesses must obtain a Certificate of Occupancy ("C of O") from the Building and Safety Division prior to opening for business. The C of O is the final step in the process and documents that the Applicant has completed all required tenant improvements to the building and modifications to the parking lot, as required by conditions of approval in the CUP Resolution, and have paid all requisite City fees.

Provisional Commercial Cannabis Business Permit

On December 20, 2020, It's 420 time/RD Medigroup received a provisional Commercial Cannabis Business Permit (Permit Number MVCCBP-R0015) from the City of Moreno Valley. The applicant represents that they will apply for the necessary state permits once the Planning Commission approves the CUP application.

PROJECT

The applicant is requesting approval to establish a commercial cannabis dispensary (retail sales only) within an existing building and associated site improvements for adjacent parcels at 24085 and 24095 Sunnymead Boulevard, on the south side of Sunnymead Boulevard between Indian Street and Heacock Street. (APN's 481-120-005 & 481-120-004). The project site includes a vacant parcel addressed as 24085 Sunnymead Boulevard and an existing one-story, rectangular building located at 24095 Sunnymead Boulevard.

Proposed tenant improvements include modifications to the floor plan by adding new full height wall partitions to establish a new hallway, dispensing area, retail area, office, a restroom and secured storage area. The hallway is used as a check-in area with a security guard on site. The retail and dispensary area would provide for the sale of cannabis products, and the remainder of the building would include a hallway, a restroom, an employee and security office, and a secured storage area. Various exterior improvements are proposed, including the repair of the storefront glass, painting the existing stucco building, a new block wall at the south of the property, and adding

artificial stone veneer to the building as discussed in the design section below. The applicant is proposing hours of operation between 7:00 a.m. and 9:00 p.m. Monday through Sunday.

Associated site improvements will include parking areas and site landscaping to the west of the building.

Safety and Security Plan

The applicant will implement similar security measures to other cannabis retail businesses, as are required by Moreno Valley Municipal Code Section 9.09.290. The section requires a Safety and Security Plan, which has been provided to the City and identifies methods to address site security for employees, customers, and the public as well as fire prevention methods that comply with local and state laws and include provisions for on-site security guards, fire alarm system, on-site safety and security signage, parking lot lighting, and required secured parking for deliveries, a video surveillance system, the transfer of product and currency. A condition of approval requires the applicant to provide all video to the Police and Fire Departments upon their request.

Odor Control Plan

An Odor Control Plan has been prepared for the project in conformance with City requirements to ensure abatement of all potential odors that could emanate from the dispensary. This plan states that the dispensary will utilize an activated carbon filter system. Filters will be replaced as necessary to ensure there will be no odor nuisance emitted from the operation. Ozone generators will also be stored on the premises and will only be brought out when/if it is determined that the carbon filters are not sufficient. The air filtration system will be designed by a licensed Mechanical Engineer and reviewed and permitted by the Building & Safety Division staff as part of the tenant improvement plans for the heating, ventilation and air conditioning (HVAC) systems for the proposed dispensary. In addition, staff is requiring that automatic closures shall be installed on all interior and exterior doors and that all roof venting, wall penetrations panel joints, etc., be sealed to prevent odors from migrating outside of the dispensary.

Surrounding Area

The proposed retail cannabis dispensary will occupy a 1,474 square foot existing building. Uses east and west of the site include a convenience store and a car wash. Uses to the south are residential properties. Uses adjacent to the north across the street of Sunnymead Boulevard are a mix of retail, office, and auto service.

Access/Parking

Vehicle access to the site is provided by two existing driveways on Sunnymead Boulevard. The applicant has proposed 7 parking spaces consistent with the City's Parking requirements. However, 4 of the parking spaces have been designed to be

shorter and narrower than the City requirements of 18 feet long and 9 feet wide; therefore a condition of approval has been applied to the project to require the applicant to redesign those parking spaces. There is adequate space on-site to comply with this requirement.

Design/Landscaping

The applicant has proposed improvements to the exterior of the existing building including the addition of artificial stone veneer around the base of the building, as well as on the existing columns in the front of the building. Other exterior improvements include the repair of the storefront glass window, and the painting of existing stucco.

In addition to the exterior modifications to the building, the applicant has proposed to upgrade the project site in several different ways, including: new exterior lighting, new landscaping, a new trash enclosure, and a new block wall along a portion of the southern property line, adjacent to existing single family residential uses. Applicant will hydro-seed on the existing vacant portion of the property.

REVIEW PROCESS

In compliance with the Municipal Code, the Project Review Staff Committee (PRSC) reviewed this project on July 29, 2020. The applicant has worked with staff, and modified the proposed plans to the satisfaction of all departments. Based on staff's review, it was determined that the project will be consistent with the City's requirements, subject to the conditions of approval in the attached Resolution.

ENVIRONMENTAL

Staff recommends that the Planning Commission find that the proposed project is exempt from the provisions of the California Environmental Quality Act (CEQA) under CEQA Guidelines as a Class 32 Exemption (Section 15332, In-Fill Development Projects). Pursuant to the California Code of Regulations a Class 32 exemption can be applied to a project when the project is 1) consistent with the applicable General Plan designation and applicable policies; 2) occurs on a site that is less than five acres in size; 3) the site has no valuable habitat for rare or endangered species; 4) the project will not result in significant effects related to traffic, noise, air quality, or water quality; and 5) the site is adequately served by utilities and public services. The proposed project has been found to meet all of the conditions of the Class 32 exemption as the project is consistent with the applicable General Plan designation and policies; is located on a site less than five acres in size; contains no valuable habitat; will not result in significant environmental effects; and is adequately served by utilities and public services.

NOTIFICATION

Public notice was sent to all property owners of record within 600' of the project on January 28, 2021. The public hearing notice for this project was posted on the project site and published in the local newspaper on January 30, 2021.

REVIEW AGENCY COMMENTS

The project application materials were circulated for review by all appropriate City departments and divisions as well as applicable outside agencies.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission APPROVE Resolution No. 2021-08, and thereby:

1. **DETERMINING** that Conditional Use Permit PEN20-0093 is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) as a Class 32 Exemption (Section 15332, In-Fill Development Projects); and

2. **APPROVING** Conditional Use Permit PEN20-0093 subject to the attached Conditions of Approval included as Exhibit A to the Resolution.

Prepared by:
Sean P Kelleher

Approved by:
Patty Nevins
Planning Official

ATTACHMENTS

1. Resolution No. 2021-08 Conditional Use Permit
2. Exhibit A to Resolution No. 2021-08 Conditions of Approval
3. Aerial Map
4. Zoning Map
5. Project Plans
6. 600 Foot Mailing Notice
7. 600 Foot Radius Map

RESOLUTION NUMBER 2021-08

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING A CONDITIONAL USE PERMIT (PEN20-0093) FOR A CANNABIS DISPENSARY, "IT'S 4:20 TIME" LOCATED AT 24085 AND 24095 SUNNYMEAD BOULEVARD, ON THE SOUTH SIDE OF SUNNYMEAD BOULEVARD BETWEEN HEACOCK STREET AND INDIAN STREET (APNs 481-120-004 AND 481-120-005)

WHEREAS, the City of Moreno Valley ("City") is a general law city and a municipal corporation of the State of California; and

WHEREAS, RD Medigroup, Inc ("Applicant") has filed an application for the approval of Conditional Use Permit PEN20-0093 ("Application") for the development of a new commercial (retail) cannabis dispensary ("Project") located at 24085 and 24095 Sunnymead Boulevard ("Site"); and

WHEREAS, Section 9.09.290 (Commercial Cannabis Activities) provides that a limited number of commercial cannabis dispensaries may be allowed within the Community Commercial (CC), Neighborhood Commercial (NC) and Business Park-Mixed Use (BPX) zoning districts, with a properly secured conditional use permit approved through the Planning Commission; and

WHEREAS, Section 9.02.060 (Conditional Use Permits) of the Moreno Valley Municipal Code acknowledges that the purpose of conditional use permits is to allow the establishment of uses that may have special impacts or uniqueness such that their effect on the surrounding environment cannot be determined in advance of the use being proposed for a particular location and that the conditional use permit application process involves the review of location, design and configuration of improvements related to the project, and the potential impact of the project on the surrounding area based on fixed and established standards; and

WHEREAS, the Application has been evaluated in accordance with Section 9.02.060 (Conditional Use Permits) of the Municipal Code with consideration given to the City's General Plan, Zoning Ordinance, Specific Plan 204 and other applicable laws and regulations; and

WHEREAS, Section 9.02.060 of the Municipal Code imposes conditions of approval upon projects for which a CUP is required, which conditions may be imposed by the Planning Commission to address on-site improvements, off-site improvements, the manner in which the site is used and any other conditions as may be deemed necessary to protect the public health, safety and welfare to ensure that the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, pursuant to the provisions of Section 9.02.200 (Public Hearing And Notification Procedures) of the Municipal Code and Government Code Section 65905, a

public hearing was scheduled for February 11, 2021, and notice thereof was duly published and posted, and mailed to all property owners of record within 600 feet of the Site; and

WHEREAS, on February 11, 2021, the public hearing to consider the Application was duly conducted by the Planning Commission at which time all interested persons were provided with an opportunity to testify and to present evidence; and

WHEREAS, consistent with the requirements of Section 9.02.060 (Conditional Use Permits) of the Municipal Code, at the public hearing the Planning Commission considered Conditions of Approval Nos. to be imposed upon Conditional Use Permit PEN20-0093 ("CUP"), which conditions were prepared by Planning Division staff who deemed said conditions to be necessary to protect the public health, safety and welfare and to ensure the proposed Project will be developed in accordance with the purpose and intent of Title 9 ("Planning and Zoning") of the Municipal Code; and

WHEREAS, at the public hearing, the Planning Commission reviewed and considered the Planning Division's recommendation that the proposed Project is Categorically Exempt from the provisions of the California Environmental Quality Act (CEQA) as set forth in Public Resources Code Sections 21000 – 21177 and the CEQA Guidelines as set forth in 14 California Code of Regulations Sections 15000-15387, under CEQA Guidelines[1] Section 15332 (In-Fill Development Projects) which can be applied to a project when the project is 1) consistent with the applicable General Plan designation and applicable policies; 2) occurs on a site that is less than five acres in size; 3) the site has no valuable habitat for rare or endangered species; 4) the project will not result in significant effects related to traffic, noise, air quality, or water quality; and 5) the site is adequately served by utilities and public services; and

WHEREAS, at the public hearing, the Planning Commission reviewed and considered whether each of the requisite findings specified in Section 9.02.060 of the Municipal Code and set forth herein could be made with respect to the proposed Project as conditioned by the Conditions of Approval.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, 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. Notice

That pursuant to Government Code section 66020(d)(1), notice is hereby given that the proposed project is subject to certain fees, dedications, reservations and other exactions as provided herein.

[1] 14 California Code of Regulations §§15000-15387

Section 3. Evidence

That the Planning Commission has considered all of the evidence submitted into the administrative record for the proposed CUP, including, but not limited to, the following:

(a) Moreno Valley General Plan and all other relevant provisions contained therein;
(b) Title 9 (Planning and Zoning) of the Moreno Valley Municipal Code and all other relevant provisions referenced therein;
(c) Specific Plan 204 and all relevant provisions referenced therein;
(d) Application for the approval of Conditional Use Permit (CUP) PEN20-0093 and all documents, records and references contained therein;
(e) Conditions of Approval for CUP PEN20-0093, attached hereto as Exhibit A;
(f) Staff Report prepared for the Planning Commission's consideration and all documents, records and references related thereto, and Staff's presentation at the public hearing;
(g) Staff's determination that the proposed Project is categorically exempt in compliance with the California Environmental Quality Act (CEQA) and CEQA Guidelines;
(h) Testimony and/or comments from Applicant and its representatives during the public hearing; and
(i) Testimony and/or comments from all persons that was provided in written format or correspondence, at, or prior to, the public hearing.

Section 4. Findings

That based on the content of the foregoing Recitals and the Evidence contained in the Administrative Record as set forth above, the Planning Commission makes the following findings:

(a) The proposed Project is consistent with the goals, objectives, policies and programs of the General Plan;
(b) The proposed Project complies with all applicable zoning and other regulations;
(c) The proposed Project will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity; and
(d) The location, design and operation of the proposed Project will be compatible with existing and planned land uses in the vicinity.

Section 5. Determination of Categorical Exemption

That the Planning Commission hereby determines that the proposed Project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 15332 (In-Fill Development Projects).

Section 6. Notice of Exemption

That the Planning Division is hereby directed to prepare, execute, and file a Notice of Exemption as required by Section 5.2 (Noticing Requirements) of the City's Rules and Procedures for the Implementation of the California Environmental Quality Act and CEQA

Guidelines Section 15062.

Section 7. Approval

That based on the foregoing Recitals, Administrative Record and Findings, the Planning Commission hereby approves CUP PEN20-0093 subject to the Conditions of Approval for CUP PEN20-0093, attached hereto as Exhibit A.

Section 8. Repeal of Conflicting Provisions

That all the provisions as heretofore adopted by the Planning Commission that are in conflict with the provisions of this Resolution are hereby repealed.

Section 9. Severability

That the Planning Commission 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 10. Effective Date

That this Resolution shall take effect immediately upon the date of adoption.

PASSED AND ADOPTED THIS _____ day of _____, 2021.

CITY OF MORENO VALLEY
PLANNING COMMISSION

_____
Patricia Korzec, Chairperson

ATTEST:

_____
Patty Nevins,
Planning Official

APPROVED AS TO FORM:

_____
Steven B. Quintanilla,
Interim City Attorney

Exhibits:
Exhibit A: Conditions of Approval

Exhibit A

CONDITIONS OF APPROVAL

CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL
Conditional Use Permit (PEN20-0093)

EFFECTIVE DATE:
EXPIRATION DATE:

COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division

1. This approval shall expire three years after the approval date of this project unless used or extended as provided for by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever. Use means the beginning of substantial construction contemplated by this approval within the three-year period, which is thereafter pursued to completion, or the beginning of substantial utilization contemplated by this approval. (MC 9.02.230)

2. In the event the use hereby permitted ceases operation for a period of one (1) year or more, or as defined in the current Municipal Code, this permit may be revoked in accordance with provisions of the Municipal Code. (applicable to CUP's)

3. All landscaped areas and parking lots shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)

4. The site shall be developed in accordance with the approved plans on file in the Community Development Department - Planning Division, the Municipal Code regulations, General Plan, and the conditions contained herein. Prior to any use of the project site or business activity being commenced thereon, all Conditions of Approval shall be completed to the satisfaction of the Planning Official. (MC 9.14.020)

5. All signs indicated on the submitted plans are not included with this approval and shall be renewed under separate permit.

6. All site plans, grading plans, landscape and irrigation plans, fence/wall plans, lighting plans and street improvement plans shall be coordinated for consistency with this approval.

7. This project is located within Specific Plan 204. The provisions of the specific plan, the design manual, their subsequent amendments, and the Conditions of Approval shall prevail unless modified herein. (MC 9.13)

Special Conditions

8. The commercial cannabis dispensary shall be consistent with all other applicable federal, state and local requirements including the Moreno Valley Municipal Code Title 5 and Title 9, and all related Municipal Code sections.

9. The cannabis licensee shall display its current valid Commercial Cannabis Business Permit under Chapter 5.05 of this Code and a Conditional Use Permit issued in accordance with this chapter inside the lobby or waiting area of the main entrance to the site. The permits shall be displayed at all times in a conspicuous place so that it may be readily seen by all persons entering the site. (MC 9.09.290 (D)(2)(c))

10. All City Fire, Police and Code personnel shall have unlimited and unrestricted property access for inspections of commercial cannabis businesses and facilities during business hours. (MC 9.09.290 (D)(2)(g)

11. Security surveillance cameras and a video recording system must be installed to monitor all doors into and out of the buildings on the site, the parking lot, loading areas, and all exterior sides of the property adjacent to the public rights-of-way. The camera and recording systems must be of adequate quality, color rendition, and resolution to allow the identification of any individual present on the site. The recording system must be capable of exporting the recorded video in standards MPEG formats to another common medium, such as a DVD or USB drive. (MC 9.09.290 (E)(12)(a))

12. All windows on the building that houses the Cannabis Facility shall be appropriately secured and all cannabis and marijuana securely stored.

13. A copy of all pages of these conditions shall be included in the construction drawing package.

14. The commercial cannabis operation shall have a valid Commercial Cannabis Business Permit and shall comply with all requirements of Moreno Valley Municipal Code Chapter 5.05 prior to issuance of occupancy permits

15. No person associated with this commercial cannabis dispensary shall cause or permit the sale, dispensing or consumption of alcoholic beverages or the sale of tobacco products on or within 50 feet of the premises of a cannabis business. (MC 9.09.290 (D)(2)(b))

16. All operations conducted and equipment used must be in compliance with all applicable state and local regulations, including all building, electrical and fire codes. (MC 9.09.290 (E)(7)(b))

17. Professionally and centrally monitored fire, robbery, and burglar alarm systems must be installed and maintained in good working condition. The alarm system must include a private security company that is required to respond to every alarm. (MC 9.09.290 (E)(12)(b))

18. The site has been approved for a commercial cannabis dispensary, located at 24095 Sunnymead Boulevard, within an existing building, (approximately 1,474 square feet) per the approved plans and per the requirements of the City's Municipal Code (MC) Section 9.09.290 Commercial Cannabis activities, 9.09.293 Cannabis Business locations and use, and 5.05 Commercial Cannabis Activity. A change or modification to the interior design/set-up, exterior elevations or business process (including security procedures) shall require separate review and approval. For a Conditional Use Permit, violation may result in revocation of a Conditional Use Permit per MC Section 9.09.290 F and 9.02.260.

19. A licensee conducting a commercial cannabis dispensary shall meet all applicable operational requirements for retail/commercial cannabis dispensaries. (MC 9.09.290 (E)(4)

20. No person shall smoke, ingest, or otherwise consume cannabis in any form on, or within twenty (20) feet of, the dispensary site. (MC 9.09.290 (E)(4)(f))

21. The commercial cannabis dispensary shall have designated locked storage on the dispensary property for after-hours storage of medical and adult use recreational cannabis and cannabis infused products. All cannabis and cannabis infused products shall be stored at the dispensary property in secured rooms that are completely enclosed or in a safe that is bolted to the floor (with accommodations in place at all times to allow for and facilitate unlimited/unrestricted access throughout the premises by emergency service personnel). (MC 9.09.290 (E)(4)(c))

22. Waste and storage and disposal of all cannabis and marijuana products shall meet all applicable state and local health regulation. (MC 9.09.290 (E)(13)

23. The cannabis license and the Conditional Use Permit, apply only to the 1,474 square foot existing building at 24095 Sunnymead Boulevard. No use of any other tenant space, outside of the 1,474 square foot existing building is allowed per Conditional Use Permit PEN20-0093.

24. Daily hours of operation for the dispensary may start no earlier than 6:00 am and end no later than 10:00 pm, Sunday through Saturday.

25. No commercial cannabis dispensary owner or employee shall: (i) cause or permit the sale, distribution, or consumption of alcoholic beverages on the dispensary property (ii) hold or maintain a license form the State Division of Alcoholic Beverage

Control for the sale of alcoholic beverages; or (iii) operate a business on or adjacent to the dispensary property that sells alcoholic beverages. No alcoholic beverages shall be allowed or stored on the dispensary property. (MC 9.09.290 (E) (4)(g))

26. No cannabis or marijuana materials or products shall be visible from the exterior of any structure, facility, or building in which commercial cannabis dispensaries are being conducted. All commercial cannabis dispensaries must take place within a fully enclosed, secured and permanent structure (with accommodations in place at all times to allow for and facilitate unlimited/unrestricted access throughout the premises by emergency service personnel). (MC 9.09.290 (E)(6)(c)

27. The premises must be equipped with an odor absorbing ventilation and exhaust system so that odor generated inside the Cannabis Business that is distinctive to its operation is not detected outside the Cannabis Business, anywhere on adjacent property or public rights-of-way, on or about any exterior or interior common area walkways, hallways, breeze-ways, foyers, lobby areas, or any other areas available for common use by tenants or the visiting public, or within any other unit located within the same building as the Cannabis Business. As such, Cannabis Businesses must install and maintain the following equipment or any other equipment which the Local Licensing Authority determines has the same or better effectiveness:

    a. An exhaust air filtration system with odor control that prevents internal odors from being emitted externally; or

    b. An air system that creates negative air pressure between the Cannabis Businesses' interior and exterior so that the odors generated inside the Cannabis Business are not detectable outside the Cannabis Business.

28. All Cannabis heating, ventilation, air conditioning and odor control plans and blue prints shall be stamped by a Licensed HVAC Mechanical Engineer.

29. All window arrays, doors and associated framing systems shall be renovated to install new glazing compounds and seals.

30. Automatic closures on all interior and exterior doors shall be installed.

31. All interior and exterior door seals shall be replaced and adjusted.

32. All roof venting, wall penetrations, panel joints etc. shall be sealed

33. Air curtains shall be installed on all exterior doors.

34. Two secured parking spaces, identified on a plot plan shall be located convenient the required secured area of each facility to be used by secured transfer vehicles

involved in the couriering or dispensing of cannabis materials products to and from the facility and for use by any secured vehicle commissioned for the transfer of currency to and from the facility. (MC 9.09.290 (E)(9)(f))

35. Licensee shall prohibit loitering by individuals outside the licensed premises or anywhere on the property. (MC 9.09.290 (E) (14) (c))

36. Licensee shall remove any graffiti from the licensed premises within twenty -four (24) hours of its occurrence, or as requested by the city. (MC 9.09.290 (E) (14) (d))

37. Exterior landscaping within ten (10) feet of a licensed premises shall be designed, installed and maintained free of locations which could reasonably be used by persons to conceal themselves and/or to enable undesirable activity. The design and maintenance practices shall give appropriate consideration to both natural and artificial illumination. (MC 9.09.290 (E)(8)(c))

38. Prior to issuance of any building permits, final landscaping and irrigation plans shall be submitted for review and approval of any new or repaired landscaping by the Planning Division designed per the City's Municipal Code 9.17.

39. Prior to issuance of Certificates of Occupancy or building final, the required landscaping and irrigation improvements shall be installed, and inspected and approved by the Planning Division. (DC 9.03.040)

40. Prior to issuance of Certificates of Occupancy or building final, the applicant shall cause the slurry sealing and restriping of the parking lot that shall be inspected and approved by the Planning and Building Divisions.

41. The parking lot lighting shall be maintained in good repair and shall comply with the Municipal Code lighting standards and the Security Plan at all times.

42. Prior to approval of tenant improvement plans, a detailed, on-site, computer generated, point- by-point comparison lighting plan, including exterior building, parking lot, and landscaping lighting, shall be submitted as part of the Building and Safety Plan Check submittal for review and approval. The lighting plan shall be generated on the plot plan and shall be integrated with the final landscape plan. The plan shall indicate the manufacturer's specifications for light fixtures used and shall include style, illumination, location, height and method of shielding. The lighting shall be designed in such a manner so that it meets the lighting standards in the Cannabis Ordinance 932. After the third plan check review for lighting plans, an additional plan check fee will apply. (MC 9.08.100, DG) Lighting shall comply with the provisions of MC Section 9.08.100 including fixture type, wattage illumination levels and shielding. (MC 9.09.290 (E)(10))

43. The commercial cannabis operation shall comply with all requirements of Moreno

Valley Municipal Code Chapter 5.05 prior to issuance of occupancy permits.

44. Prior to Building Permit or Certificate of Occupancy, the process for any transfer of product or currency shall be identified in an updated Security Plan to be reviewed and approved by the Planning Division. (MC 9.09.290 (D)(2)(f))

45. The Security Plan on file with the City of Moreno Valley shall remain in effect as long as the established use is in operation. Any changes, additions, removal or modifications to the plan shall be submitted to the City for review and inclusion in the Conditional Use Permit file.

46. Prior to approval of tenant improvement plans, the applicant shall submit plans detailing provisions for controlled/secured access into and out of the dispensary area.

47. Persons under the age of twenty-one (21) years shall not be allowed on the premises. It shall be unlawful and a violation of this chapter for any person to employ any person at a commercial cannabis business who is not at least twenty-one (21) years of age.

48. All parking stalls shall be designed consistent with the design standards within section 9.11.080 of the Municipal Code.

Building Division

49. The proposed non-residential project shall comply with the latest Federal Law, Americans with Disabilities Act, and State Law, California Code of Regulations, Title 24, Chapter 11B for accessibility standards for the disabled including access to the public way, access to the site, parking, exits, bathrooms, work spaces, etc.

50. Contact the Building Safety Division for permit application submittal requirements.

51. Any construction within the city shall only be as follows: Monday through Friday seven a.m. to seven p.m(except for holidays which occur on weekdays), eight a.m. to four p.m.; weekends and holidays (as observed by the city and described in the Moreno Valley Municipal Code Chapter 2.55), unless written approval is first obtained from the Building Official or City Engineer.

52. Building plans submitted shall be signed and sealed by a California licensed design professional as required by the State Business and Professions Code.

53. The proposed development shall be subject to the payment of required development fees as required by the City's current Fee Ordinance at the time a building application is submitted or prior to the issuance of permits as determined

by the City.

54. The proposed project will be subject to approval by the Eastern Municipal Water District and all applicable fees and charges shall be paid prior to permit issuance. Contact the water district at 951.928.3777 for specific details.

55. The proposed project's occupancy shall be classified by the Building Official and must comply with exiting, occupancy separation(s) and minimum plumbing fixture requirements. Minimum plumbing fixtures shall be provided per the 2019 California Plumbing Code, Table 422.1. The occupant load and occupancy classification shall be determined in accordance with the California Building Code.

56. All remodeled structures shall be designed in conformance to the latest design standards adopted by the State of California in the California Building Code, (CBC) Part 2, Title 24, California Code of Regulations including requirements for allowable area, occupancy separations, fire suppression systems, accessibility, etc. The current code edition is the 2019 CBC.

57. Prior to permit issuance, every applicant shall submit a properly completed Waste Management Plan (WMP), as a portion of the building or demolition permit process. (MC 8.80.030)

ECONOMIC DEVELOPMENT DEPARTMENT (EDD)

58. New Moreno Valley businesses may adopt a "First Source" approach to employee recruitment that gives notice of job openings to Moreno Valley residents for one week in advance of the public recruitment.

59. New Moreno Valley businesses are encouraged to hire local residents.

60. New Moreno Valley businesses may utilize the workforce recruitment services provided by the Moreno Valley Employment Resource Center ("ERC").

    The ERC offers no cost assistance to businesses recruiting and training potential employees. Complimentary services include:

    • Job Announcements
    • Applicant testing / pre-screening
    • Interviewing
    • Job Fair support
    • Training space

FIRE DEPARTMENT

Fire Prevention Bureau

61. Prior to issuance of Certificate of Occupancy or Building Final, all commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numerals shall be a minimum of twelve inches in height. (CFC 505.1, MVMC 8.36.060[I])

62. Final fire and life safety conditions will be addressed when the Fire Prevention Bureau reviews building plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code (CFC), and related codes, which are in effect at the time of building plan submittal.

63. The Fire Code Official is authorized to enforce the fire safety during construction requirements of Chapter 33. (CFC Chapter 33 & CBC Chapter 33)

64. Prior to issuance of a Certificate of Occupancy or Building Final, a "Knox Box Rapid Entry System" shall be provided. The Knox-Box shall be installed in an accessible location approved by the Fire Code Official. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel. (CFC 506.1)

65. Where delayed egress systems are to be installed an approved fire sprinkler and an automatic smoke detection system shall be installed in accordance with the California Fire Code.

PUBLIC WORKS DEPARTMENT

Land Development

66. The developer shall comply with all applicable City ordinances and resolutions including the City's Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). [MC 9.14.010]

67. The final approved conditions of approval (COAs) issued and any applicable Mitigation Measures by the Planning Division shall be photographically or electronically placed on mylar sheets and included in the Grading and Street Improvement plans.

68. The developer shall monitor, supervise and control all construction related activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:
(a) Removal of dirt, debris, or other construction material deposited on any public

street no later than the end of each working day.
(b) Observance of working hours as stipulated on permits issued by the Land Development Division.
(c) The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.
(d) All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements during the grading operations.
Violation of any condition, restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedy as noted in City Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as it has been determined that all operations and activities are in conformance with these conditions.

69. The developer shall protect downstream properties from damage caused by alteration of drainage patterns (i.e. concentration or diversion of flow, etc). Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. [MC 9.14.110]

70. This project shall submit civil engineering design plans, reports and/or documents (prepared by a registered/licensed civil engineer) for review and approval by the City Engineer per the current submittal requirements, prior to the indicated threshold or as required by the City Engineer. The submittal consists of, but is not limited to, the following:
    a. Precise grading w/ erosion control plan prior to Grading permit issuance;
    b. Final drainage study prior to grading plan approval;
    c. Legal Documents (e.g., LOT LINE ADJUSTMENT, etc.) prior to OCCUPANCY RELEASE;
    d. As-Built revision for all plans prior to Occupancy release.

<u>Prior to Grading Plan Approval</u>

71. Resolution of all drainage issues shall be as approved by the City Engineer.

72. A final detailed drainage study (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer. The study shall include, but not be limited to: existing and proposed hydrologic conditions as well as hydraulic calculations for all drainage control devices and storm drain lines. The study shall analyze 1, and 24-hour duration events for the 10 and 100-year storm events, unless otherwise approved by the City Engineer [MC 9.14.110(A.1)]. A digital (pdf) copy of the approved drainage study shall be submitted to the Land Development Division.

73. Grading plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

74. The developer shall select Low Impact Development (LID) Best Management Practices (BMPs) designed per the latest version of the Water Quality Management Plan (WQMP) - a guidance document for the Santa Ana region of Riverside County.

75. The developer shall pay all remaining plan check fees.

76. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared in conformance with the State's current Construction Activities Storm Water General Permit. A copy of the current SWPPP shall be kept at the project site and be available for review upon request.

77. Any proposed trash enclosure shall include a solid cover (roof) and sufficient size for dual bin (one for trash and one for recyclables). The architecture shall be approved by the Planning Division and any structural approvals shall be made by the Building & Safety Division.

Prior to Grading Permit

78. A receipt showing payment of the Area Drainage Plan (ADP) fee to Riverside County Flood Control and Water Conservation District shall be submitted. [MC 9.14.100(O)]

79. The developer shall pay current Development Impact Fee (DIF) and Transportation Uniform Mitigation Fee (TUMF) fees adopted by the City Council. [Ord. 695 § 1.1 (part), 2005] [MC 3.38.030, 040, 050]

80. A digital (pdf) copy of all approved grading plans shall be submitted to the Land Development Division.

81. Security, in the form of a cash deposit (preferable), bond or letter of credit shall be submitted as a guarantee of the implementation and maintenance of erosion control measures. At least twenty-five (25) percent of the required security shall be in the form of a cash deposit with the City. [MC 8.21.160(H)]

82. Security, in the form of a cash deposit (preferable), bond or letter of credit shall be submitted as a guarantee of the completion of the grading operations for the project. [MC 8.21.070]

83. The developer shall pay all applicable inspection fees.

Prior to Map Approval

84. Lot Line Adjustment documents (prepared by a registered civil engineer and/or licensed surveyor) shall be submitted for review and approved by the City Engineer per the current submittal requirements, prior to Occupancy.

Prior to Improvement Plan Approval

85. The developer is required to bring any existing access ramps adjacent to and fronting the project to current ADA (Americans with Disabilities Act) requirements. However, when work is required in an intersection that involves or impacts existing access ramps, all access ramps in that intersection shall be retrofitted to comply with current ADA requirements, unless otherwise approved by the City Engineer.

86. The developer shall submit clearances from all applicable agencies, and pay all applicable plan check fees.

87. The hydrology study shall be designed to accept and properly convey all off-site drainage flowing onto or through the site. In the event that the City Engineer permits the use of streets for drainage purposes, the provisions of current City standards shall apply. Should the quantities exceed the street capacity or the use of streets be prohibited for drainage purposes, as in the case where one travel lane in each direction shall not be used for drainage conveyance for emergency vehicle access on streets classified as minor arterials and greater, the developer shall provide adequate facilities as approved by the City Engineer. [MC 9.14.110 A.2]

88. All public improvement plans (prepared by a licensed/registered civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

89. Any missing or deficient existing improvements along the project frontage shall be constructed or secured for construction.

90. All dry and wet utilities shall be shown on the plans and any crossings shall be potholed to determine actual location and elevation. Any conflicts shall be identified and addressed on the plans. The pothole survey data shall be submitted to Land Development with the public improvement plans for reference purposes only. The developer is responsible to coordinate with all affected utility companies and bear all costs of any utility relocation.

Prior to Encroachment Permit

91. A digital (pdf) copy of all approved plans shall be submitted to the Land

Development Division.

92. All applicable inspection fees shall be paid.

93. Any work performed within public right-of-way requires an encroachment permit.

Prior to Building Permit

94. For Commercial/Industrial projects, the owner may have to secure coverage under the State's General Industrial Activities Storm Water Permit as issued by the State Water Resources Control Board.

95. A walk through with a Land Development Inspector shall be scheduled to inspect existing improvements within public right of way along project frontage. Any missing, damaged or substandard improvements including ADA access ramps that do not meet current City standards shall be required to be installed, replaced and/or repaired. The applicant shall post security to cover the cost of the repairs and complete the repairs within the time allowed in the public improvement agreement used to secure the improvements.

96. Certification to the line, grade, flow test and system invert elevations for the water quality control BMPs shall be submitted for review and approved by the City Engineer as required.

Prior to Occupancy

97. All outstanding fees shall be paid.

98. All required as-built plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

99. For commercial, industrial and multi-family projects, in compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (NPDES) as mandated by the Federal Clean Water Act, this project is subject to the following requirements:

a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation, maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.

i. Participate in the mail ballot proceeding in compliance with Proposition 218, for the Common Interest, Commercial, Industrial and Quasi-Public Use

NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or

ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.

b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. [California Government Code & Municipal Code]

100. The applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:

a. Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP).

b. Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted for review and approved by the City Engineer.

Special Districts Division

101. The existing parkway/median along the frontage of the project shall be brought to current City Standards. Improvements may include but are not limited to: plant material, irrigation, and hardscape.

102. The ongoing maintenance of any landscaping required to be installed behind the curb shall be the responsibility of the property owner.

103. Any damage to existing landscape areas maintained by the City of Moreno Valley due to project construction shall be repaired/replaced by the Developer, or Developer's successors in interest, at no cost to the City of Moreno Valley.

104. The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services), Zone C (Arterial Street Lighting), and Zone S (Sunnymead Boulevard Maintenance). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C and the annual parcel charge for Zone S for operations and capital improvements.

Transportation Engineering Division

105. All project driveways shall conform to Section 9.11.080, and Table 9.11.080-14 of the City's Development Code – Design Guidelines and City of Moreno Valley

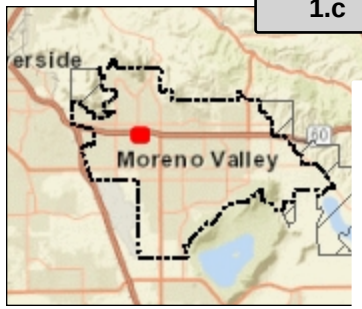
Standard Plans No. MVSI-112A~D-0 for commercial driveway approaches.

106. All proposed on-site traffic signing and striping should be accordance with the latest California Manual on Uniform Traffic Control Devices (CAMUTCD).

107. Prior to final approval of any landscaping or monument sign plans, the project plans shall demonstrate that sight distance at the project driveways conforms to City Standard Plan No. MVSI-164A, B, C-0.

108. Bicycle parking should be provided near the main entrance of the business. Bicycle racks should be U-shaped and be installed per City guidelines.

Aerial Map



Legend

Master Plan of Trails
- Bridge
- Improved
- Multiuse
- Proposed
- Regional
- State

Road Labels

Parcels

City Boundary

Sphere of Influence

Image Source: Nearmap

Notes:

PEN20-0093

631.0 0 315.48 631.0 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

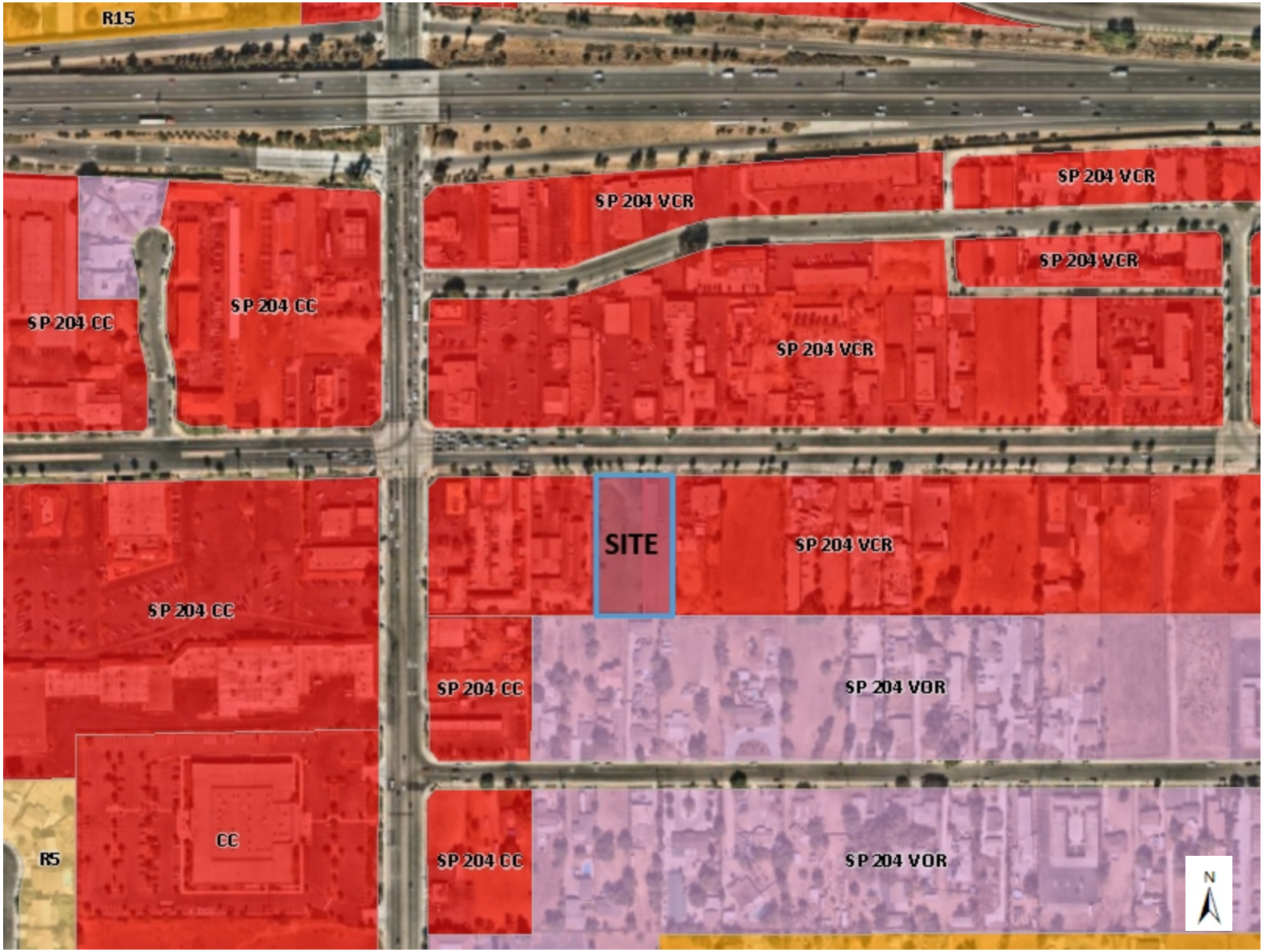
Print Date: 1/21/2021

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Attachment: Aerial Map (4308 : PEN20-0093 - Its 420 Time)

MORENO VALLEY
WHERE DREAMS SOAR

Zoning Map



631.0 0 315.48 631.0 Feet

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Legend

Zoning

- Commercial
- Industrial/Business Park
- Public Facilities
- Office
- Planned Development
- Large Lot Residential
- Residential Agriculture 2 DU/AC
- Residential 2 DU/AC
- Suburban Residential
- Multi-family
- Open Space/Park

Master Plan of Trails

- Bridge
- Improved
- Multiuse
- Proposed
- Regional
- State

Image Source: Nearmap

Notes:

PEN20-0093

Attachment: Zoning Map (4308 : PEN20-0093 - Its 420 Time)

TENANT IMPROVEMENT FOR RD MEDIGROUP, INC.
dba IT'S 4:20 TIME

24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553

PROJECT TEAM:

TENANT:
RD MEDIGROUP, INC.
dba IT'S 4:20 TIME
24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553
CONTACT: MS. DALILA FLORES
TEL. (562) 457-8777
dalila@the4:20time.com

PROPERTY OWNER:
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CONTACT: MS. DALILA FLORES
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ARCHITECT:
AM ARCHITECTURE INC.
9741 HIBISCUS DRIVE
GARDEN GROVE, CA 92841
ARCHITECT: MR. DAVID ALBRIGHT A.I.A.
LIC.# C27455
CONTACT: MR. LOUAY AYOUB, B.A.
PRINCIPAL
TEL: (714) 397-4880
louay@amarchitecture.biz

ELECTRICAL ENGINEERS:
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2705 TOWNE AVE., #C
POMONA, CA 91767
CONTACT: MR. IRWAN YOWANTO P.E.
TEL: (909) 626-6291

CONSULTANT:
CANNABIZ CONSULTING GROUP
15854 LITTLE MORONGO ROAD
DESERT HOT SPRINGS, CA 92240
CONTACT: MR. CHRISTOPHER MARTINEZ
CANNABIS CONSULTANT
TEL: (760) 899-8025
christopher@cannabizcg.com

SHEET INDEX:

ARCHITECTURAL :

ELECTRICAL :

APPLICABLE CODES:

2019 CALIFORNIA ADMINISTRATIVE CODE
2019 CALIFORNIA BUILDING CODE
2019 CALIFORNIA MECHANICAL CODE
2019 CALIFORNIA PLUMBING CODE
2019 CALIFORNIA ELECTRICAL CODE
2019 CALIFORNIA ENERGY CODE
2019 CALIFORNIA GREEN CODE
2019 CALIFORNIA FIRE CODE

PROJECT DATA:

PROJECT SCOPE:

CONVERT EXISTING 1-STORY VACANT BUILDING 1,474 S.F. TO A CCB DISPENSARY INCLUDING BUT NOT LIMITED TO:

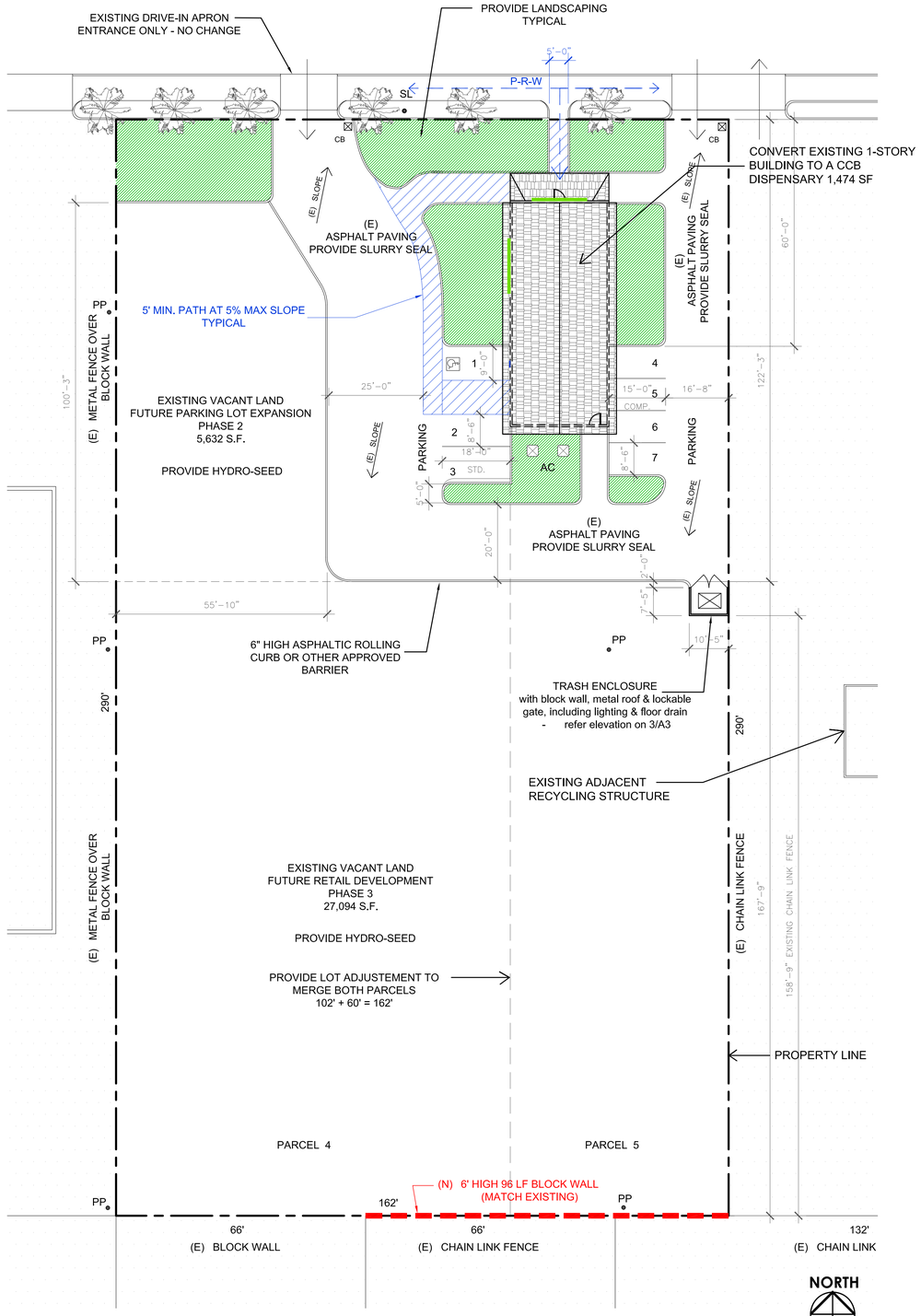
SITE IMPROVEMENT: PROVIDE DESERT LANDSCAPING, EXTERIOR BUILDING LIGHTING AND PARKING LOT LIGHTING, SIGNAGE, STUCCO PAINT, BOLLARDS, PUBLIC RIGHT AWAY ACCESSIBLE PATH, ACCESSIBLE PARKING, LOT RE-STRIPE & SLURRY SEAL, AND NEW BLOCK WALL..

BUILDING IMPROVEMENT: PAINT EXISTING STUCCO BUILDING WITH ACCENT COLOR, ADD PROVIDE ILLUMINATED LETTERING FOR SIGNAGE, SANDBLAST PORCH GROUND SURFACE, REPAIR STOREFRONT GLASS, ADD STONE VENEER...

TENANT IMPROVEMENT: PROVIDE NEW FULL HEIGHT WALL PARTITIONS, CASEWORK, DOORS/WINDOWS, NEW INTERIOR FINISHES, NEW ACCESSIBLE RESTROOM, PROVIDE NEW HARD LID CEILING AND RECESSED LIGHTING, NEW MECHANICAL & PLUMBING & POWER SYSTEM ETC...

REVIEW AGENCY :	CITY OF MORENO VALLEY COMMUNITY DEVELOPMENT DEPARTMENT PLANNING DIVISION 14177 FREDERICK STREET MORENO VALLEY, CA 92552-0805
OCCUPANCY GROUP :	B + M
CONSTRUCTION TYPE :	TYPE FIVE NON-RATED
FIRE SPRINKLERS :	TBD
FIRE ALARM:	TBD
NUMBER OF STORIES :	1-STORY
YEAR BUILT :	-
ZONING :	C-COMMERCIAL
PARKING :	1-STALL PER 225 S.F. 1,474 S.F. / 225 = 6.55 STALLS MIN REQUIRED 6 STALLS HAVE BEEN PROVIDED ACCESSIBLE 1 STANDARD 2 COMPACT 3
SQUARE FOOTAGE:	PARCEL 5 (290' X 60') = 17,400 S.F. (EXISTING BUILDING LOCATION) PARCEL 4 (290' X 102') = 29,580 S.F. (VACANT PARCEL) TOTAL 2-PARCELS = 46,980 S.F. AREA OF TENANT IMPROVEMENTS = 1,474 S.F.
LOT RATIO:	2-PARCELS = 46,980 S.F. BUILDING = 1,474 S.F. LANDSCAPING = 3,806 S.F. VACANT LAND = 32,726 S.F. EXISTING PAVING = 8,974 S.F.

AERIAL VIEW



SITE PLAN

LEGEND:
PP EXISTING POWER POLE
SL EXISTING STREET LIGHT
CB CATCH BASIN

AM ARCHITECTURE, INC.
Medical . Commercial . Residential
Since 2004
31 years of professional experience

9741 Hibiscus Drive
Garden Grove, CA 92841
Tel. (714) 397-4880
louay@amarchitecture.biz

CUP#: PEN20-0093
APN#: 48112005

Revisons :

Delta	Description	Date
	CUP SUBMITTAL PC1	09.07.20
	CUP RE-SUBMITTAL PC2	10.16.20
	CUP RE-SUBMITTAL PC3	11.12.20
	CUP RE-SUBMITTAL PC4	12.18.20

Project Name:

TENANT IMPROVEMENT FOR RD MEDIGROUP, INC. dba ITS 4:20 TIME

24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553

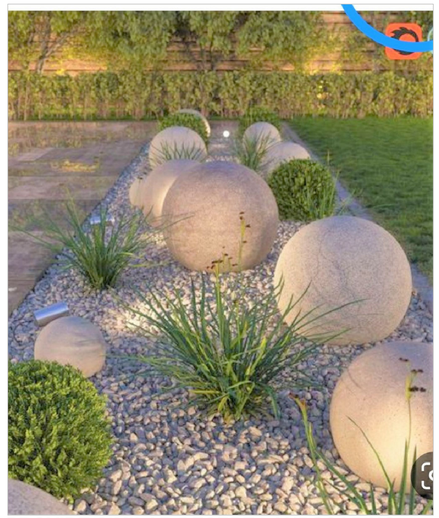
Job # :	20-409
Date :	12.18.20
Scale :	AS NOTED

Sheet Name:

TITLE SHEET/ SITE PLAN

Sheet Number:

A1



PROVIDE SIMILAR DESERT LANDSCAPING INCLUDING WHITE GRAVEL BASE WITH DECORATIVE STONES AND NATIVE PLANTATION

PROVIDE SIMILAR SIGNAGE WITH INDIVIDUAL LETTERS AND ILLUMINATED NEON GREEN - MOUNTED IN TWO LOCATIONS AT EXISTING PARAPET AND WEST SIDE OF BUILDING - FONT TBD

CITY NOTES:

1. "A RECIPROCAL ACCESS AGREEMENT" IS REQUIRED FOR THE SHARED-USE DRIVEWAY(S) UNLESS BOTH PARCELS ARE JOINED.
2. SIGHT DISTANCE AT DRIVEWAY SHALL CONFORM TO CITY OF MORENO VALLEY STANDARD NO. MVSI-164A-0, MVS1-164C-0, AND MVSI-164C-0 AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE, AND STREET IMPROVEMENT PLANS.
3. THE DESIGN AND PROPOSED LOCATION OF THE PROJECT DRIVEWAYS SHALL CONFORM TO THE CITY OF MORENO VALLEY STANDARD NO. MVSI-112C-0 FOR COMMERCIAL DRIVEWAY APPROACHES AND SECTION 9.11.080, AND TABLE 9.11.080-14 OF THE CITY'S MUNICIPAL CODE - DESIGN GUIDELINES OR AS APPROVED BY THE CITY ENGINEER.

GENERAL NOTES:

1. REFER TO SITE PLAN AND EXTERIOR ELEVATIONS AND PHOTOS FOR ADDITIONAL INFORMATION

KEY NOTES: [X]

1. NOT USED
2. PROPOSED FULL HEIGHT WALL PARTITION
3. PROPOSED GLASS DISPLAY CASE
4. PROPOSED BASE CABINET + UPPER CABINETS
5. PROPOSED 36X84 SOLID WOOD DOOR
6. PROPOSED SECURITY WINDOW
7. PROPOSED ACCESSIBLE RESTROOM
8. PROVIDE CEILING MOUNTED CARBON FILTERS
9. EXISTING 7" THICK POST INCLUDING STUCCO – PROVIDE STONE VENEER
10. EXISTING STOREFRONT WINDOWS TO REMAIN
11. PROVIDE SECURITY S.S. ROLL–UP DOORS

FINISHES:

1. PROVIDE NEW FLOORING, CEILING, PAINTING, CASEWORK ETC...

MECHANICAL:

1. PROVIDE CARBON FILTERS AND PROPER MECHANICAL FILTRATION AND AIR CONDITIONING INCLUDING EXHAUST AS DETERMINED BY MECHANICAL ENGINEER

PLUMBING:

1. PROVIDE PLUMBING FIXTURES AT RESTROOM

ELECTRICAL:

1. PROVIDE NEW EXTERIOR AND INTERIOR LIGHTING AND POWER

LEGEND:

EXISTING EXTERIOR WOOD STUD WALL WITH STUCCO

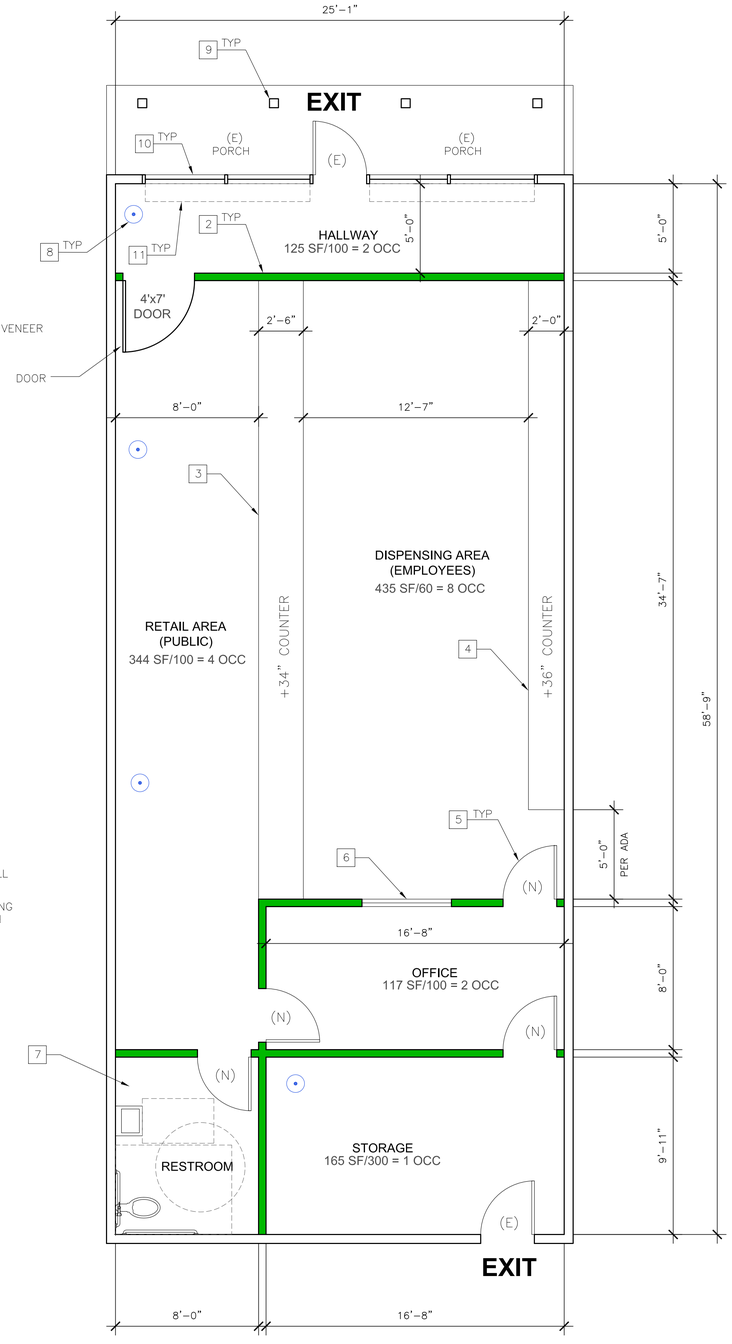
PROPOSED NON–RATED NON–BEARING FULL HEIGHT WOOD STUD PARTITION

PROVIDE CARBON FILTERS (4) – LOCATE WHERE REQUIRED

OCCUPANT LOAD

NAME	OCCUPANTS
HALLWAY	2
RETAIL	4
DISPENARY	8
OFFICE	2
STORAGE	1
RESTROOM	1
TOTAL	18 OCC.

1–EXIT REQUIRED
2–EXITS PROVIDED



NORTH

FLOOR PLAN | SCALE: 1/4" = 1'-0" | 1

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	CUP RE-SUBMITTAL PC4	12.18.20

Project Name:

TENANT IMPROVEMENT FOR RD MEDIGROUP, INC. dba ITS 4:20 TIME

24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553

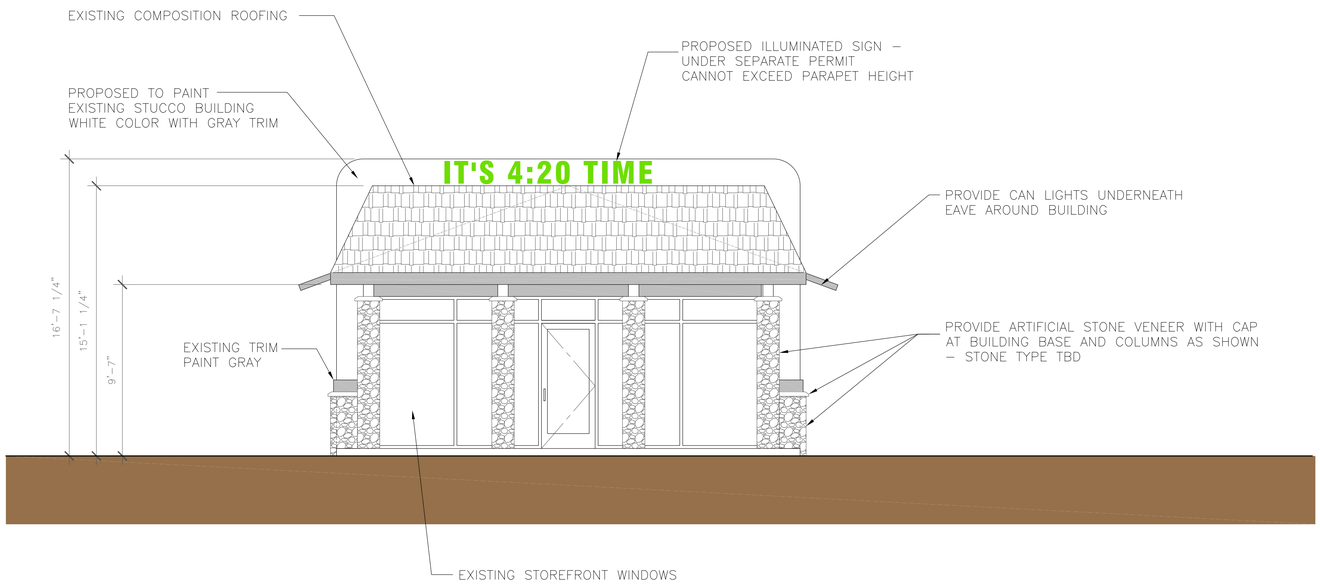
Job # :	20-409
Date :	12.18.20
Scale :	AS NOTED

Sheet Name:

FLOOR PLAN

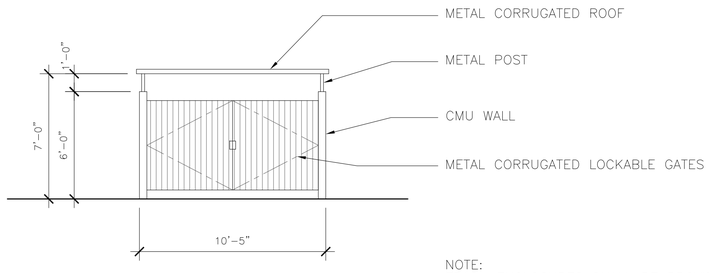
Sheet Number:

A2



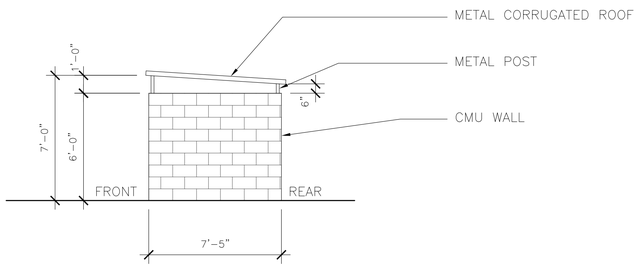
NORTH ELEVATION

SCALE: 1/4" = 1'-0" | 1



NOTE:
TRASH ENCLOSURES SHALL BE PROVIDED WITH SUFFICIENT LIGHTING AND A FLOOR DRAIN

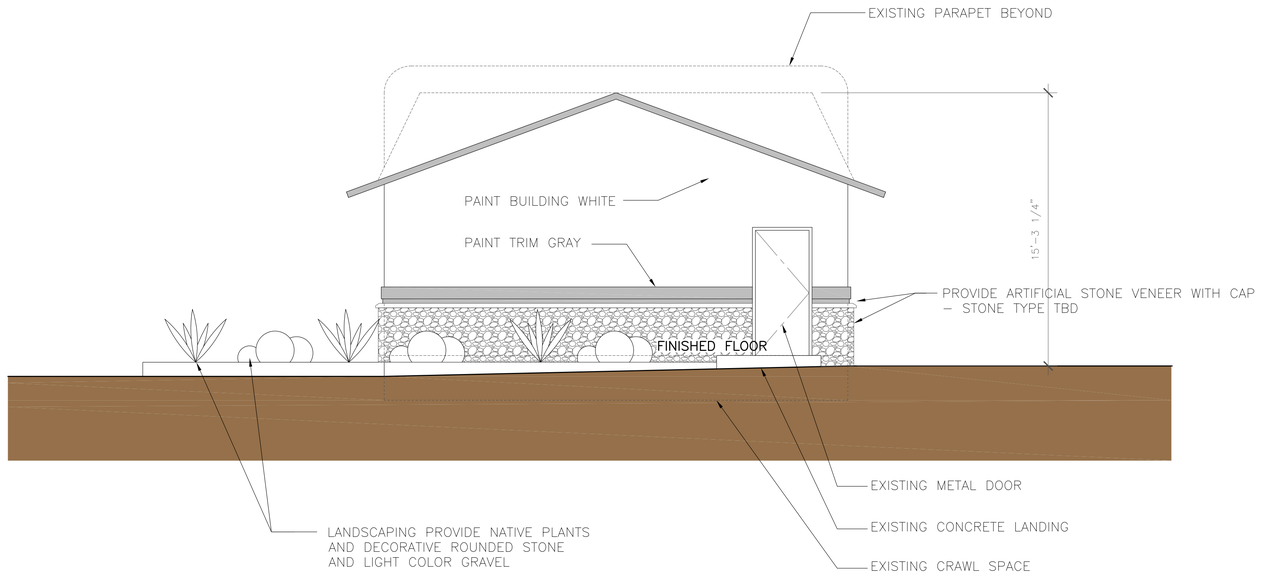
FRONT ELEVATION



SIDE ELEVATION

TRASH ENCLOSURE

SCALE: 1/4" = 1'-0" | 3



SOUTH ELEVATION

SCALE: 1/4" = 1'-0" | 2

AM ARCHITECTURE, INC.
Medical . Commercial . Residential
Since 2004
31 years of professional experience

9741 Hibiscus Drive
Garden Grove, CA 92841
Tel. (714) 397-4880
louay@amarchitecture.biz

CUP#: PEN20-0093
APN#: 48112005

Revisons :

Delta	Description	Date
	CUP SUBMITTAL PC1	09.07.20
	CUP RE-SUBMITTAL PC2	10.16.20
	CUP RE-SUBMITTAL PC3	11.12.20
	CUP RE-SUBMITTAL PC4	12.18.20

Project Name:

TENANT IMPROVEMENT FOR
RD MEDIGROUP, INC.
dba ITS 4:20 TIME

24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553

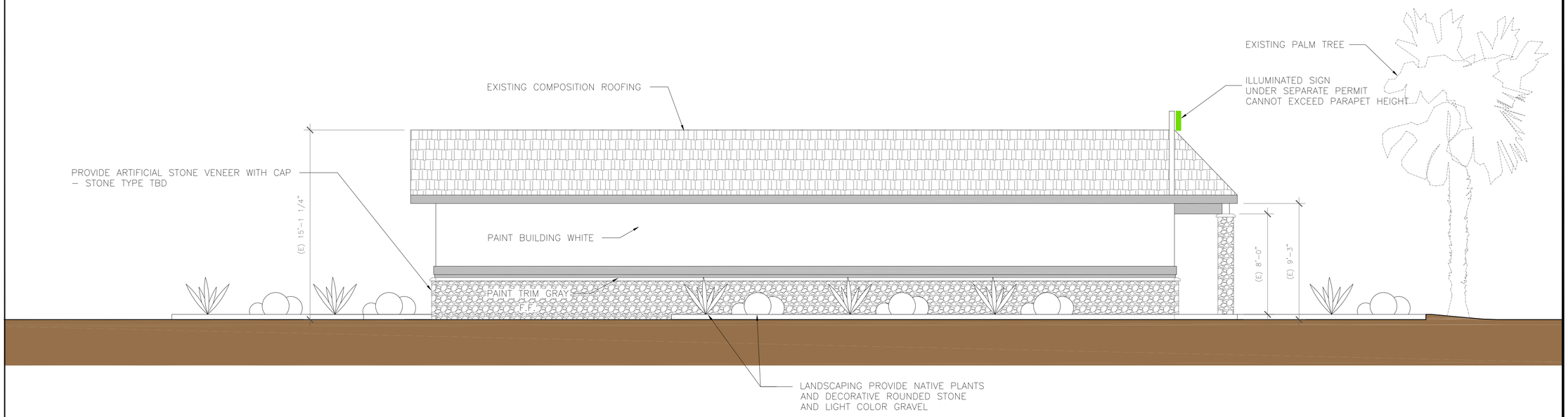
Job # :	20-409
Date :	12.18.20
Scale :	AS NOTED

Sheet Name:

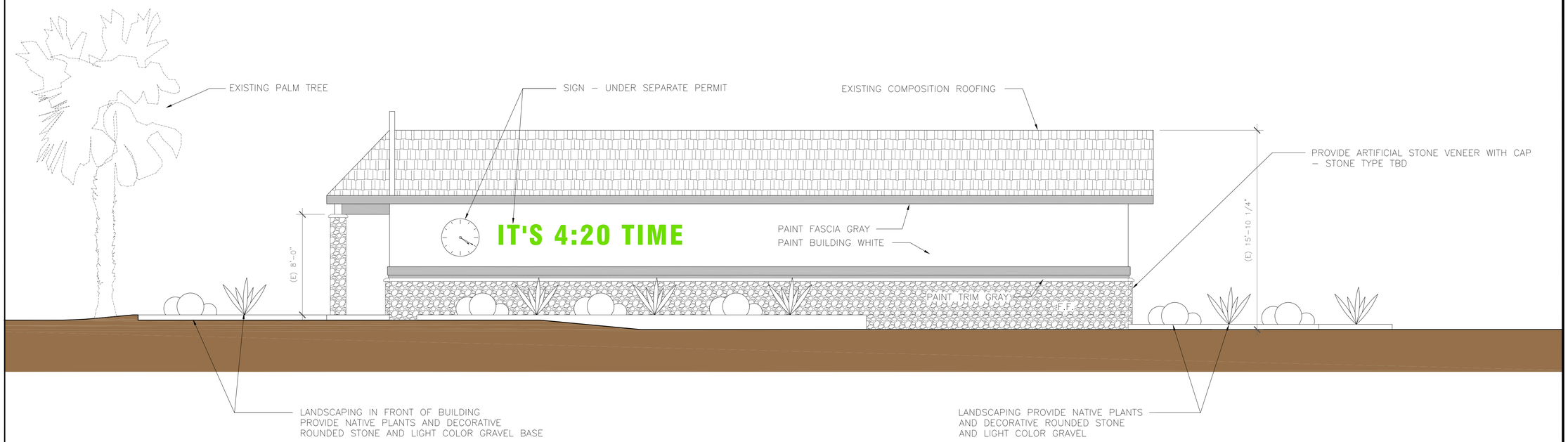
NORTH & SOUTH ELEVATIONS

Sheet Number:

A3



EAST ELEVATION | SCALE: 1/4" = 1'-0" | 1



WEST ELEVATION | SCALE: 1/4" = 1'-0" | 2

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TENANT IMPROVEMENT FOR
RD MEDIGROUP, INC.
dba ITS 4:20 TIME
24095 SUNNYMEAD BLVD.
MORENO VALLEY, CA 92553

Job # :	20-409
Date :	12.18.20
Scale :	AS NOTED

Sheet Name:

EAST & WEST ELEVATIONS

Sheet Number:

A4

City of Moreno Valley
Community Development Department
Planning Division
City Hall Council Chamber
14177 Frederick Street
Moreno Valley, CA 92553

NOTICE OF PUBLIC HEARING (VIA TELECONFERENCE ONLY)

PURSUANT TO COVID-19 GOVERNOR EXECUTIVE ORDER N-29-20

Notice of Teleconferenced Public Hearing before the Planning Commission of City of Moreno Valley:

DATE & TIME: February 11, 2021 at 7:00 P.M. **VIA TELECONFERENCE ONL**

COVID-19 TELECONFERENCE INSTRUCTIONS:
For Teleconference Meeting public participation instructions please see agenc
http://morenovalleyca.iqm2.com/Citizens/default.aspx

PROJECT LOCATION: 24085 and 24095 Sunnymead Boulevard, on the s side of Sunnymead Boulevard between Heacock Street and Indian Street (Al 481-120-004 and 481-120-005) in District 1.

CASE NUMBER(s): PEN20-0093 - Conditional Use Permit

CASE PLANNER: Sean P. Kelleher, Senior Planner (951) 413 3215 seanke@moval.org

<APN>
<Property Owner>
<Street Address>
<City, State, Zip>

NOTICE OF PUBLIC HEARING

PROPOSAL: Applicant is requesting approval of a Conditional Use Permit for a new retail cannabis dispensary, "It's 4:20 Time," locate within an existing building at 24085 and 24095 Sunnymead Boulevard.

ENVIRONMENTAL DETERMINATION: This project is a retail use within an existing single story building. As designed and conditionec this project is exempt from the provisions of the California Environmental Quality Act (CEQA) under CEQA Guidelines Section 1533 for In-Fill Development Projects.

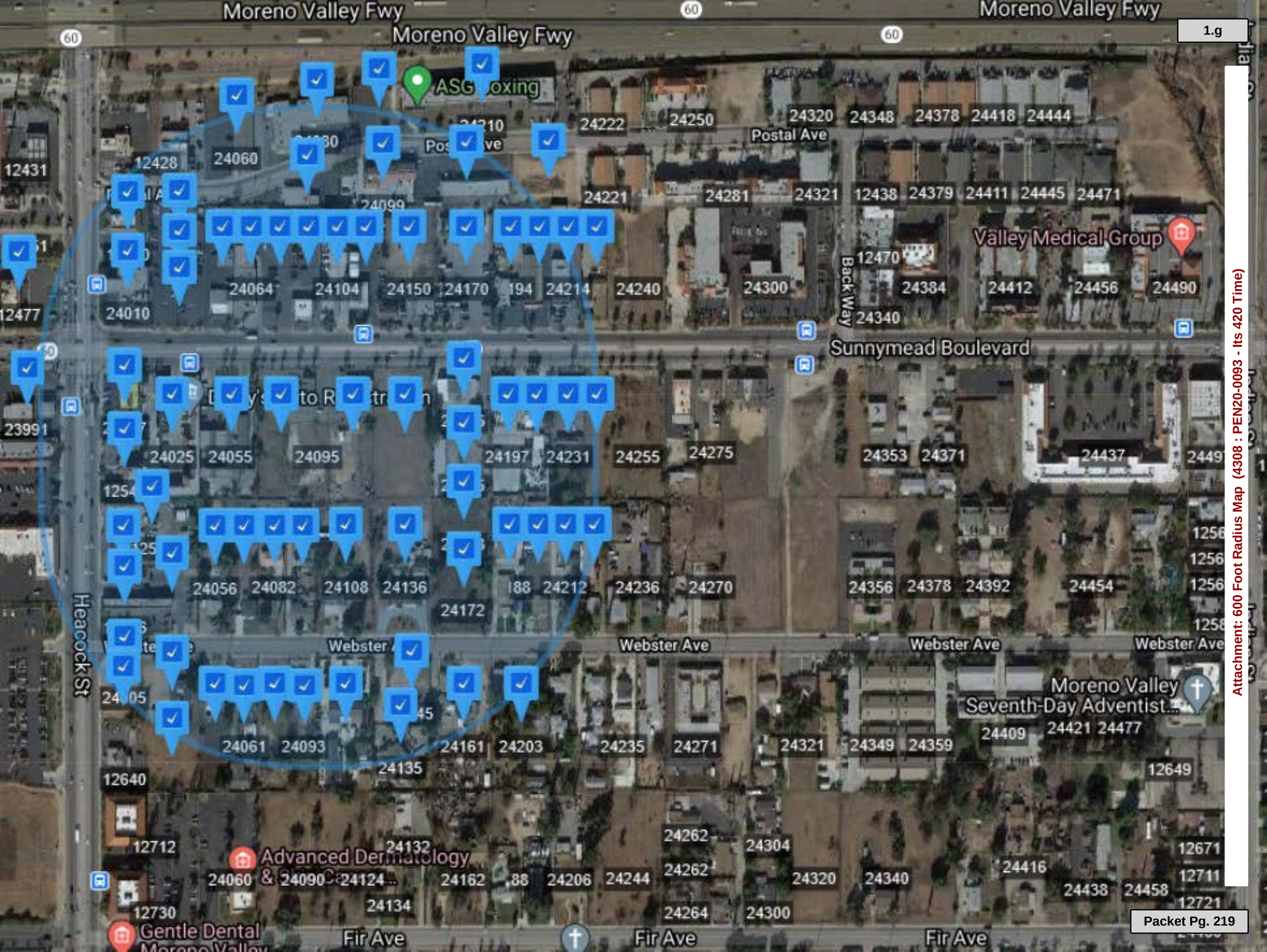
PUBLIC HEARING: All interested parties will be provided an opportunity to submit oral testimony during the teleconferenced Publi Hearing and/or provide written testimony during or prior to the teleconferenced Public Hearing. The application file and relate environmental documents may be inspected by appointment at the Community Development Department at 14177 Frederick Stree Moreno Valley, California by calling (951) 413-3206 during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday

COVID-19 – IMPORTANT NOTICES: Please note that due the COVID-19 pandemic situation, staff will attempt to make reasonabl arrangements to ensure accessibility to inspect the aforementioned records. **In addition, special instructions on how to effectivel participate in the teleconferenced Public Hearing, as approved by Governor Executive Order N-29-20, will be posted a http://morenovalleyca.iqm2.com/Citizens/default.aspx and will be described in the Planning Commission agenda.**

PLEASE NOTE: The Planning Commission may consider and approve changes to the proposed items under consideration during t teleconferenced Public Hearing.

GOVERNMENT CODE § 65009 NOTICE: If you challenge any of the proposed actions taken by the Planning Commission in court, y may be limited to raising only those issues you or someone else raised during the teleconferenced Public Hearing described in t notice, or in written correspondence delivered to the Planning Division of the City of Moreno Valley during or prior to, the teleconferenc Public Hearing.

Upon request and in compliance with the Americans with Disabilities Act of 1990, any person with a disability who requires a modification c accommodation in order to participate in a meeting should direct such request to James Verdugo, ADA Coordinator, at 951.413.3350 at leas 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.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Moreno Valley Fwy
Moreno Valley Fwy
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ASG Boxing
Postal Ave
Back Way
Valley Medical Group
Sunnymead Boulevard
Webster Ave
Webster Ave
Webster Ave
Webster Ave
Heacock St
Advanced Dermatology & Cosmetic...
Moreno Valley Seventh-Day Adventist...
Gentle Dental Moreno Valley
Fir Ave
Fir Ave
Fir Ave
12431
12428
24060
24222
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24418
24444
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24300
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Attachment: 600 Foot Radius Map (4308 : PEN20-0093 - Its 420 Time)

PLANNING COMMISSION

STAFF REPORT

Meeting Date: February 11, 2021

A PLOT PLAN FOR THE DEVELOPMENT OF A NEW 5,000 SQUARE FOOT GOLF COURSE CLUBHOUSE BUILDING WITH 1,950 SQUARE FEET OF OUTDOOR SEATING AREA AT THE EXISTING RANCHO DEL SOL GOLF COURSE.

Case:	PEN20-0060 Plot Plan
Applicant:	Jonathan Slager of Bridge Investment Group
Property Owner	ROCIII CA Belago, LLC
Representative	Dave Jorgensen of Bridge Investment Group
Location:	28095 John F Kennedy Drive, Assessor's Parcel Number 304-100-007
Case Planner:	Gabriel Diaz
Council District:	4
Proposal	A Plot Plan for the development of a new 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course.

SUMMARY

The applicant, Jonathan Slager of Bridge Investment Group, is requesting approval of a Plot Plan to construct a new 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course. The project is situated on property located at 28095 John F Kennedy Drive, within Specific Plan 193 Golf Course (SP193GC) District.

PROJECT

The applicant is proposing the construction of a new 5,000 square foot, single story, golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course property formally the Moreno Valley Ranch Golf Course. The new clubhouse building will include a golf shop, offices, kitchen, restaurant with dining area and bar, restroom facilities, storage, and mechanical room. The new clubhouse will replace the existing clubhouse building that is nonoperational at this time. The applicant is considering removal of the second floor of the existing clubhouse building which will require submittal of a future Planning application. In addition, the current temporary portable clubhouse building in use will be removed once the permanent clubhouse building has been built and issued a certificate of occupancy.

Site/Surrounding Area

The project site is located at 28095 John F Kennedy Drive just east of the intersection of John F Kennedy Drive and Moreno Beach Drive. The site is zoned Specific Plan 193 Golf Course (GC) District. The adjacent land uses and current zoning consists of existing single family residences located to the north zoned Specific Plan 193 Medium Low (ML) District and Specific Plan 193 Medium or Commercial (M or C) District, existing single family residences and open space to the east zoned Specific Plan 193 Medium Low (ML) District, and a mix of single family residences and open space to the south in Specific Plan 193 Medium Low (ML) District and Specific Plan 193 Open Space (NOS-A) District.

Access/Parking

The project site is accessible from the existing driveway on John F Kennedy Drive. The project site has an existing functional parking lot, used by the Rancho Del Sol 18-hole golf course. The existing parking lot will be retrofitted to include accessible parking stalls and accessible paths of travel from the parking stall and new clubhouse building as part of the new clubhouse project. The 18-hole golf course with clubhouse and restaurant is required to provide a minimum of 144 parking spaces, including 108 spaces for the golf course and 36 for the restaurant. A total of 159 parking spaces are proposed, exceeding the minimum requirement by 15 parking spaces.

Design/Landscaping

The project, as designed and conditioned, conforms to all development standards, and design guidelines for a golf clubhouse required by the City's Municipal Code. The project has also been designed to meet the required landscape standards and objectives of the City's Municipal Code. The landscape elements of the project include landscape setback areas along John J Kennedy Drive, parking lot landscaping, street trees, and landscape treatments around the perimeter of the site.

The design of the golf clubhouse includes a variety of colors, architectural features, and rooflines that provide visual interest. The architectural design of the clubhouse building includes stucco exterior walls, decorative tile, decorative windows and doors, and trellises. Detailed features include concrete roof tiles, trim around windows and doors, and a covered patio at the east side of the building.

REVIEW PROCESS

As required by the Municipal Code, the Project Review Staff Committee (PRSC) reviewed the proposed project. The applicant has worked with staff and modified the proposed plans to the satisfaction of all City Departments. Based on staff's review, and the recommended conditions of approval, staff believes that the project will be consistent with all applicable City development and design standards and specifications.

ENVIRONMENTAL

The City of Moreno Valley has reviewed the above project in accordance with the California Environmental Quality Act (CEQA) Guidelines. An Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128) has been prepared pursuant to Section 15164 of the CEQA Guidelines. The project will not cause a significant effect in this case because site conditions are consistent and do not create more or different environmental impacts than those addressed in the Mitigated Negative Declaration. The project will not increase the intensity of the golf course provided in the Specific Plan. None of the conditions described in Section 15162 of the CEQA Guidelines that call for preparation of a subsequent Environmental Impact Report or Negative Declaration have occurred.

NOTIFICATION

Public notice was sent to all property owners of record within 600' of the project on January 28, 2021. The public hearing notice for this project was posted on the project site January 29, 2021, and published in the local newspaper on January 30, 2021.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission **APPROVE** Resolution No. 2021-11 and Resolution No. 2021-06 and thereby:

1. **CERTIFY** an Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128) for Plot Plan PEN20-0060 prepared pursuant to Section 15164 of the California Environmental Quality Act (CEQA) Guidelines; and

2. **APPROVE** Plot Plan PEN20-0060 subject to the attached Conditions of Approval included as Exhibit A to the Resolution.

Prepared by:
Gabriel Diaz
Associate Planner

Approved by:
Patty Nevins
Planning Official

ATTACHMENTS

1. Resolution 2021-11
2. Exhibit A - Initial Study Addendum
3. Resolution 2021-06
4. Exhibit A - Conditions of Approval
5. Project Plans
6. Aerial Map
7. Zoning Map
8. Mailing Notice
9. 600 Foot Radius Map

RESOLUTION NUMBER 2021-11

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING AN ADDENDUM TO THE MITIGATED NEGATIVE DECLARATION FOR THE PRIOR SPECIFIC PLAN AMENDMENT FOR PLOT PLAN PEN20-0060 FOR THE DEVELOPMENT OF A 5,000 SQUARE FOOT GOLF COURSE CLUBHOUSE BUILDING, WITH 1,950 SQUARE FEET OF OUTDOOR SEATING AT THE EXISTING RANCHO DEL SOL GOLF COURSE LOCATED AT 28095 JOHN F KENNEDY DRIVE (APN 304-100-007)

WHEREAS, the City of Moreno Valley ("City") is a general law city and a municipal corporation of the State of California; and

WHEREAS, ROCIII CA Belago LLC., ("Developer") has filed an application for the approval of Plot Plan PEN20-0060 ("Application") for the development of a new 5,000 square foot golf course clubhouse building with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course ("Project") located at 28095 John F Kennedy Drive (APN 304-100-007) ("Site"); and

WHEREAS, Section 9.02.070 (Plot Plan) of the Moreno Valley Municipal Code acknowledges that the purpose of a plot plan is to provide a mechanism by which all new construction of industrial, commercial or multiple-family residential can be reviewed when not subject to other discretionary review processes which have review authority over project design; and

WHEREAS, the Application has been evaluated in accordance with Section 9.02.070 (Plot Plan) of the Municipal Code with consideration given to the City's General Plan, Specific Plan 193, Zoning Ordinance, and other applicable laws and regulations; and

WHEREAS, Section 9.02.070 of the Municipal Code imposes conditions of approval upon projects for which a Plot Plan is required, which conditions may be imposed by the Planning Commission to address on-site improvements, off-site improvements, the manner in which the site is used and any other conditions as may be deemed necessary to protect the public health, safety and welfare and ensure that the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, Staff has presented for the Planning Commission's consideration Conditions of Approval to be imposed upon Plot Plan PEN20-0060, which conditions have been deemed necessary to protect the public health, safety and welfare and ensure that the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, pursuant to the provisions of Section 9.02.200 (Public Hearing and Notification Procedures) of the Municipal Code and Government Code section 65905, a public hearing was scheduled for February 11, 2021, and notice thereof was duly

published and posted, and mailed to all property owners of record within 600 feet of the Site; and

WHEREAS, on February 11, 2021, the public hearing to consider the Application was duly conducted by the Planning Commission at which time all interested persons were provided with an opportunity to testify and to present evidence; and

WHEREAS, consistent with the requirements of Section 9.02.070 (Plot Plan) of the Municipal Code, at the public hearing the Planning Commission considered Conditions of Approval to be imposed upon Plot Plan PEN20-0060, which conditions were prepared by Planning Division staff who deemed said conditions to be necessary to protect the public health, safety and welfare and to ensure the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, at the public hearing, the Planning Commission considered whether each of the requisite findings specified in Section 9.02.070 of the Municipal Code and set forth herein could be made with respect to the proposed Project as conditioned by the Conditions of Approval; and

WHEREAS, on February 11, 2021, in accordance with the provisions of the California Environmental Quality Act (CEQA) as set forth in Public Resources Code Sections 21000 – 21177 and the CEQA Guidelines as set forth in 14 California Code of Regulations §§15000-15387, the Planning Commission reviewed and considered the Planning Division's recommendation that the proposed Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128) has been prepared pursuant to CEQA and the CEQA Guidelines in that the Project will not cause a significant effect on the environment because site conditions are consistent and do not create more or different environmental impacts than those addressed in the Mitigated Negative Declaration and the Project will not increase the intensity of the golf course provided in the Specific Plan.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, 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. **Notice**

That pursuant to Government Code section 66020(d)(1), notice is hereby given that the proposed project is subject to certain fees, dedications, reservations and other exactions as provided herein.

Section 3. **Evidence**

That the Planning Commission has considered all of the evidence submitted into the administrative record for the proposed Addendum, including, but not limited to, the following:

(a) Moreno Valley General Plan and all other relevant provisions contained therein;
(b) Title 9 (Planning and Zoning) of the Moreno Valley Municipal Code, Specific Plan 193, and all other relevant provisions referenced therein;
(c) Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128);
(d) Application for the approval of Plot Plan PEN20-0060 and all documents, records and references contained therein;
(e) Conditions of Approval for Plot Plan PEN20-0060, attached hereto as Exhibit A;
(f) Staff Report prepared for the Planning Commission's consideration and all documents, records and references related thereto, and Staff's presentation at the public hearing;
(g) Testimony and/or comments from Applicant and its representatives during the public hearing; and
(h) Testimony and/or comments from all persons that was provided in written format or correspondence prior to or at the public hearing.

Section 4. Findings

That based on the foregoing Recitals and the Evidence contained in the Administrative Record as set forth above, the Planning Commission makes the following findings in approving the proposed Addendum:

(a) That as conditioned, the proposed Project is consistent with the goals, objectives, policies and programs of the General Plan;
(b) That as conditioned, the proposed Project complies with all applicable zoning and other regulations;
(c) That as conditioned, the proposed Project will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity;
(d) That as conditioned, the location, design and operation of the proposed Project will be compatible with existing and planned land uses in the vicinity;
(e) That an addendum is appropriate since only minor technical changes or additions are necessary; and
(f) That the environmental effects of the proposed Project are less than those previously analyzed under the Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128).

Section 5. Addendum

That based on the foregoing Recitals, Evidence contained in the Administrative Record and Findings set forth above, the Planning Commission hereby approves

Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendment for Plot Plan PEN20-0060 for the development of a 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating at the existing Rancho Del Sol Golf Course located at 28095 John F Kennedy Drive (APN 304-100-007).

Section 6. Notice of Determination

That a Notice of Determination ("NOD") regarding the approval of the Addendum shall be filed with the Office of the County Clerk of the County of Riverside.

Section 7. Repeal of Conflicting Provisions

That all the provisions as heretofore adopted by the Planning Commission that are in conflict with the provisions of this Resolution are hereby repealed.

Section 8. Severability

That the Planning Commission 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 9. Effective Date

That this Resolution shall take effect immediately upon the date of adoption.

PASSED AND ADOPTED THIS _____ day of _____, 2021.

CITY OF MORENO VALLEY
PLANNING COMMISSION

_____
Patricia Korzec,
Chairperson

ATTEST:

_____
Patty Nevins,
Planning Official

APPROVED AS TO FORM:

_____
Steven B. Quintanilla,
City Attorney

Exhibits:
Exhibit A: Addendum

Exhibit A

ADDENDUM

MORENO VALLEY RANCH GOLF COURSE APARTMENTS
RESERVE AT BELAGO PHASE II APARTMENTS EXPANSION

Addendum to Initial Study Environmental Checklist

Project Applicant:
Bridge Investment Group
David Arteaga, Managing Director - Real Estate Development
111 East Sego Lily Drive, Suite 400
Salt Lake City, UT 84070

Prepared for:

City of Moreno Valley
Community Development Department
Planning Division
14177 Frederick Street
P.O. Box 88005
Moreno Valley, CA 92552

Prepared by:

CASC Engineering and Consulting, Inc.
1470 East Cooley Drive
Colton, CA 92324

October 30, 2020

ADDENDUM TO INITIAL STUDY/ENVIRONMENTAL CHECKLIST FORM
CITY OF MORENO VALLEY

1. Project Title: Moreno Valley Ranch Golf Course Apartments Reserve at Belago Phase II Apartments Expansion - Addendum to Initial Study Environmental Checklist

2. Lead Agency Name and Address: City of Moreno Valley
Community Development Department
Planning Division
14177 Frederick Street
P.O. Box 88005
Moreno Valley, CA 92552

3. Contact Person and Phone Number: Gabriel Diaz, Associate Planner

4. Project Location: Southeast, northeast, and southwest of intersection of Moreno Beach Drive and John F. Kennedy Drive

5. Project Sponsor's Name and Address: Bridge Investment Group
David Arteaga, Managing Director - Real Estate Development
111 East Sego Lily Drive, Suite 400
Salt Lake City, UT 84070

6. General Plan Designation: Residential (R20)

7. Zoning: Moreno Valley Ranch Specific Plan No. 193

8. Description of the Project: The proposed "2020 Modified Project" is a modification from one previously approved Project in 2018. The 2018 Project IS/MND was described as consisting of the following: the construction of 417 multi-family dwelling units within 18 buildings on the former driving range portion of the golf facility. However, as per the Substantial Conformance Application dated June 22, 2020, the previously approved project changed from proposing 417 multi-family dwelling units to 358 multi-family dwelling units. Because this was a decrease in development, no changes were necessary to the 2018 previously approved IS/MND. Also proposed in the apartment complex were ancillary uses and improvements such as a clubhouse, recreational facilities, parking, landscaping, outdoor lighting of parking areas, walkways and buildings, common open space, private open space, street improvements, drainage improvements and water quality management facilities. The project also involved the re-landscaping and re-opening to the public of 18-holes of the golf course known as the Valley 9 and the Mountain 9 courses. The remaining 9 holes, known as the Lakes 9, were planned to be converted to a recreation facility available to the public comprised of exercise trails, exercise stations, 5K course and practice golf facilities.

The 2020 Modified Project proposes a new plan on the Project Site within the project boundaries of the 2018 Project. The 2020 Modified Project plan includes the demolition of a portion of the existing two story clubhouse and cart barn, removing the approximate 9,800 sq. ft. second-story clubhouse and retaining the first-story cart barn and the construction of a new 5,000 sq. ft. clubhouse at the entrance of the Project Site. With the outdoor areas accounted for, the proposed "Del Sol Clubhouse" will occupy approximately 6,100 sq. ft. in total. This clubhouse will serve a similar use as the previous clubhouse, including amenities such as a restaurant, golf shop, and offices, however it will be significantly smaller than the original clubhouse. Thus, the City has determined that an Addendum to the IS/MND shall be prepared to analyze the 2020 Modified Project.

For the purpose of the Addendum to the Initial Study, the proposed development approved in 2018 shall be referred to as the "2018 Project". The proposal being evaluated in this Addendum shall be referred to as the "2020 Modified Project".

9. Surrounding Land Uses and Setting: The apartment site was previously utilized as the driving range for the Moreno Valley Ranch Golf Club. The golf course club house exists adjacent to and north of the project site, as well as a multi-family residential development. Single-family detached residential homes exist to the east, west and south of the project site. The existing 18-hole golf course is predominately surrounded by single-family residential development.

10. Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement). In addition to the City of Moreno Valley, the project will require approval from Riverside County Flood Control District. It is not anticipated that the project will require approval and/or permits from resource agencies such as U.S. Army Corps of Engineers, U.S. Department of Fish & Wildlife, or California Department of Fish & Wildlife.

IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

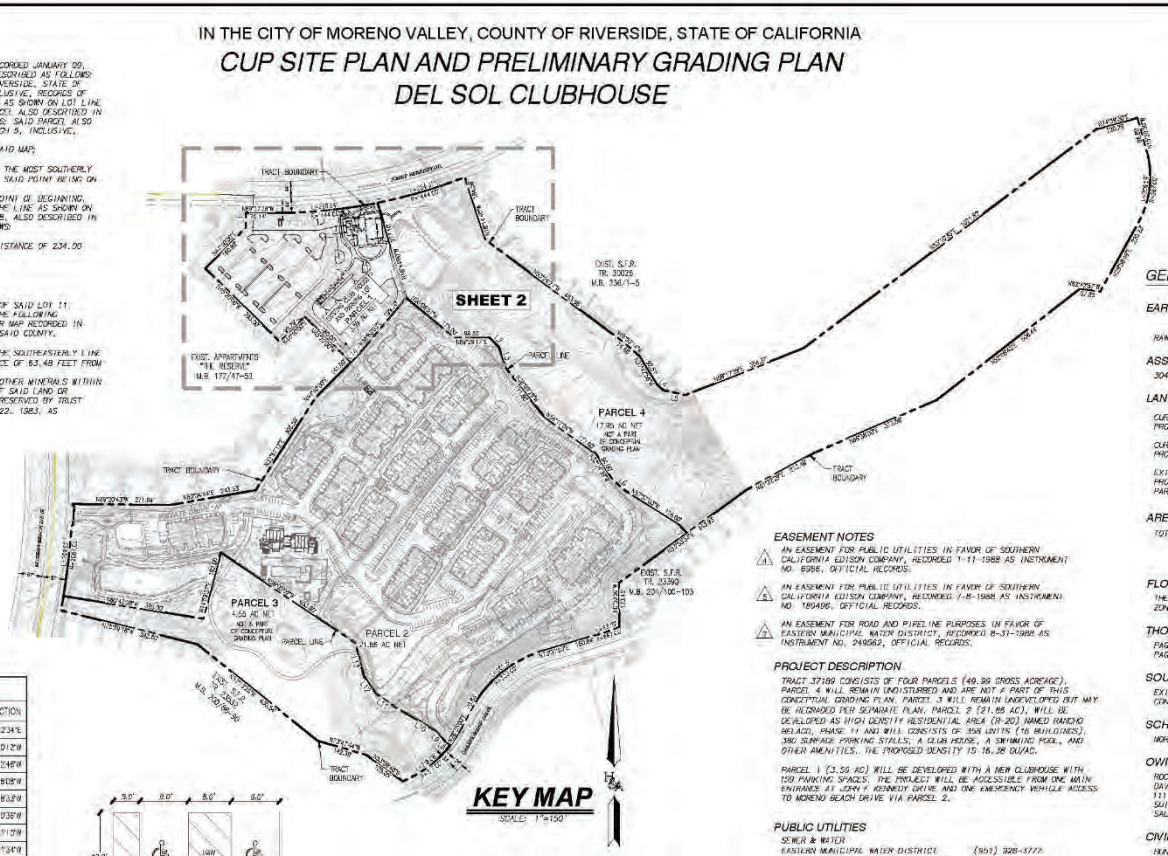
CUP SITE PLAN AND PRELIMINARY GRADING PLAN
DEL SOL CLUBHOUSE

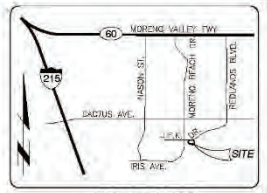
LEGAL DESCRIPTION

PARCEL A AS SHOWN ON LOT LINE ADJUSTMENT NO. 851, AS EVIDENCED BY DOCUMENT RECORDED JANUARY 09, 1989 AS INSTRUMENT NO. 05-6042 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: LOTS 11 AND 12 OF TRACT NO. 22552, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN MAP BOOK 177, PAGES 47 THROUGH 52, INCLUSIVE, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA, EXCEPTING THEREFROM THAT PORTION OF SAID LOT 12 AS SHOWN ON LOT LINE ADJUSTMENT NO. 788, CITY OF MORENO VALLEY, APPROVED AUGUST 01, 1988, SAID PARCEL ALSO DESCRIBED IN DEED RECORDED SEPTEMBER 21, 1988 AS INSTRUMENT NO. 273390, OF OFFICIAL RECORDS. SAID PARCEL ALSO SHOWN ON TRACT 23693-1 AS SHOWN BY MAP ON FILE IN MAP BOOK 235, PAGES 1 THROUGH 5, INCLUSIVE, RECORDS OF RIVERSIDE COUNTY, DESCRIBED AS FOLLOWS:
BEGINNING AT THE MOST SOUTHERLY CORNER OF LOT 13 OF TRACT 22552 AS SHOWN ON SAID MAP;
THENCE NORTH 37° 46' 33" WEST A DISTANCE OF 65.48 FEET;
THENCE NORTH 35° 12' 14" WEST A DISTANCE OF 117.73 FEET TO A POINT FROM WHICH THE MOST SOUTHERLY CORNER OF SAID LOT 13 BEARS SOUTH 49° 30' 14" EAST A DISTANCE OF 170.00 FEET; SAID POINT BEING ON THE COMMON LOT LINE BETWEEN SAID LOT 12 AND SAID LOT 13;
THENCE SOUTH 49° 30' 14" EAST ALONG SAID COMMON LOT LINE, 170.00 FEET TO THE POINT OF BEGINNING;
ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LOT 11 LYING SOUTHWESTERLY OF THE LINE AS SHOWN ON LOT LINE ADJUSTMENT NO. 772, CITY OF MORENO VALLEY APPROVED SEPTEMBER 14, 1988, ALSO DESCRIBED IN DEED RECORDED SEPTEMBER 19, 1988 AS INSTRUMENT NO. 263801, ALSO HOLD AS FOLLOWS:
BEGINNING AT THE MOST EASTERLY CORNER OF SAID LOT 11;
THENCE SOUTH 44° 40' 00" WEST ALONG THE SOUTHEASTERLY LINE OF SAID LOT 11 A DISTANCE OF 234.00 FEET TO THE TRUE POINT OF BEGINNING;
THENCE NORTH 45° 20' 00" WEST A DISTANCE OF 180.00 FEET;
THENCE SOUTH 44° 40' 00" WEST A DISTANCE OF 99.29 FEET;
THENCE NORTH 45° 20' 00" WEST A DISTANCE OF 233.00 FEET;
THENCE NORTH 44° 40' 00" EAST A DISTANCE OF 150.82 FEET;
THENCE NORTH 00° 32' 34" EAST A DISTANCE OF 41.95 FEET TO THE NORTHERLY LINE OF SAID LOT 11;
ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LOT 12 LYING NORTHEASTERLY OF THE FOLLOWING DESCRIBED LINE: BEGINNING AT THE MOST WESTERLY CORNER OF TRACT 23693-1, AS PER MAP RECORDED IN BOOK 235 OF MAPS, PAGES 1 THROUGH 5, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY;
THENCE SOUTH 31° 42' 58" EAST A DISTANCE OF 92.51 FEET;
THENCE SOUTH 42° 41' 58" EAST A DISTANCE OF 26.00 FEET TO AN ANGLE POINT IN THE SOUTHEASTERLY LINE OF SAID TRACT 23693-1, SAID ANGLE POINT BEING NORTH 77° 46' 33" WEST A DISTANCE OF 63.48 FEET FROM THE MOST SOUTHERN CORNER OF SAID TRACT 23693-1.
ALSO EXCEPTING THEREFROM ALL OIL, PETROLEUM, HYDROCARBON SUBSTANCES AND OTHER MINERALS WITHIN OR UNDERLYING SAID LAND BUT WITHOUT RIGHT OF SURFACE ENTRY UPON THE SURFACE OF SAID LAND OR SUBSURFACE THEREOF TO A DEPTH OF 500.00 FEET TO REMOVE OR EXACT THE SAME, AS RESERVED BY TRUST DATED FEBRUARY 23, 1965 (TI TRUST NO. 71-9449-009). IN DEED RECORDED NOVEMBER 22, 1983, AS INSTRUMENT NO. 242971 OF OFFICIAL RECORDS.

LEGEND

PROPERTY LINE
EXISTING SEWER & MH
EXISTING WATER
EXISTING 48" RCP
PROPOSED SEWER & MH
PROPOSED SEWER LATERAL
PROPOSED WATER AND ITS
PROPOSED WATER LATERAL
FLOWLINE
DAYLIGHT LINE
CENTERLINE
PROPOSED RETAINING WALL
PROPOSED STORM DRAIN & INLET
PROPOSED HEADWALL & RIPRAP (ENERGY DISSIPATER)
PROPOSED CART PATH
PROPOSED BROW DITCH
PROPOSED LANDING
PROPOSED BYPASS STORM DRAIN
PROPOSED CROSSWALK
PROPOSED CONCRETE SIDEWALK
PERMEABLE PAVERS
PROPOSED CUT/FILL SLOPE
PROPOSED TRASH ENCLOSURE
ACCESSIBLE PATH
FIRE ACCESS





VICINITY MAP
NOT TO SCALE

GENERAL NOTES

EARTHWORK ESTIMATE

	EXCAVATION	EMBANKMENT
RAW CUT	3,500 CY	3,500 CY

ASSESORS PARCEL NUMBER
304-100-002

LAND USE AND ZONING

CURRENT GENERAL PLAN	SP 193
PROPOSED GENERAL PLAN	SP 193
CURRENT ZONING	SP 193 OS
PROPOSED ZONING	SP 193 OS
EXISTING LAND USE:	OS
PROPOSED LAND USE: PARCEL 1	OS

AREA AND DENSITY
TOTAL:
GROSS ACREAGE: 3.59 ACRES
NET ACREAGE: 3.59 ACRES

FLOOD HAZARD
THE SUBJECT TRACT IS NOT WITHIN THE 500 YEAR FLOOD PLAIN, ZONE X. FEMA FLOOD INSURANCE PANEL NO. 06065C0770G.

THOMAS BROTHERS GUIDE
PAGE 718 D-7, E-7, AND
PAGE 748 D-1, E-1 2006 EDITION

SOURCE OF TOPOGRAPHY
EXISTING TOPOGRAPHY WAS OBTAINED FROM AERIAL SURVEY CONDUCTED BY R.J. LUND, INC. DATE OF PHOTOGRAPHY: 10-04-2019

SCHOOL
MORENO VALLEY UNIFIED SCHOOL DISTRICT

OWNER/SUBDIVIDER
ROCHI CA DELAGO, LLC
DAVID ARTEAGA
111 EAST SEGO LILY DRIVE
SUITE 108
SALT LAKE CITY, UTAH 84070

CIVIL ENGINEER
HUNSAKER & ASSOCIATES, SAN DIEGO, INC.
9707 WAPLES ST.
SAN DIEGO, CA 92121
(858) 558-4500

EASEMENT NOTES

1. AN EASEMENT FOR PUBLIC UTILITIES IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED 1-11-1988 AS INSTRUMENT NO. 6996, OFFICIAL RECORDS.
2. AN EASEMENT FOR PUBLIC UTILITIES IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED 7-15-1988 AS INSTRUMENT NO. 189496, OFFICIAL RECORDS.
3. AN EASEMENT FOR ROAD AND PIPELINE PURPOSES IN FAVOR OF EASTERN MUNICIPAL WATER DISTRICT, RECORDED 8-31-1988 AS INSTRUMENT NO. 249562, OFFICIAL RECORDS.

PROJECT DESCRIPTION

TRACT 37189 CONSISTS OF FOUR PARCELS (49.38 GROSS ACREAGE). PARCEL 4 WILL REMAIN UNDISTURBED AND ARE NOT A PART OF THIS CONCEPTUAL GRADING PLAN. PARCEL 3 WILL REMAIN UNDEVELOPED BUT MAY BE REGRADED PER SEPARATE PLAN. PARCEL 2 (21.85 AC), WILL BE DEVELOPED AS HIGH DENSITY RESIDENTIAL AREA (R-20) NAMED RANCHO BELADO, PHASE 1 AND WILL CONSISTS OF 358 UNITS (16 BUILDINGS), 380 SURFACE PARKING STALLS, A CLUB HOUSE, A SWIMMING POOL, AND OTHER AMENITIES. THE PROPOSED DENSITY IS 16.38 DU/AC.

PARCEL 1 (3.59 AC) WILL BE DEVELOPED WITH A NEW CLUBHOUSE WITH 159 PARKING SPACES. THE PROJECT WILL BE ACCESSIBLE FROM ONE MAIN ENTRANCE AT JOHN F KENNEDY DRIVE AND ONE EMERGENCY VEHICLE ACCESS TO MORENO BEACH DRIVE VIA PARCEL 2.

PUBLIC UTILITIES

SEWER & WATER EASTERN MUNICIPAL WATER DISTRICT 2270 TRUMBLE RD., PERRIS, CA 92572	(951) 928-3777	
ELECTRICITY MORENO VALLEY ELECTRIC UTILITY 14331 FREDERICK ST., SUITE 2 MORENO VALLEY, CA 92553	(951) 413-3500	
GAS SOUTHERN CALIFORNIA GAS COMPANY 4495 HOWARD AVE., RIVERSIDE, CA 91758	(800) 427-2200	
TELEPHONE VERIZON	(951) 748-6656	

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	41.96	N00°32'34"E
L2	38.20	N44°39'12"W
L3	81.30	N18°02'48"E
L4	28.05	N47°38'08"W
L5	83.48	N17°48'02"W
L6	45.00	N48°10'38"W
L7	38.00	N42°58'17"W
L8	16.71	N53°21'34"W
L9	45.00	N40°38'18"W
L10	178.00	N58°38'17"W
L11	65.00	N54°49'15"W
L12	60.00	N35°15'24"W
L13	95.00	N13°58'07"W
L14	38.01	N44°40'03"E

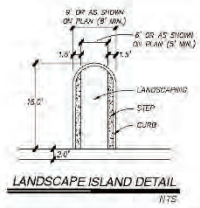
ACCESSIBLE PARKING DETAIL
NTS

PARKING SUMMARY

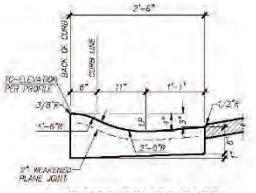
REQUIRED		PROVIDED*	
TYPE	SPACES	TYPE	SPACES
STANDARD	158	STANDARD	153
DISABLED	6	DISABLED	6
TOTAL	113	TOTAL	159

*EXISTING PARKING TO BE RE-STRIPED THROUGHOUT PER FIGURE 9.17.080-6 PER MUNICIPAL CODE.

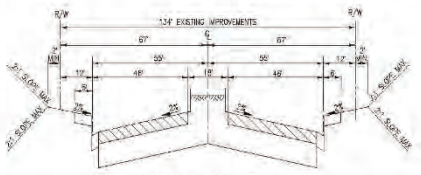
SHEET INDEX



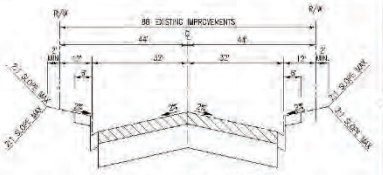
LANDSCAPE ISLAND DETAIL
NTS



4" MOD. ROLLED CURB
NOT TO SCALE



MORENO BEACH BLVD.
TYPICAL SECTION
N.T.S.



JOHN F. KENNEDY DRIVE
TYPICAL SECTION
N.T.S.

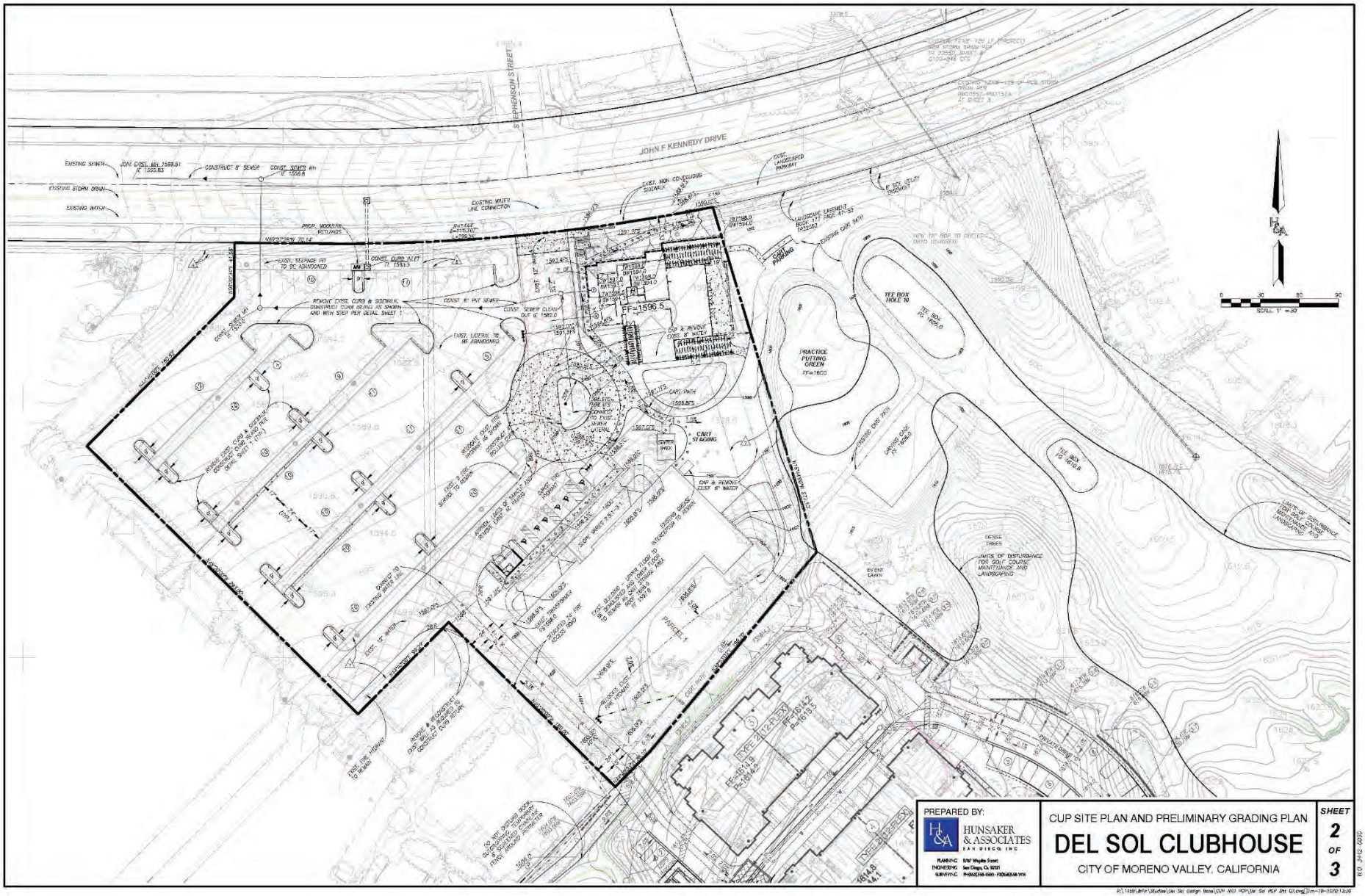
ALISA S. VIALPANDO R.C.E. 47945 DATE
MY REGISTRATION EXPIRES ON 12/31/21

PREPARED BY:	NO.	REVISIONS	DATE	BY
HUNSAKER & ASSOCIATES	1	FIRST SUBMITTAL	04/23/20	H&A
	2	SECOND SUBMITTAL	06/22/20	OWNER
	3			
	4			
	5			
	6			
	7			

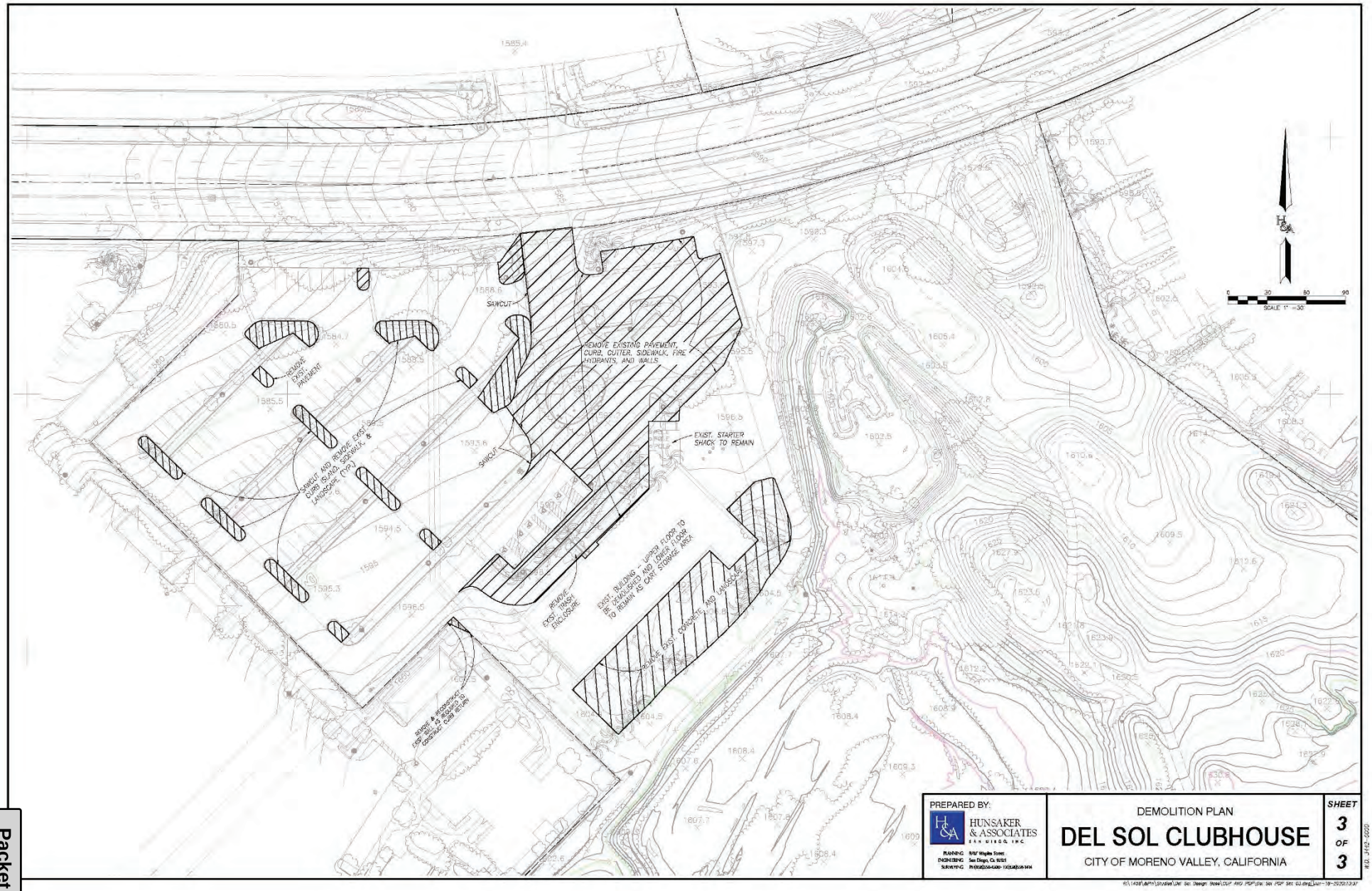
CUP SITE PLAN AND PRELIMINARY GRADING PLAN
DEL SOL CLUBHOUSE
CITY OF MORENO VALLEY, CALIFORNIA

SHEET 1 OF 3

CUP Site Plan and Preliminary Grading Plan for 2020 Modified Project
June 22, 2020



Demolition Plan for 2020 Modified Project
June 22, 2020



2020 Modified Project Site Plan and Clubhouse Floor Plan
June 19, 2020

OCCUPANCY DATA

CLUBHOUSE

FLOOR / ROOM	OCCUPANCY CLASSIFICATION (CBC CHAPTER 3)	SQ FT/ ROOM	OCCUPANT LOAD FACTOR PER TABLE 1004.1	OCCUPANT LOAD PER ROOM
GOLF SHOP	M	1000 SQ FT	60	1000/60 = 17
RESTAURANT AREA	A2	1600 SQ FT	15	1600/15 = 107
PREP KITCHEN	A2	500 SQ FT	200	500/200 = 3
OFFICE	B	100 SQ FT	150	100/150 = 1
MANAGER'S OFFICE	B	180 SQ FT	150	180/150 = 1
STORAGE	B M	70 SQ FT	300	180/300 = 1
COVERED VERANDA	A2	850 SQ FT	15	850/15 = 57
JANITOR ROOM	U	25 SQ FT	300	25/300 = 1
MECH. ROOM	U	50 SQ FT	300	50/300 = 1
FIRE RISER. ROOM	U	50 SQ FT	300	50/300 = 1

PLUMBING FIXTURE CALCULATIONS

CLUBHOUSE REQUIRED FIXTURES:

OCCUPANT LOAD: 190 OCC /2 = 95 (95 WOMEN , 95 MEN)

REQUIRED FIXTURES PER PLUMBING CODE 2016: TABLE 422.1 GROUP A2

	WATER CLOSET	URINAL	LAVATORIES	DRINKING FOUNTAIN
WOMEN	3	-	1	1 PER FLOOR
MEN	2	1	1	
FIXTURES PROVIDED:				
WOMEN	3	-	2	1 PER FLOOR
MEN	2	1	2	

BUILDING CODE SUMMARY

OCCUPANCY CLASSIFICATION:
CLUBHOUSE A2

CONSTRUCTION TYPE:
TYPE VB

FIRE PROTECTION SYSTEM:
PER CBC 1007.2.1, EXCEPTION 1:
IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE ELEVATOR SHALL NOT BE REQUIRED ON FLOORS PROVIDED WITH A HORIZONTAL EXIT AND LOCATED AT OR ABOVE THE LEVEL OF EXIT DISCHARGE.

SITE PARKING TABULATIONS

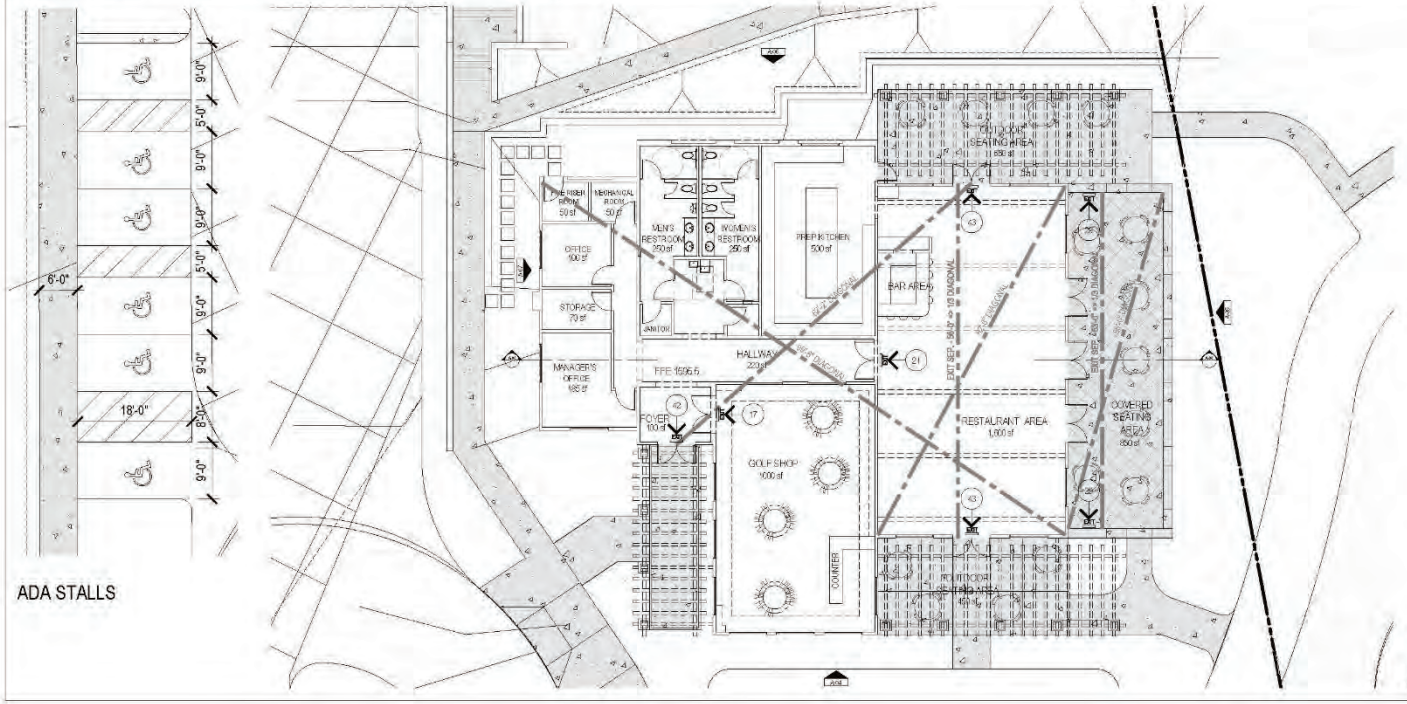
PARKING REQUIRED:
18 HOLES X 6 STALLS/EA. = 108 STALLS
3,500 RESTAURANT SPACE @ 10 PER 1000 SF = 35 STALLS
PARKING PROVIDED:
153 STANDARD STALLS
6 ADA STANDARD STALLS

FOR PARKING LAYOUT REFER TO SHEET LP 02

BUILDING AREA SUMMARY

CLUBHOUSE AREA:

GROSS = 5,000 SF
GROSS WITH COVERED AREA = 5,850 SF
GROSS WITH OUTDOOR AREA = 6,100 SF



LEGEND

DIAGONAL OF AREA SERVED

EXIT SEPARATION > 1/3 OF DIAGONAL

TRAVEL DISTANCE (T.D.)

ILLUMINATED EXIT SIGN (SEE ELECT PLANS)
SHADING DENOTES LOCATION OF VIEWER
ARROW DENOTES DIRECTION OF EXIT
SEE EGRESS PLANS FOR LOCATIONS OF ALL EXIT SIGNS

VISUAL & TACTILE EXIT AND OCCUPANCY SIGNS (SEE DETAILS SHEET A1.02)

EXITING OCCUPANT LOAD

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

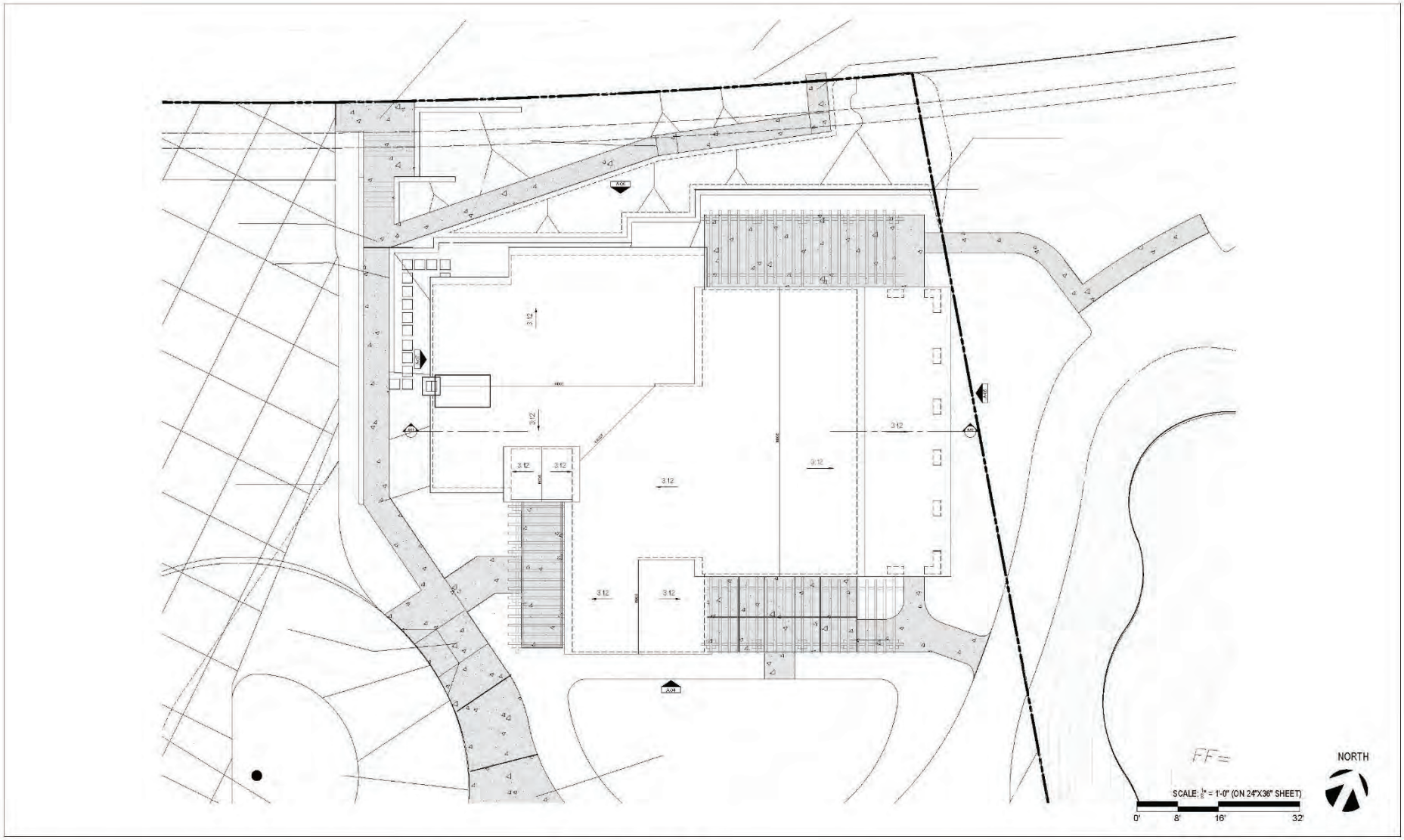
BRIDGE INVESTMENT GROUP HOLDINGS

SITE PLAN AND CLUBHOUSE FLOOR PLAN
June 19, 2020

A-01

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5335 Alpha Rd, Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

2020 Modified Project Clubhouse Roof Plan
June 19, 2020



DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - ROOF PLAN
June 19, 2020

A-02

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9030 | www.humphreys.com

Del Sol Clubhouse Architectural Design - South Elevation
June 19, 2020

SCALE: 1/8" = 1'-0" (ON 24"X36" SHEET)
0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2018536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - SOUTH ELEVATION
June 19, 2020

A-03

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9536 | www.humphreys.com

Del Sol Clubhouse Architectural Design - East Elevation
June 19, 2020

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - EAST ELEVATION
June 19, 2020

A-04

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
6339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

Del Sol Clubhouse Architectural Design - North Elevation
June 19, 2020

SCALE: 1/8" = 1'-0" (ON 24"X36" SHEET)
0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - NORTH ELEVATION
June 19, 2020

A-05

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9838 | www.humphreys.com

Del Sol Clubhouse Architectural Design - West Elevation
June 19, 2020

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - WEST ELEVATION
June 19, 2020

A-06

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - SECTION
June 19, 2020

A-07

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com


TEAL 6x6

BLUE 6x6

GREEN 6x6


DECORATIVE 6x6


DECORATIVE 6x6


DECORATIVE 6x6

1. TILED ARCHED ENTRY


2. DUNN EDWARD
DEW383
COOL DECEMBER
STUCCO FINISH
20/30 SAND FINISH


3. DUNN EDWARD
DE6399
MOLASSES
STUCCO FINISH
20/30 SAND FINISH


4. EAGLE ROOFING
CAPRISTANO
3636
SUNRISE BLEND

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

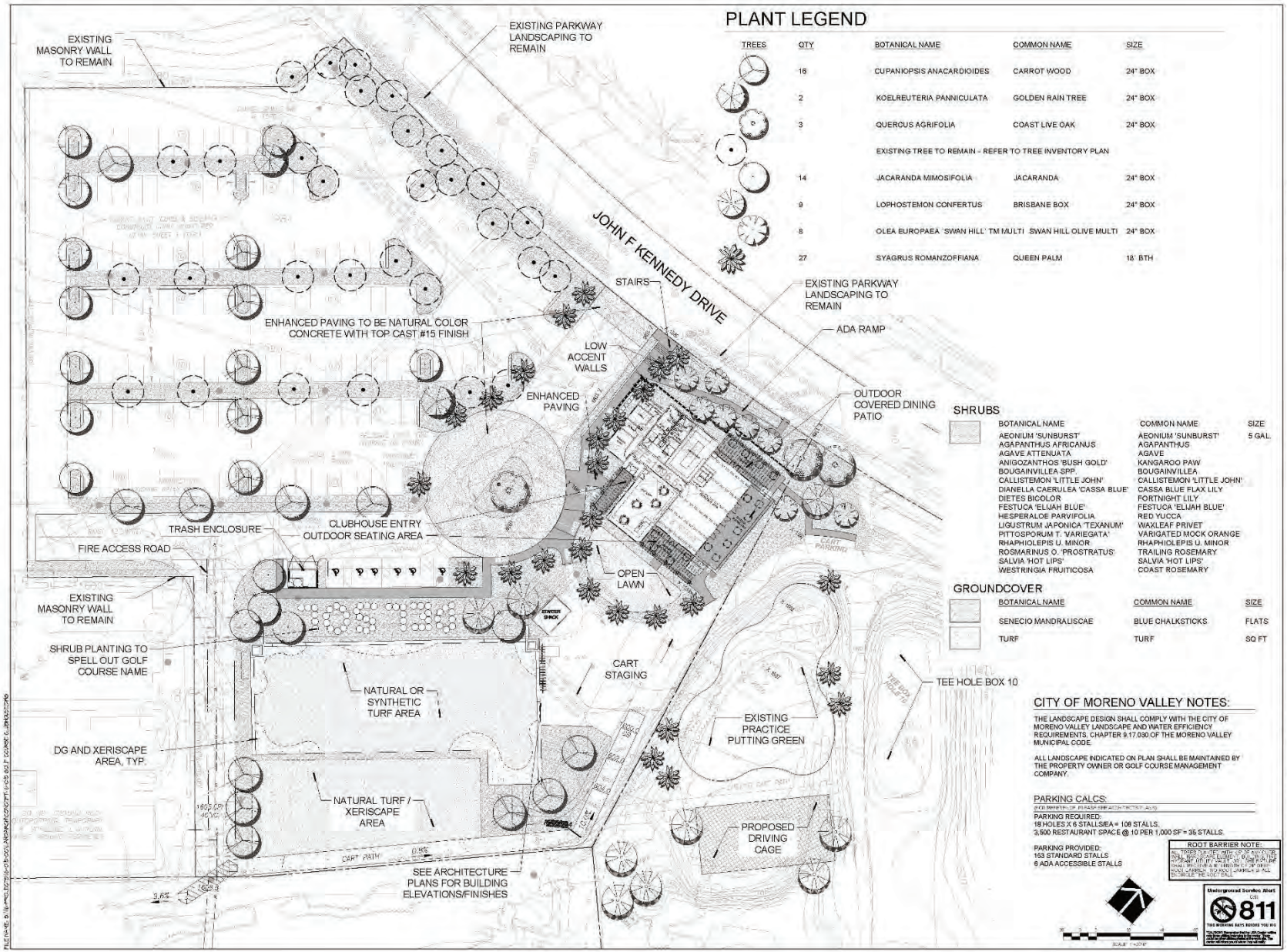
BRIDGE INVESTMENT GROUP HOLDINGS

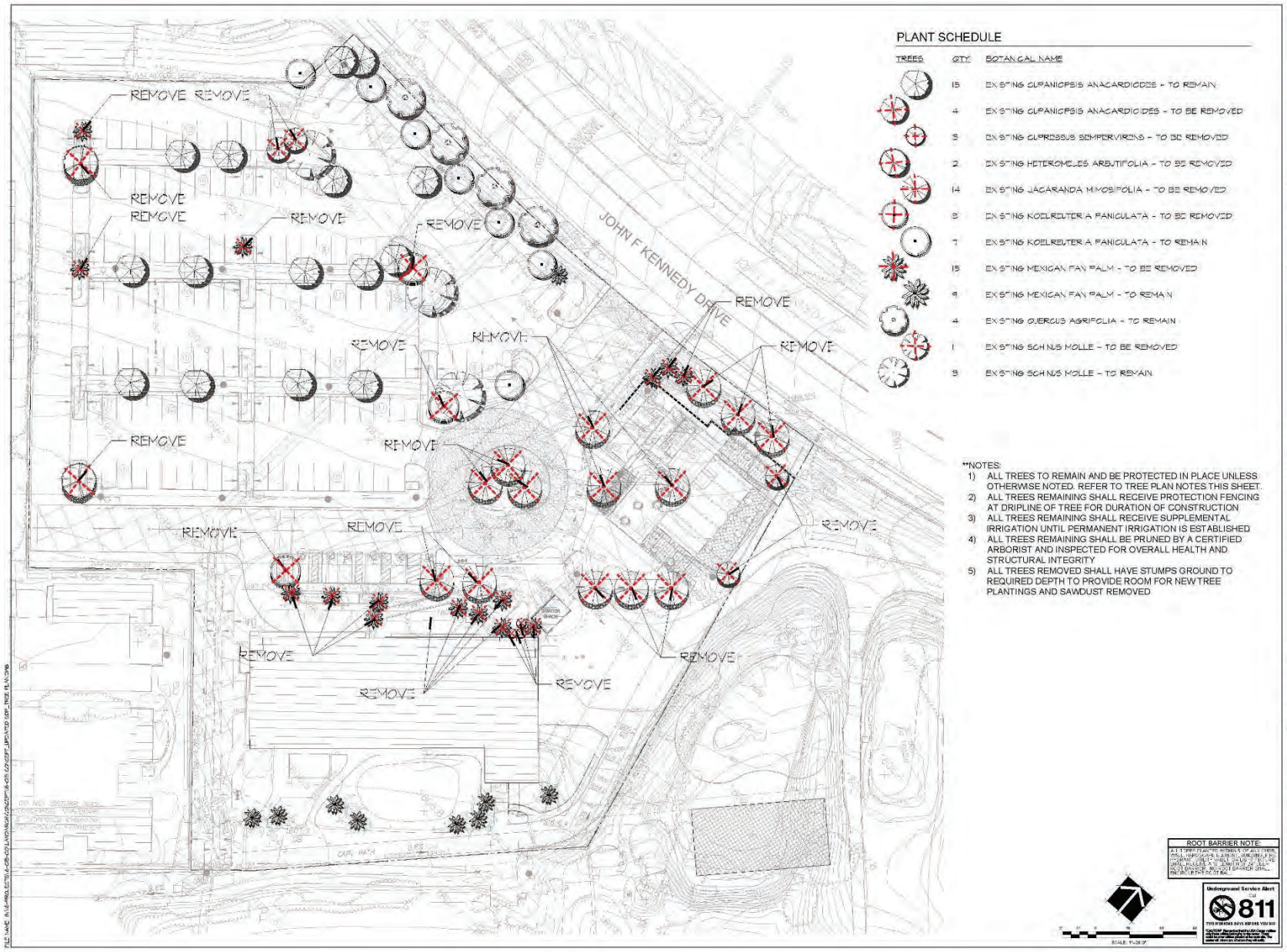
CLUBHOUSE - COLORS & MATERIALS BOARD
June 19, 2020

A-09

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9536 | www.humphreys.com

2020 Modified Project Landscape Plan
June 18, 2020





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		Hazards & Hazardous Materials		Recreation
	Agricultural Resources		Hydrology/Water Quality		Transportation/Traffic
	Air Quality		Land Use/Planning Land Use/Planning		Tribal
	Biological Resources		Mineral Resources		Utilities/Service Systems
	Cultural Resources		Noise		Mandatory Findings of Significance
	Geology/Soils		Population/Housing		
	Greenhouse Gas Emissions		Public Services		

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 "potential 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 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.	■

signature Date

Printed Name For

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: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less 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 Analysis," as described in (5) below, may be cross-referenced).

5) Earlier analysis 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 analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Pursuant to the CEQA Guidelines (CCR § 15164(a) and 15162(a)(1)), if the proposed action/revisions to the previous Project do not cause "new significant environmental effects or a substantial increase in the severity of previously identified significant effects," then an addendum to the previously adopted environmental document shall be prepared. For the purposes of the following Initial Study/Environmental checklist for the City of Moreno Valley, the above quoted text shall be shortened to the following: "new or substantially increased significant effects."

I. **AESTHETICS.** Would the project:				
a) Have a substantial adverse effect on a scenic vista?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site is located in the southern portion of the City of Moreno Valley and abuts the Mount Russell area directly to the south. The development of the multi-family residential project will occupy the current location of the driving range for the golf course. Vistas to the north of the valley to the San Bernardino Mountains that presently exist from the existing residential development south of the project site will not be adversely affected by the proposed project. The proposed project will impact views to the south toward the Mount Russell area from some ground-level apartments in the complex immediately north of the project site. Implementation of the project will have a less than significant effect on a scenic vista.

Discussion of 2020 Modified Project: The 2020 Modified Project would not obstruct any scenic vistas or views because, in this regard, the Modified Project is similar as the previously evaluated Project. While a new structure is proposed, the character and intensity is not substantially different than that of the 2018 Project. Thus, the proposed Project would not significantly impact any views or scenic vistas from surrounding properties.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on a scenic vista, no new or substantially increased significant effects result from the Project with respect to scenic vistas. Impacts are found to be fully analyzed in the 2018 Project IS. No new mitigation measures are required for the 2020 Modified Project.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				■

2018 Project IS/MND Conclusion: No Impact – There are no State-designated or eligible scenic highways within the City of Moreno Valley and thus no impacts would result from the project in this regard. The project site does not include scenic resources such as trees of scenic value or historic buildings. The golf course does contain rock outcroppings, but the project will not substantially damage said resources.

Discussion of 2020 Modified Project: The Project site is located directly north of the existing clubhouse in the same parking lot. Thus, there are no trees, rock outcroppings, or historic buildings on the site. The proposed changes will occur on an existing parking lot which is fully disturbed. Furthermore, the Project Site does not include scenic resources and there are no state scenic highways in the vicinity of the site. Thus, no new impact shall result would the 2020 Modified Project be developed.

Finding: As there are no scenic resources on or adjacent to the site, the 2020 Modified Project would not result in new or substantially increased significant effects with respect to scenic resources. No new mitigation measures are required for the 2020 Modified Project.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The proposed project will convert land that was previously used as the driving range for the golf course. 21.96 acres of former driving range land will be converted to residential use. Approximately 248 acres of open space (approximately 165 acres in the golf course and 83 acres for the park/training course) will remain and be available to the public for use. The proposed project does maintain significant open space buffers between the proposed development and the existing residential development.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Discussion of 2020 Modified Project: The 2020 Modified Project would be within the same visual character and of similar scope as the 2018 Project. The new clubhouse will function in place of the existing clubhouse, and its building footprint would be smaller than the existing clubhouse. The existing clubhouse will be converted to a one-story cart storage area. These proposed refinements are consistent with the intended setting of the 2018 Project and will abide by the provisions of the City. Additionally, the new clubhouse will include landscape and site improvements to enhance the visual quality of the finished site *(see Figure 1: Site Plan).*

Finding: As the 2020 Modified Project is in the same character as the 2018 Project, and because it proposes site improvements for the new development, its implementation would not substantially degrade the existing visual character or quality of the site and its surroundings. No new or substantially increased significant effects result with respect to degradation of visual character. No new mitigation measures are required for the 2020 Modified Project.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The proposed multi-family residential complex will remove the existing lighting for the former driving range and provide a new source of light and/or glare which will affect nighttime views in the immediate area. The lighting for the former driving range was a source of substantial light and glare affecting the existing residents of homes in the immediate area. The proposed project is required to demonstrate compliance with the City's Municipal Code regulations regarding exterior lighting prior to the issuance of building permits.

Mitigation Measures

AES-1 The project will comply with the Moreno Valley Municipal Code regulating exterior lighting of residential structures. Architectural plans shall be prepared, submitted and reviewed by the City and approved as demonstrating compliance with said regulations.

Discussion of 2020 Modified Project: The 2020 Modified Project will be similar in scale with the previous clubhouse and thus would create additional light and glare for safety and security. However, like the 2018 Project, the 2020 Modified Project will comply with the Moreno Valley Municipal Code regulating exterior lighting of residential structures, and the Project shall update architectural plans to be submitted and reviewed by the City for approval as demonstrating compliance with said regulations (Mitigation Measure AES-1). Therefore, the mitigation identified in the IS/MND for aesthetics impacts remains applicable to the proposed 2020 Modified Project. Thus, no new impacts are anticipated and no new mitigation measures and/or modifications to the existing mitigation measures are required as impacts are fully analyzed.

Finding: The 2020 Modified Project includes no changes in lighting that would be inconsistent with the 2018 Project IS/MND. Therefore, through approval of lighting plans consistent with the municipal code which are checked by the City prior to development of the site, no new or substantially increased significant effects result from implementation of the Modified Project. No new mitigation measures are required for the 2020 Modified Project.

II. **AGRICULTURE 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project?				
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?				■

2018 Project IS/MND Conclusion: No Impact – The proposed apartment project site was formally utilized as the driving range for the golf course and does not contain land designated as Prime Farmland or Farmland of Statewide Importance and thus no impacts will result by the implementation of the proposed project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Discussion of 2020 Modified Project: The proposed Project would occupy an existing parking lot and would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use.

Finding: The Project's potential impacts related to conversion of Farmland are no different from those analyzed in the previously evaluated Project. Therefore, no new or substantially increased significant effects result from the 2020 Modified Project. No new mitigation measures are required for the 2020 Modified Project.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				■

2018 Project IS/MND Conclusion: No Impact – The project site is not under a Williamson Act contract nor does the existing zoning for the site designate the site for agricultural uses. Thus, the proposed project will not conflict with existing zoning for agricultural uses or Williamson Act contract.

Discussion of 2020 Modified Project: Since the Project site is an existing parking lot, the 2020 Modified Project would not occupy land that is under a Williamson Act contract nor does the existing zoning for the site designate the site for agricultural uses.

Finding: The 2020 Modified Project's potential impacts regarding conflicts with existing agricultural use and/or potential conflicts with Williamson Act contracts are no different from those analyzed in the previously analyzed document. Therefore, no new or substantially increased significant effects result from the 2020 Modified Project. No new mitigation measures are required for the 2020 Modified Project.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				■

2018 Project IS/MND Conclusion: No Impact – The proposed project will not involve changes in the existing environment which would result in the conversion of Farmland to non-agricultural uses.

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same area analyzed in the 2018 Project and is proposed in place of an existing parking lot. There is no Farmland located on or adjacent to the Project Site; the proposed Project would not result in the conversion of Farmland to non-agricultural use.

Finding: As the 2020 Modified Project would not result in changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural; no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

III. **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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The project site is located in the western portion of Riverside County, which is part of the South Coast Air Basin. Air quality within the South Coast Air Basin is regulated by the South Coast Air Quality Management District (SCAQMD). Standards for air quality are established in the SCAQMD's Air Quality Management Plan (AQMP) adopted in December of 2012. The proposed project will result in the emission of pollutants into the Air Basin during short-term construction and long-term operational activities. The pollutant levels emitted by the construction and operation of the Project have the potential to exceed the daily significance thresholds established by the SCAQMD, thereby potentially conflicting with or obstructing implementation of the SCAQMD 2012 Air Quality Management Plan.

The project site is currently surrounded by residential uses. With the approval of a General Plan Amendment (GPA) and Specific Plan Amendment, the proposed development of 417 residential dwelling units on 21.96 acres would be consistent with the City General Plan Land Use Designation as well as the land use and text established in the Moreno Valley Ranch Specific Plan. The project proposes to amend the General Plan from Open Space to Residential (R20) and the Moreno Valley Ranch Specific Plan from Golf

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Course to High Residential (HR) to permit the development of the multi-family residential complex. Therefore, with the adoption of the GPA, the proposed project would not result in an inconsistency with the land use designation, and is not anticipated to exceed the AQMP assumptions for the project site.

Regarding Construction-Source Emissions, the project emissions will not exceed applicable regional thresholds of significance established by SCAQMD for volatile organic compounds (VOCs), nitrogen oxide (NOx), carbon monoxide (CO), sulfur oxide (SOx), and particulate matter (PM10 and PM2.5). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD for nitrogen oxide (NOx), carbon monoxide (CO), and particulate matter (PM10 and PM2.5).

Project construction-source emissions will not conflict with the Basin Air Quality Management Plan (AQMP). As identified in the Kunzman analysis cited herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines.

Regarding project operational-sourced emissions, incorporation of mitigation measures AQ-2 through AQ-5 will reduce energy and mobile source-related emissions and avoid the project exceeding applicable regional thresholds of significance established by the SCAQMD.

Mitigation Measures:

Construction

AQ-1 The project shall comply with SCAQMD Rule 403 regarding fugitive dust;

AQ-2 Contractor shall use off-road diesel-powered construction equipment that meets or exceeds the CARB and USEPA Tier 4 off-road emissions standards for equipment rated at 50 horsepower or greater during Project construction. Such equipment shall be outfitted with Best Available Control technology (BACT) devices including a CARB certified Level 3 Diesel Particulate Filters (DPF). These requirements shall be included in applicable bid documents and successful contractor(s) must demonstrate the ability to supply such equipment. A copy of each unit's certified tier specification or model year specification and CARB or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment.

AQ-3 Architectural coatings (no more than 50 grams/liter of VOC) that are beyond the limits in SCAQMD Rule 1113 – Architectural Coatings shall be utilized on the project buildings.

Operation

AQ-4 The project applicant shall provide sidewalks within the project boundary;

AQ-5 The project applicant shall utilize low-flow faucets, toilet and shower fixtures that reduce indoor water demand by 20% per CalGreen Standards;

AQ-6 The project applicant shall implement recycling programs that reduce waste to landfills by a minimum of 75 percent by 2020 per AB341;

AQ-7 The project applicant shall utilize and install ENERGY STAR-compliant appliances in residential dwelling units.

Mitigation measure AQ-1 proposed above is to ensure that the project complies with the SCAQMD's mandatory fugitive dust control regulation Rule 403. Compliance with this rule 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.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

The project is located adjacent to a Riverside Transit Bus Stop on Moreno Beach Drive, north of Championship Drive. Mitigation measure AQ-4 will provide sidewalks onsite to encourage use of nearby sources of alternative transportation which reduces the production of mobile source emissions. Mitigation measure AQ-5 reduces the project's water requirements and therefore the emissions and energy associated with water transport. Mitigation measure AQ-6 reduces the project's solid waste footprint and therefore the emissions associated with transporting, processing and land-filling solid waste. Mitigation measure AQ-7 requires the installation of ENERGY STAR appliances wherever appliances are to be installed on site. This reduces the project's electricity needs and therefore, the emissions associated with energy production.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project proposes refinements that are within the same character and intensity as the previously approved project. The 2020 Modified Project would not change existing land uses, nor would the Project increase the amount of traffic utilizing the site, and thus, is still consistent with the land use designation that has been in place for the last several iterations of the regional population Projections and the AQMP.

Finding: As there is no increase in traffic associated with the proposed changes to the 2018 Project, the 2020 Modified Project's potential impacts regarding air quality impacts are less than those that those analyzed in the previously approved 2018 IS/MND document and would be potentially less as the square clubhouse square footage has decreased. With incorporation of the mitigation measures included in the 2018 Project IS/MND, the 2020 Modified Project would not have any new impacts beyond the scope of the 2018 Project. Therefore, no new or substantially increase significant effects result from the Project. As was the case for the 2018 Project, impacts would be less than significant and no new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Kunzman Associates, Inc. conducted an air quality modeling analysis to calculate the potential air emissions associated with the construction and operation of the proposed project. The emissions were then compared to applicable SCAQMD standards. The construction and operations-related air emissions were analyzed for both regional and local air quality impacts, as well as potential toxic air impacts.

Construction Emissions

The phases of construction activities that were analyzed for the Proposed Project include grading, building construction, paving, and the application of architectural coatings. Grading emissions shown below include incorporation of fugitive dust control measures as required by SCAQMD Rule 403 (per mitigation measure AQ-1 above). As shown below, none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the Proposed Project.

Construction-Related Regional Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	5.75	67.94	38.78	0.06	5.68	4.15
Off-Site[3]	0.13	0.09	1.12	0.00	0.23	0.06
Total	**5.88**	**68.03**	**39.91**	**0.06**	**5.91**	**4.21**
Building Construction						
On-Site	3.11	26.55	18.18	0.03	1.79	1.68

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Off-Site	3.15	13.36	25.69	0.07	5.36	1.53
Total	**6.27**	**39.91**	**43.87**	**0.10**	**7.14**	**3.21**
Paving						
On-Site	2.75	17.52	14.80	0.02	0.96	0.88
Off-Site	0.09	0.06	0.74	0.00	0.17	0.05
Total	**2.84**	**17.58**	**15.54**	**0.02**	**1.12**	**0.93**
Architectural Coating						
On-Site	62.48	2.01	1.85	0.00	0.15	0.15
Off-Site	0.50	0.33	4.11	0.01	0.93	0.25
Total	**62.98**	**2.34**	**5.96**	**0.01**	**1.08**	**0.40**
Total for overlapping phases[4]	**72.08**	**59.83**	**65.37**	**0.14**	**9.35**	**4.54**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1
[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, paving and painting phases may overlap.

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. As shown below, none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. Therefore, a less than significant local air quality impact would occur from construction of the Proposed Project.

Local Construction Emissions at Nearest Sensitive Receptors[1]

Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	67.94	38.78	5.68	4.15
Building Construction	26.55	18.18	1.79	1.68
Paving	17.52	14.80	0.96	0.88
Architectural Coating	2.01	1.85	0.15	0.15
SCAQMD Threshold for 25 meters (82 feet) or less[2]	**270**	**1,577**	**13**	**8**
Exceeds Threshold?	No	No	No	No

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Perris Valley.

[2] The nearest existing sensitive receptors are located adjacent to the west side of the project site; therefore, as according to LST methodology any receptor located closer than 25 meters should be based on the 25 meter threshold, the 25 meter threshold was used.

Operational Emissions

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

The operations-related criteria air quality impacts created by the proposed project were analyzed through use of the CalEEMod model. The operating emissions were based on the year 2018, which is the anticipated opening year for the proposed project. The CalEEMod model analyzes operational emissions from area sources, energy usage, and mobile sources. As shown below, the project's unmitigated emissions would exceed SCAQMD regional thresholds for NOx only. Therefore, a potentially significant regional air quality impact would occur from operation of the proposed project and mitigation measures are required to reduce the project's emissions.

Unmitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	7.41	50.97	89.97	0.30	20.89	5.82
Total Emissions	**18.90**	**59.78**	**128.85**	**0.36**	**21.76**	**6.69**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	**Yes**	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1
[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.
[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.
[4] Mobile sources consist of emissions from vehicles and road dust.

As shown in the table above, the NOx emissions would be primarily created from mobile sources (including trucks and passenger vehicles) that will be operated by future residents of the project. As shown in the table below, with incorporation of mitigation measures AQ-2 through AQ-5 (as detailed above), emissions from the operation of the project would no longer exceed the SCAQMD regional threshold for NOx. Therefore, with the incorporation of mitigation, a less than significant regional air quality impact would occur from the operation of the proposed project.

Mitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	6.30	39.06	57.06	0.18	11.77	3.29
Total Emissions	**17.78**	**47.87**	**95.95**	**0.24**	**12.65**	**4.16**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1
[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.
[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.
[4] Mobile sources consist of emissions from vehicles and road dust.

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The local air quality impacts from the operation of the proposed project would occur from emissions generated on-site. Sources of on-site operational emissions include architectural coatings off-gassing, landscaping equipment emissions, natural gas appliance emissions and on-site vehicular emissions. Because of the residential nature of the proposed project, the majority of the proposed project's operational emissions are from vehicles traveling on roadways away from the project site. These emissions are then spread over a vast area traversed by various mobile sources and do not result in localized air quality impacts in proximity to the project site. As such, localized operational modeling for project operations are not prepared for residential developments. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions.

Therefore, with incorporation of mitigation measures identified in Section III(a) above, neither project construction-source emissions nor operational-source emissions would cause or substantively contribute to violations of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project would be within the same character and operation as the existing clubhouse. Both the construction emissions and operational emissions would be equal to or less than those analyzed for the previously approved Project as the 2020 Modified Project proposes a clubhouse which is approximately 5,000 square feet, which is less than half the size of the original clubhouse on the property. Additionally, the 2020 Modified Project would not generate additional emissions since the Modified Project is replacing the use of the previous clubhouse with a smaller building footprint and similar operational characteristics; it would not increase project-related traffic.

Finding: The 2020 Modified Project's potential impacts regarding air quality impacts are less than those analyzed in the previously approved document and thus would be potentially less as the square footage has decreased. Impacts are fully analyzed in the 2018 Project IS/MND and no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – As identified in Section III(b) above, the development of the proposed project would result in less than significant regional emissions during construction. Therefore, a less than significant cumulative impact would occur from the construction of the proposed project.

The data provided in the operational discussion for Section III(b) above shows that the ongoing operational activities of the proposed project would not exceed SCAQMD thresholds of significance for VOC, CO, SO2, PM10, and PM2.5; however, unmitigated emissions would exceed the SCAQMD threshold for NOX. Therefore, mitigation is required. With the incorporation of mitigation, emissions from the operation of the project would no longer exceed the SCAQMD regional threshold for NOx, and would not result in a significant cumulative impact from operations.

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. Therefore, with the incorporation of mitigation measures noted above in Section III(a), the project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project would not change land uses as compared to the 2018 Project and is still consistent with the land use designation that has been in place for the last several iterations of the regional population

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

projections and the AQMP. The construction impacts associated with the 2020 Modified Project would be less than the 2018 Project. Additionally, the operational aspects would be very similar.

Finding: As there is no increase in traffic associated with the proposed changes to the 2018 Project, the 2020 Modified Project's potential impacts regarding air quality impacts would be similar to those analyzed in the previously-approved document and would be potentially less as the square footage of the on-site building has decreased. Therefore, no new or substantially increased significant effects result from the Project. The operational aspects are almost identical and therefore, the 2020 Modified Project is sufficiently analyzed under the previously 2018 Project. No new mitigation measures are required for the 2020 Modified Project.

d) Expose sensitive receptors to substantial pollutant concentrations?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Land uses considered to be sensitive receptors include long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child-care facilities and athletic facilities. The nearest sensitive receptors to the project site include multi-family attached and single-family detached residential dwelling units surrounding the project site. Landmark Middle School is approximately one-half mile from the proposed apartment complex and 0.6 mile from the nearest Valley 9 course re-grading operations. Ridgecrest Elementary School is approximately 0.22 miles northeast of the apartment site.

The analysis discussed in Section III(b) above found that none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Local air quality impacts from the operation of the proposed project would occur from emissions generated on-site. Sources of on-site operational emissions include architectural coatings off-gassing, landscaping equipment emissions, natural gas appliance emissions and on-site vehicular emissions. As stated above in Section III(b), because of the residential nature of the proposed project, the majority of the proposed project's operational emissions are from vehicles traveling on roadways away from the project site. These emissions are then spread over a vast area traversed by various mobile sources and do not result in localized air quality impacts in proximity to the project site. As such, localized operational modeling for project operations are not prepared for residential developments. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions.

Therefore, with the incorporation of mitigation measures identified in Section III(a), the project will not create substantial pollutant concentrations which could adversely affect said sensitive receptors.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project would be constructed and operated with the addition of a new clubhouse in place of the old clubhouse. Both the construction emissions and operational emissions would be equal to or less than those analyzed for the previously-approved Project as the building square footage for the 2020 Modified Project is less, and, as such, should generate fewer emissions as there would not be an increase in traffic associated with the proposed changes to the 2018 Project.

Finding: The Modified 2020 Project's potential impacts regarding air quality impacts are less than those analyzed in the previously-approved document and would be potentially less as the square footage has decreased. Therefore, no new or substantially increased significant effects result from the 2020 Modified Project. No new mitigation measures are required for the 2020 Modified Project

e) Create objectionable odors affecting a substantial number of people?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project does not contain land uses typically associated with emitting objectionable odors (i.e. agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, various manufacturing facilities). Potential odor sources associated with the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

proposed project may result from construction equipment exhaust, the application of asphalt and architectural coatings during construction. Standard construction regulations will minimize the temporary, short-term and intermittent odor impacts during construction. The placement of staging areas away from existing residential uses, per AQ-6 below, would also help to reduce the potential for any odor-related impacts. Additionally, the project is required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed project construction and operations will be less than significant.

AQ-6 Place construction staging areas as far away from existing residential development as possible.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

2020 Modified Project Discussion: The 2020 Modified Project would be constructed and operated with the addition of a new clubhouse to replace the old clubhouse. Both the construction emissions and operational emissions would be equal to or less than those analyzed for the previously-approved 2018 Project as the building square footage for the 2020 Modified Project is less, and, as such, should generate fewer emissions as there would not be an increase in traffic associated with the proposed changes to the 2018 Project. Impacts are fully analyzed in the 2018 Project IS/MND. The 2020 Modified Project would not create objectionable odors affecting a substantial number of people because the scope is virtually the same as that of the previously approved project.

Finding: The 2020 Modified Project's potential impacts regarding air quality impacts are less than those analyzed in the previously-approved document and would be potentially less as the square footage has decreased. Therefore, no new or substantially increased significant effects result from the 2020 Modified Project. As was the case for the previously approved 2018 Project, impacts would be less than significant and no new mitigation measures are required for the 2020 Modified Project.

IV. **BIOLOGICAL RESOURCES**. Would the project:

Background: The site has been developed as a golf course that consists of a driving range, fairways, tee boxes, sand traps and one water hazard. The golf course has not been in use since 2015. APN 304-030-005 is located on the northeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-007 is located on the southeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-008 is located south of Championship Drive with Mount Russell on its southwestern border. The site is located in Sections 22, 23, and 14, Township 3S, Range 3W, SBBM of the Sunnymead 7.5-minute quadrangle (United States Geologic Service 1967, Revised 1980).

The site is an 27-hole golf course that is surrounded on all sides by high density and single family residential developments. Plants observed at the site are primarily non-native grasses ruderal weeds. Ruderal plants are typically those plants that initially colonized disturbed lands. These types of plants are typically non-native introduced weeds. The survey area is surrounded on all sides by single family and high-density residential developments plus associated infrastructure. Mount Russell is found on the southwestern border of APN 304-100-008. Soils at APN 304-030-004 have been classified as Metz loamy fine sands with a sandy loam substrate (United States Department of Agriculture 1971). These are soils that have been formed in alluvial materials and are deep, somewhat excessively drained soils found on flood plains and alluvial fans. Soils at APNs 304-100-007 and 304-100-008 have been classified as San Emigdio loam (United States Department of Agriculture 1971). San Emigdio loams are formed in sedimentary alluvium and are very deep, well drained soils found on alluvial fans and floodplains (Tetra Tech 2017).

The site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The MSHCP has identified the following requirements related to biological resources by APNs:

- APN 304-030-005: A habitat assessment was required for potential habitat by burrowing owl.
- APN 304-100-008: A habitat assessment would be required for potential habitat for burrowing owl and Los Angeles pocket mouse.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

- APN 304-100-007: No biological resources requirements related to the MSHCP have been identified but was included in the reconnaissance survey to determine if sensitive biological resources were present.

The APNs associated with the site are identified by the MSHCP as not a part of a cell and independent cell groups.

The available literature on natural resources with reference to biological resources for the site were consulted including information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (2017). The California Native Plant Society (CNPS) Electronic Inventory (2017) for the site was also reviewed for sensitive plants (Tetra Tech 2017).

Plant and wildlife species classified as rare, threatened, or endangered; proposed for listing as endangered or threatened; or candidate species for listing by federal and/or state resource agencies are considered "sensitive". A list of Sensitive Biological Resources that have the potential for presence in the survey area and likely occurrence probability for presence in the survey area are found in Appendix A. The site is highly disturbed from development as an 18-hole golf course. Despite the highly disturbed and developed condition of the site, habitat at the site has the potential to support the following sensitive species:

- Cooper's hawk (*Accipiter cooperii);*
- Burrowing owl (*Athene cunicularia*);
- Ferruginous hawk (*Buteo regalis*);
- Lawrence's goldfinch (*Spinus lawrencei*);
- Western mastiff bats (*Eumops perotis californicus*); and
- Western yellow bat (*Lasiurus xanthinus*).

The water feature found in APN 304-030-005 is suitable habitat for occupation by western pond turtle (*Emys marmorata*) only if introduced. The water feature has no connection to possible sources of this sensitive turtle.

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?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – No sensitive plants or plant communities were observed at the site during the reconnaissance survey. Based on the high degree of management of the golf course and the presence of non-native grasses and weeds that are found in all parts of the site, sensitive native plants are absent from the site. No impacts to these resources would occur.

During the reconnaissance and habitat assessment of the site, raptors actively foraging at the site were observed. Owl pellets that are indigestible material such as bones and fur left in the bird's gizzard and regurgitated by the owl were observed beneath some of the on-site trees. Canid scat potentially left by coyotes (*Canis latrans*) were observed throughout the site. Birds were observed actively using all parts of the site as forage and cover. Due to the timing of the survey, nesting activity was not observed (Tetra Tech, Inc.). While no Western Pond Turtles were observed, the man-made water features offer potential habitat.

Portions of APN 304-030-005 have potential habitat for occupation by burrowing owl. No burrowing owls were observed on the site or in the buffer zones to the site. No sign of burrowing owl was observed on the site or in the buffer zones to the site. No burrowing owls were found in the water feature or in areas adjacent to the water feature. Portions of APN 304-100-008 were observed to be suitable habitat for occupation by LAPM. A number of small mammal burrows were observed that could be occupied by this small mammal (Tetra Tech 2017). To reduce impacts to sensitive species from project activities, the following mitigations are proposed to reduce impacts to a less than significant level.

Mitigation Measures:

BIO-1. To remain in compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3503, 3503,5, and 3515 no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests. Ground disturbance and vegetation removal

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

activities should be conducted outside the nesting season (typically February 1 to September 15) and outside the raptor nesting season. A qualified biologist will conduct pre-construction surveys no more than three days to commencement of project activities to identify locations of nests within the 270-acre project site. If nesting birds are observed, a qualified biologist shall establish a clearly marked ~~a~~ perimeter around the nest. Avoidance and minimization measures shall be maintained until the young have fledged and no further nesting is detected.

BIO-2 A pre-construction survey of all suitable western burrowing owl habitat shall be conducted for burrowing owls 30 days prior to ground disturbance following the established protocol in the Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Area Plan. If burrowing owls are found present on the site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified in 48 hours. If owls are found on site, a burrowing owl relocation plan for active or passive relocation will be developed and implemented with review and approval site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service, and California Department of Fish and Wildlife.

BIO-3 As required by MSHCP, a focused night time trapping survey of APN 304-100-008 by a qualified biologist for small mammals shall be conducted prior to grading or ground disturbance to determine if Los Angeles Pocket Mouse are present. If found present on the site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service and California Department of Fish and Wildlife will be notified and a Determination of Biologically Equivalent or Superior Preservation document shall be prepared.

BIO-4 Three days prior to ground disturbance, certified biologist shall conduct a field survey of the existing water features of the project site to determine if Western Pond Turtles are present. Should Western Pond Turtles be observed at the man-made water features on the project site, Western Riverside County Regional Conservation Authority, U.S Fish & Wildlife Service and California Department of Fish & Wildlife shall be notified and a protocol for handling the turtles shall be developed.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: As this amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 project area, the 2020 Modified Project would not disturb any areas that have already been analyzed in the previously approved IS/MND. The 2020 Modified Project is not anticipated to increase impacts to biological resources, either directly or indirectly, as all changes are proposed on developed parking lot areas. The Modified Project will be similar in nature with construction and operation of the proposed clubhouse that is within the same character as the original 2018 Project.

Finding: The 2020 Modified Project would not result in 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 Game or U. S. Fish and Wildlife Service, no new or substantially increased significant effects result from the 2020 Modified Project. Therefore, impacts are fully analyzed under the 2018 Project IS/MND. As was the case for the 2018 Project, impacts would be less than significant and no new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U. S. Wildlife Service?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – No vernal pools or habitat likely to have supported vernal pools were observed on the site during the reconnaissance survey. Culverts to drain stormwater runoff generated by off-site properties are found in APNs 304-030-005 and 304-100-004. A drainage that is approximately 4.4 acres of riverine habitat transects APN 304-030-005 trending from the east to the west. This drainage is part of a regional drainage system that terminates in Lake Elsinore found south of the site. The man-made open water feature that is approximately 3.1 acres in size is not connected to

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

the on-site drainage system and was observed during the reconnaissance to support water fowl. If the project requires modification or work within the drainage or man-made pond, permits issued by the U.S. Army Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Wildlife would be required and impacts to regulated waters would be mitigated by permit-required Best Management Practices (BMPs). The following mitigations are proposed to reduce impacts to a less than significant level.

BIO-5 Prior to any disturbance in the riverine drainage or open water man-made feature found within the entire 270-acre project site the applicant shall consult the U.S. Army Corps of Engineers, Regional Water Quality Control Board, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine the regulatory status of the drainage and man-made feature.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: The 2020 Modified Project would not disturb any area that has already been analyzed in the previously approved document. The 2020 Modified Project is not anticipated to increase impacts to biological resources, either directly or indirectly, as all changes are proposed on developed parking lot areas. The Modified Project will be similar in nature with construction and operation of the proposed clubhouse that is within the same character as the original 2018 Project. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project. The 2020 Modified Project would also comply with mitigation measure BIO-5.

Finding: As the 2020 Modified Project would not result in an 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 Game or U. S. Wildlife Service; no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – As indicated earlier, no vernal pools or habitat likely to have supported vernal pools were observed on the site during the reconnaissance survey. The drainage found in APN 304-030-005 and man-made pond are likely subject to regulation. With incorporation of Mitigation BIO-4, noted above, a less than significant impact would occur.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: The 2020 Modified Project would not disturb any area that has already been analyzed in the previously approved environmental document. Furthermore, the 2020 Modified project would comply with the mitigations measure BIO-4, noted above.

Finding: As the 2020 Modified Project would not result in any significant effects on federally-protected wetlands; no new or substantially increased significant effects result from the Project. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

2018 Project IS/MND Conclusion: No Impact – The project would be constructed in a site that has already been disturbed and built as a golf course. It is surrounded on all sides except to the south by fully developed suburban development with associated infrastructure. Lake Perris State Recreation Area, located south of the project site, is considered part of an important bird area within the San Jacinto Valley by the Audubon Society. The project is not within this area and will not interfere with the movement of migratory fish or wildlife species. The project will not interfere with an established native resident or migratory wildlife corridors. No impact would occur.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: Since the 2020 Modified Project would be constructed directly north of the existing clubhouse on the existing parking lot, the Project would not disturb any area that has already been analyzed in the previously- approved document.

Finding: As the 2020 Modified Project would not result in any significant effects on the movement of fish or wildlife; no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The habitat assessment was completed in compliance with then Western Riverside Multi Species Habitat Conservation Plan (MSHCP). The MSHCP was approved by the County Board of Supervisors on June 17, 2003. Federal and State permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The City of Moreno Valley is a member agency to the Western Riverside MSHCP. With incorporation of Mitigations BIO 1 through BIO 3, noted above, impacts to the Western Riverside MSHCP would be less than significant.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: Since there are no sensitive species trees on the Project site, the 2020 Modified Project would not disturb any area that has already been analyzed in the previously approved document. Furthermore, the 2020 Modified Project would comply with the recommended mitigation measures noted in the 2018 Project IS/MND.

Finding: As the 2020 Modified Project would not result in any conflict with any local policies or ordinances protecting biological resources, no new or substantially increased significant effects result from the Modified Project. No new mitigation measures are required for the 2020 Modified Project

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site is not located within a designated Criteria Area as defined by the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). As noted earlier, the habitat assessment was completed in compliance with the Western Riverside MSHCP. The City of Moreno Valley is a member agency to the Western Riverside MSHCP. With incorporation of Mitigations BIO 1 through BIO 3, no impacts to the Western Riverside MSHCP would occur. A less than significant impact would occur.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

Discussion of 2020 Modified Project: The 2020 Modified Project would not disturb any area that has already been analyzed in the previously approved document. Furthermore, the 2020 Modified Project would comply with the mitigation measures outlined in the previously-approved 2018 Project IS/MND.

Finding: As the 2020 Modified Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or state habitat conservation plan, no new or substantially increased significant effects result from the Project. No revisions to the existing mitigation measures and/or no new mitigation measures are required for the 2020 Modified Project.

V. **CULTURAL RESOURCES**. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?				■

2018 Project IS/MND Conclusion: No Impact – A Cultural and Paleontological Resources Assessment was conducted in November of 2017 by Duke Cultural Resources Management, LLC. As part of this effort, DUKE CRM conducted a records search, field survey and supplemental research for archeological and historic resources. Based on the lack of recorded cultural resources within the Project, and the amount of prior earth-moving activity related to the original construction of the golf course, DUKE CRM indicates that no historical resources are likely to be impacted by the Project. In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, also has a low potential to impact cultural resources. Based on the lack of recorded cultural resources within the 2018 Project Site area, a substantial change in the significance of a historical resource is not anticipated. In addition, the clubhouse building plans do not include a lower level and/or basement. The clubhouse will be constructed on footings located near the ground surface which has already been disturbed with the construction of the parking lot. Thus, there are no deep earth disturbing activities proposed. The 2020 Modified Project will need to comply with Mitigation Measures CR-1 through CR-6 prescribed in the 2018 Project IS/MND to reduce the significance of impacts.

Finding: As the 2020 Modified Project would not result in a substantial adverse change in the significance of a historical resource, no new or substantially increased significant effects result from the Modified Project. Impacts are fully evaluated under the previously approved IS/MND and no new potential impacts are anticipated. The mitigation measures prescribed in the IS/MND would still be applicable for the Modified Project and necessary to reduce the significance of impacts. Thus, no new mitigation measures or modifications to the existing mitigation measures are required for the 2020 Modified Project.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The Paleontological Resources Assessment finds that, due to the low potential to impact cultural resources, DUKE CRM does not recommend archeological monitoring of the Project. DUKE CRM does, however, recommend, per City requirement, that the following measures be implemented should archeological resources be discovered during construction;

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Mitigation Measures:

CR-1: Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1. The location of the future reburial area shall be identified on a confidential

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

exhibit on file with the City, and concurred to by the Consulting Native American Tribal Governments prior to certification of the environmental document.

CR-4: The City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, also has a low potential to impact cultural resources. Mass grading is not anticipated for the construction of the Modified Project. The Project will require excavation for a conventional building foundation, along with demolition of curbs, gutters, and landscaping. As previously noted, the clubhouse will be constructed on footings located near the ground surface which has already been disturbed with the construction of the parking lot. Thus, there are no deep earth disturbing activities proposed. Based on the lack of recorded cultural resources within the Approved Project area, and the close proximity of the 2020 Modified Project site, the Paleontological Resources Assessment is applicable to the Modified Project site.

Therefore, the recommendation that, due to the low potential to impact cultural resources, DUKE CRM does not recommend archeological monitoring of the Project as it applies to the Modified Project. DUKE CRM does, however, recommend, per City requirement, that mitigation measures CR-1 through CR-4 be implemented should archeological resources be discovered during construction.

Finding: Due to the low potential for archaeological resources on the project site and the mitigation measures incorporated into the 2018 Project IS/MND, potential impacts are fully analyzed under the previously approved document. Mass grading is not anticipated for the construction of the Del Sol Clubhouse, therefore, the Modified Project would not necessitate MM CR-1 to mitigate impacts to a less than significant level. The 2020 Modified Project would be required to comply with the Approved Project's Conditions of Approval as well as mitigation measures CR-2 through CR-6 described in the document. Impacts are fully evaluated under the previously approved IS/MND and no new potential impacts are anticipated. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The Paleontological Resources Assessment noted above indicates that significant and unique paleontological resources may be impacted by the Project during deep earth disturbing activities, should these activities be implemented. These impacts would be considered potentially significant. Paleontological monitoring is recommended during ground disturbance associated with the Project.

Mitigation Measures:

CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61). Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in

consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, has a low potential for resources to be uncovered unless deep earth moving activity is applied. In addition, as previously noted, the clubhouse will be constructed on footings located near the ground surface which has already been disturbed with the construction of the parking lot. Thus, there are no deep earth disturbing activities proposed. In the event that deep and significant earth moving activities are necessary for the development of the 2020 Modified Project, Mitigation Measure CR-5 shall reduce potential impacts to a less than significant level. If a resource is uncovered, construction and excavation activities shall cease immediately and proper procedures will be carried forth to comply with local, state, and federal regulations.

Finding: Due to the mitigation measures incorporated into the 2018 Project IS/MND, potential impacts are fully analyzed under the previously approved document. The 2020 Modified Project would be required to comply with the Approved Project's Conditions of Approval as well as the mitigation measures described in the document. Potential impacts are fully analyzed under the previously-approved document. No new mitigation measures are required for the 2020 Modified Project.

d) Disturb any human remains, including those interred outside of formal cemeteries?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – As noted above, the Paleontological Resources Assessment finds that, there is low potential to impact cultural resources, including human remains. DUKE CRM does, however, recommend that the following measures be implemented should human remains be discovered during construction:

CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, has a low potential for resources to be uncovered unless deep earth moving activity is applied. The 2020 Modified Project will comply with Mitigation Measure CR-6 where if human remains are discovered, no further disturbance shall occur until the proper procedures are completed.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: Due to the mitigation measures incorporated into the 2018 Project IS/MND, potential impacts are fully analyzed under the previously approved document. The 2020 Modified Project would be required to comply with the Approved Project's Conditions of Approval as well as the mitigation measures described in the document. Potential impacts are fully analyzed under the previously-approved document. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

VI. **GEOLOGY AND SOILS**. Would the project:				
a) Expose people or structures to 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.				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The analysis finds that the San Jacinto Fault is the nearest known active fault and is located approximately 3.2 miles to the northeast of the project site. The investigation states that since no known earthquake faults are known to exist at, or project into the project site, the probability of ground surface rupture occurring at the site is considered nil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the portion of the existing parking lot analyzed in 2018 and will utilize the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location has not changed, potential impacts from the Alquist-Priolo Earthquake Zone and Fault Hazard Zones are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

(ii) Strong seismic ground shaking?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The LOR Geotechnical Investigation states that the San Jacinto Fault is the nearest known active fault is located approximately 3.2 miles to the northeast of the project site and that the effects of ground shaking anticipated at the project site should be mitigated by implementation of the seismic design requirements and procedures outlined in Chapter 16 of the California Building Code.

Mitigation Measure:

GEO-1 The project buildings shall comply with the seismic design standards and requirements of Chapter 16 of the California Building Code.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed directly north of the existing clubhouse within a portion of the existing parking lot. The 2020 Modified Project would implement the seismic design requirements and procedures outlines in Chapter 16 of the California Building Code. Compliance with applicable code standards and seismic requirements identified in the 2018 Project IS/MND will reduce geotechnical concerns to below a level of significance as identified in mitigation measure GEO-1. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location is adjacent to the existing clubhouse, potential impacts related to ground-shaking are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant

effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

(iii) Seismic-related ground failure, including liquefaction?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – As the site is underlain by dense older alluvial materials and igneous bedrock and the depth of groundwater is expected at fifty-plus feet, as described in the geotechnical analysis noted above, the potential for liquefaction is considered nil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed within a portion of the existing parking lot area analyzed in 2018 and will utilize the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the Modified Project.

Finding: As the Modified Project's location has not changed, potential impacts related to seismic-related ground failure, including liquefaction, are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the Modified Project.

(iv) Landslides?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The occurrences of mass movement failures such as landslides, rockfalls, or debris flows are generally not considered common and no evidence of mass movement was observed on the project site.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy a portion of the existing parking lot area analyzed in 2018 and utilize the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location has not changed, potential impacts related to landslides are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

(b) Result in substantial soil erosion or the loss of topsoil?				■

2018 Project IS/MND Conclusion: No Impact – The earthen material and top soil resulting from the grading of the 22-acre apartment complex site will be spread over the 248 acres of golf course and exercise park. These areas will be re-seeded and re-planted and irrigation will be restored, reducing the potential for erosion. Landscape improvement plans will incorporate erosion control measures consistent with City standards and regulations. The 22-acre apartment site will be graded to establish building pads for the structures. Grading plans for the apartments will incorporate erosion control measures consistent with City standards and regulations. Thus, the project will not result in substantial soil erosion or the loss of topsoil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed within a portion of the existing parking lot area directly north of the existing clubhouse analyzed in 2018 and will use the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved 2018 Project would also be required of the 2020 Modified Project. Additionally, the 2020 Modified Project is located on an existing parking lot. Landscaped areas will be maintained similarly to the previously approved project.

Finding: As the 2020 Modified Project's location is adjacent to the existing clubhouse, and potential impacts related to soil erosion or the loss of top soil are no different from those addressed in the previously approved document. Additionally, the landscaping plans and preliminary grading plan shall be approved by the City. The procedures and controls outlined in the previously approved IS/MND are applicable to the 2020 Modified Project and no new impacts are anticipated. Therefore, no new or substantially

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

increased significant effects would result from the 2020 Modified Project. No new mitigation measures are required for the Modified Project.

(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?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The geotechnical analysis noted above does not identify that the project is 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. Therefore, the resultant level of impact will be less than significant.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed in a portion of the existing parking lot area analyzed in 2018 and will utilize the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location has not changed, potential impacts related to soil instability are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

(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?				■

2018 Project IS/MND Conclusion: No Impact – The geologic analysis indicates that the materials encountered during the soils investigation were relatively granular and were tested and found to have very low expansion potential. Additionally, the site of the multi-family residential complex shall be graded and prepared such that the structures shall not be located on expansive soils and no substantial risks to life or property shall be created. Per the analysis, evaluation of on-site and imported soils for their expansion potential should be conducted following completion of the grading operation.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy a portion of the existing parking lot area analyzed in 2018 and utilize the same (if not better) building standards as analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location has not changed, potential impacts related to expansive soils are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				■

2018 Project IS/MND Conclusions: No Impact – The project will utilize existing sewer systems serving the community and will not use septic tanks or alternative waste water disposal systems.

(Source: Project Plans)

Discussion of 2020 Modified Project: The project will utilize existing sewer systems serving the community and will not use septic tanks or alternative waste water disposal systems.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project would use sewers, potential impacts related to use of septic tanks or alternative waste water disposal systems are cannot result from the Project. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

VII. **GREENHOUSE GAS EMISSIONS.** Would this project?				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – Kunzman Associates, Inc. conducted a GHG modeling analysis to calculate the potential emissions associated with the construction and operation of the proposed project. To determine whether the proposed project is significant, the tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses and the SCAQMD Tier 4 2020 Target Service Population Threshold value of 4.8 MTCO2e/SP/year were utilized.

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. CalEEMod 2016.3.1 was used to calculate the GHG emissions from the proposed project. The service population was estimated to be 1,213 future residents (estimated population from CalEEMod).

The proposed project's unmitigated emissions were calculated at 6,454.69 metric tons of CO2e per year, resulting in 5.32 MTCO2e/SP/year. According to the thresholds of significance identified above, a cumulative global climate change impact would potentially occur if the GHG emissions created from the on-going operations would exceed the SCAQMD draft screening threshold of 3,000 metric tons per year of CO2e and the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. As the proposed project's unmitigated emissions exceed both thresholds, mitigation is required.

The project's mitigated emissions were calculated at 4,476.49 MTCO2e per year, resulting in 3.69 MTCO2e/SP/year. Therefore, with incorporation of mitigation, the project's emissions meet the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects.

The project is located adjacent to a Riverside Transit Bus Stop on Moreno Beach Drive, north of Championship Drive. Mitigation measure AQ-2will provide sidewalks onsite to encourage use of nearby sources of alternative transportation which reduces the production of mobile source GHG emissions. Mitigation measure AQ-3 reduces the project's water requirements and therefore the energy and GHG emissions associated with water transport. Mitigation measure AQ-4 reduces the project's solid waste footprint and therefore the GHG emissions associated with transporting, processing and land-filling solid waste. Mitigation measure AQ-5 requires the installation of ENERGY-STAR appliances wherever appliances are to be installed on site. This reduces the project's electricity needs and therefore, the GHG emissions associated with energy production.

Therefore, with incorporation of mitigation measures AQ-2 through AQ-5 (as detailed in Section III a) above), project-related GHG emissions are also considered to be less than significant.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 – Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project would be within the same character as the previously approved project. The proposed Project would result in similar duration and intensity of construction activities relative to the original 2018 Project, and both the original Project and proposed Project would be operationally identical. As such, the proposed construction modifications would not result in an increase in greenhouse gas emissions or related impacts to global climate change or conflicts with applicable climate change plans, policies, or regulations. Additionally, the 2020 Modified Project should not generate additional emissions since the 2020 Modified Project is replacing the use of the previous clubhouse with a smaller building footprint and similar operational characteristics; it would not increase project-related emissions.

Finding: The Project's potential impacts regarding greenhouse gas emissions are less than those analyzed in the previously approved document and would be potentially less as the square footage has decreased. Impacts are fully analyzed in the 2018 Project IS/MND

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

and no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The proposed project would 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. The applicable plans for the proposed project are the City of Moreno Valley Greenhouse Gas Analysis, adopted February 2012 and the City of Moreno Valley Energy Efficiency and Climate Action Strategy (CAS), adopted October 2012. The City of Moreno Valley has adopted these plans in order to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Applicable reduction measures in the CAS include a requirement for energy efficient design for all new residential buildings to be 10% beyond the current Title 24 standards (R2-E1), to facilitate the use of renewable energy (such as solar [photovoltaic] panels or small wind turbines) for new residential developments (R2-E2). Please see Kunzman Air Quality Report and Global Climate Change Impact Analysis for additional details on the CAS.

SCAQMD's screening thresholds use 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. As the SCAQMD uses EO S-3-05 as the basis for their screening level, and EO S-3-05 includes the long-term goal to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050, the project would also be consistent with the goal of SB 32 (to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030). Therefore, projects that meet the current interim emissions targets/thresholds established by SCAQMD (as described in Section V, Air Quality Standards) would also be on track to meet the reduction targets for 2030. Furthermore, all 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.

Therefore as the project's mitigated emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with SB 32 and the goals of AB 32; which is also the goal of the City of Moreno Valley Greenhouse Gas Analysis.

At a mitigated level of 3.69 MTCO2e/SP/year, the project's GHG emissions fall well below the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. Furthermore, the project will comply with applicable Green Building Standards and City of Moreno Valley's policies regarding sustainability (as dictated by the City's General Plan and Greenhouse Gas Analysis (CAS)). Therefore, with incorporation of mitigation identified in III(a) above, and compliance with measures R2-E1 and R2-E2 from the City's CAS, the project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 – Appendix A)

Discussion of 2020 Modified Project: The 2020 Modified Project would be within the same character as the previously approved 2018 Project. Both the construction emissions and operational emissions would be equal to or less than those analyzed for the previously-approved Project as the 2020 Modified Project proposes a clubhouse which is approximately 5,000 square feet, which is less than half the size of the original clubhouse on the property. Additionally, the 2020 Modified Project should not generate additional emissions since the 2020 Modified Project is replacing the use of the previous clubhouse with a smaller building footprint and similar operational characteristics; it would not increase project-related emissions.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: The Project's potential impacts regarding greenhouse gas emissions are less than those analyzed in the previously approved document and would be potentially less as the square footage has decreased. Impacts are fully analyzed in the 2018 Project IS/MND and no new or substantially increased significant effects result from the Project. The 2020 Modified Project would comply with applicable plans, policies or regulations adopted for the purpose of reducing the emissions of greenhouse gases. No new mitigation measures are required for the 2020 Modified Project.

VIII. **HAZARDS AND HAZARDOUS MATERIALS.** Would the project?				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The proposed project, specifically the operation and maintenance of the golf course, is associated with the routine use of hazardous materials and thus could create a significant hazard to the public or the environment. Implementation of and compliance with industry safety measures will result in a less than significant impact to the environment.

(Source: Phase I Environmental Site Assessment, BA Environmental)

Discussion of 2020 Modified Project: The 2020 Modified Project would be of the same character and integrity in use as the previously approved project. The Modified Project would not increase risks related to hazards or hazardous materials relative to the original 2018 Project. The proposed construction would not require additional construction equipment or increase use of such equipment, and the renovation and removal of existing infrastructure would still require mitigation to address potential hazards associated with asbestos-containing materials, moisture intrusion, contaminated soils or groundwater, and other initiatives to mitigate impacts to less than significant. Given the similarity in construction activities and operational characteristics, the proposed Project would not result in new or greater impacts in this regard. Additionally, the 2020 Modified Project will comply with applicable federal, state and local regulations. The clubhouse and its operations were previously analyzed. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location and basic uses have not changed, potential impacts related to transport, use or disposal of hazardous materials are no different from those analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The Phase I analysis identified a number of existing conditions wherein potentially hazardous materials, such as machinery oils, landscape fertilizers and pesticides, were present as a result of the prior ongoing operation and maintenance of the golf course. The following mitigation measures will ensure that any impacts of said materials are less than significant.

HAZ-1: Any suspect asbestos-containing materials (ACMs) should be sampled prior to any renovation or demolition. Any identified ACMs scheduled for renovation or demolition, or noted to be damaged, should be abated by a licensed asbestos abatement contractor, and disposed of according to all state and local regulations;

HAZ-2: Repair all sources of moisture intrusion and replace all mold impacted or water-damaged building materials. A further visual assessment for mold should be completed and any mold observed should be abated by a contractor experienced in mold abatement.

HAZ-3: If soil contamination is suspected or observed in the project area, then excavated soils should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

HAZ-4: If during construction/demolition of the project, soils and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. Should contaminated soils and/or groundwater be encountered, a remediation plan will be formulated and implemented in accordance with all applicable regulation and overseen by the City of Moreno Valley and Riverside County Department of Environmental Health.

(Source: Phase I Environmental Site Assessment, BA Environmental)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same parking lot area and operate with the same uses with a smaller building footprint as the 2018 Project. Furthermore, Conditions of Approval required of the approved Project would also be required of the Modified Project.

Finding: As the Modified Project's location and basic uses have not changed, potential impacts related to release of hazardous materials are no different from those analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				■

2018 Project IS/MND Conclusion: No Impact – Ridgecrest Elementary School is located 0.30 miles from the project site and Landmark Middle School is located approximately one half mile from the propose multi-family residential site and thus the project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

(Source: Project Plans)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the parking lot area analyzed in 2018 and like the previously approved 2018 Project, will comply with applicable federal, state and local regulations. The project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Furthermore, Conditions of Approval required of the approved Project would also be required of the Modified Project.

Finding: As the 2020 Modified Project's location and land use has not changed, potential impacts related to emissions of hazardous materials are no different from those addressed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: No Impact – The project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and will not create a significant hazard to the public or the environment.

(Source: Project Plans; City of Moreno Valley)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the parking lot area analyzed in 2018 and like the previously approved 2018 Project, will comply with applicable federal, state and local regulations. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location has not changed, potential impacts related to creation of significant hazards to the public or environment are no different from those addressed in the previously approved document. Therefore, no new or

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: No Impact – The project is not located within two miles of a public airport or public use airport. The project site is within the FAR Part 77 Military Outer Horizontal Surface Limits of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Said plan does not identify the project site as being within a Land Use Compatibility Zone nor as being a potential safety hazard for people residing or working in the project area.

(Source: March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, November 2014 – Appendix)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed directly north of the existing clubhouse which was discussed and analyzed in the previously approved 2018 Project. The Project Site is not located within two miles of a public airport or public use airport. Even as the project site is located within the FAR Part 77 Military Outer Horizontal Surface Limits of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, the project would not create new areas that would be affected or result in exposure to hazardous materials. The site is not within an airport Land Use Compatibility Zone.

Finding: As the 2020 Modified Project's potential impacts regarding hazardous materials are similar to those analyzed in the previously approved Project IS/MND Thus, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				■

2018 Project IS/MND Conclusion: No Impact – The project is not located within the vicinity of a private airstrip.

(Source: City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same area analyzed in the 2018 Project . No new areas would be affected or result in exposure to hazardous materials.

Finding: As the 2020 Modified Project's potential impacts regarding hazardous materials are similar to those analyzed in the previously approved document, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?				■

2018 Project IS/MND Conclusion: No Impact – The project will not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan.

(Source: City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed within the parking lot area located north of the existing clubhouse that was discussed and analyzed in the previously approved 2018 Project. No new areas would be affected or result in exposure to hazardous materials. The 2020 Modified Project would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project's potential impacts regarding hazardous materials are similar to those analyzed in the previously approved 2018 Project IS/MND, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

h) 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?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site location for the proposed apartment complex is approximately 500 feet northwest of the high-fire area associated with Mount Russell and would not 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.

(Source: City General Plan; Google Earth)

Discussion of Modified Project: The 2020 Modified Project is proposed within the parking lot area located north of the existing clubhouse that was discussed and analyzed in the previously approved 2018 Project. Because there is not a significant change in the character and location of the project, no new areas would be affected or result in an increased exposure to significant risk of loss, injury or death involving wildland fires.

Finding: As the 2020 Modified Project's potential impacts regarding hazardous materials are no different from those analyzed in the previously approved document, no new or substantially increased significant effects would result from implementation of the Project. Impacts are fully analyzed in the 2018 Project IS. No new mitigation measures are required for the 2020 Modified Project.

IX. **HYDROLOGY AND WATER QUALITY**. Would the project:				
a) Violate any water quality standards or waste discharge requirements?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil) which would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities for the apartment complex would temporarily expose soils to wind and water erosion that would contribute to downstream sedimentation. Storm flows from the existing golf course bypass the development and will continue to be conveyed to the existing storm drain under Moreno Beach Drive. The proposed project would comply with all permits and development guidelines associated with urban water runoff and discharge set forth by the City of Moreno Valley and the Regional Water Quality Control Board. A Preliminary Water Quality Management Plan has been approved and a Final Water Quality Management Plan is required prior to any grading on the site to address urban runoff. A Final Water Quality Management Plan will include site design best management practices (BMP's), source control BMP's, treatment control BMP's, operation and maintenance BMP's, and sources of funding BMP's for BMP implementation. With the approval of the storm drainage facilities by the City Engineer and Riverside County Flood Control District as well as complying with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix F)

Discussion of Modified Project: Project construction activities are subject to implementation of known best management practices as detailed in the Project Specific Water Quality Management Plan prepared by Winchester Associates, Inc. (July 2017). Compliance with water quality standards during Project operation would still be addressed through the water quality features and best management practices incorporated into the Project design. As the Project Area is currently developed with an existing parking lot, the development of the 2020 Modified Project would not add impervious area to the site. Grading activities for the clubhouse would temporarily expose soils to wind and water erosion that would contribute to downstream sedimentation, however, the project would comply with the Conditions of Approval required of the 2018 Project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: The impacts to water quality are similar to those analyzed in the previously approved document. Compliance with NPDES requirements of the SWPPP and WQMP BMPs would reduce potential impacts to water quality. Furthermore, the Modified Project would comply with the Conditions of Approval of the 2018 Project IS/MND. Therefore, no new or substantially increased significant effects result from implementation of the Project. Impacts are fully analyzed under the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Eastern Municipal Water District would provide the proposed project with water supplies. Water supplies are adequate to serve the proposed project. Although the project would cover a majority of the site with impervious surfaces, the landscaped area would still provide a means for groundwater recharge. Impacts would be less than significant in that the project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed within the same parking lot directly north of the existing clubhouse as discussed and analyzed in the previously approved Project. Furthermore, the square footage of the 2020 Modified Project is slightly less than the previously approved 2018 Project, which would potentially reduce water demand.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on water supply or recharge, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – There is an existing storm flow of approximately 200 CFS from an offsite tributary that bisects the site in a northwesterly direction. These flows currently run above-ground through the site. The proposal is to convey these flows in an underground pipe, outletting easterly of Moreno Beach Drive at an existing storm drain where it is conveyed under the street. As the storm flows will be conveyed underground, there will be a reduction in both erosion and siltation. The existing golf course drainage will not be altered.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

Discussion of 2020 Modified Project: The impacts to the Project from alteration of existing drainage are less than significant and similar to those analyzed in the previously approved 2018 Project. Compliance with City standards and the NPDES requirements would reduce potential impacts to water quality from erosion or siltation. The 2020 Modified Project does not propose additional changes to altering the existing drainage pattern of the site or area.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on drainage, no new or substantially increased significant effects result from the Project. Potential impacts are fully analyzed under the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – While the conveyance of storm flows that currently run naturally through the site will be piped, all offsite tributary flows will be accepted and outletted at the existing storm drain at Moreno Beach Drive. The runoff from the proposed development will not substantially increase the existing flows and will not result in on-site or off-site flooding. Further, any increased runoff due to the site development will be mitigated with the construction of an infiltration basin. Storm drain plans and hydrology/hydraulic calculations will be approved by the City's Land Development-Engineering Department.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

Discussion of 2020 Modified Project: The 2020 Modified Project will replace the existing clubhouse. The proposed Modified Project will comply with applicable federal, state and local regulations. Furthermore, Conditions of Approval required of the approved 2018 Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project's location and basic uses have not changed, potential impacts related to release of hazardous materials are no different from those analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – All storm drainage improvement would be developed to the standards of the City Engineer and the Riverside County Flood Control Agency. Additionally, the project has been designed in accordance with the City's standard conditions of approval, which include measures pertaining to storm drainage facilities and runoff.

As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. With the incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F ; Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix I).

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same parking lot area and be of similar uses. The proposed clubhouse would also comply with applicable federal, state and local regulations. The Modified Project would include the development of a clubhouse on the existing parking lot, which is already paved and considered an impervious surface. Grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation, however, the Modified Project shall comply with the Conditions of Approval required of the approved 2018 Project. The 2020 Modified Project would comply with applicable storm water discharge permits, requirements of the WQMP, and incorporate BMPs.

Finding: The impacts to water quality are similar to those analyzed in the previously-approved document. Compliance with NPDES requirements of the SWPPP and WQMP BMPs would reduce potential impacts to water quality. Therefore, no new or substantially

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

increased significant effects result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

f) Otherwise substantially degrade water quality?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. With the incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F ; Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix I)

Discussion of 2020 Modified Project: Project construction activities are subject to implementation of known best management practices as detailed in the required Storm Water Pollution Prevention Plan (SWPPP). Compliance with water quality standards during Project operation would still be addressed through the water quality features and best management practices incorporated into the Project design. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: The impacts to water quality are similar to those analyzed in the previously approved document. Compliance with NPDES requirements of the SWPPP and WQMP BMPs would reduce potential impacts to water quality. Therefore, no new or substantially increased significant effects result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007.

The project will not place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed to replace the existing clubhouse within the same parking lot as discussed and analyzed in the previously approved Project. No new areas would be affected or result in exposure to flood hazard.

Finding: As the 2020 Modified Project's potential impacts regarding flood hazard are no different from those analyzed in the previously approved document, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

2018 Project IS/MND Conclusion: Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007.

The 417-unit apartment project as designed and as conditioned, will not place structures which would impede or redirect flood flows. The project will not place within a 100-year flood hazard area structures which would impede or redirect flood flows.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

Discussion of Modified Project: The 2020 Modified Project would replace the existing clubhouse within the same parking lot as discussed and analyzed in the previously approved 2018 Project. No new areas would be affected or result in exposure to flood hazard.

Finding: As the 2020 Modified Project's potential impacts regarding flood hazard are no different from those analyzed in the previously approved document, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007. The 417-unit apartment project as designed and as conditioned, will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as the result of the failure of a levee or dam. The project is not located in a flood inundation area and thus will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. The nearest dam is the Perris Lake Dam located approximately 3.7 miles southwest of the project site.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F ; Google Earth)

Discussion of 2020 Modified Project: The 2020 Modified Project is proposed within the parking lot directly north of the existing clubhouse as discussed analyzed in the previously approved Project. No new areas would be affected or result in exposure to flood hazard.

Finding: As the 2020 Modified Project's potential impacts regarding flood hazard are no different from those analyzed in the previously approved 2018 Project IS/MND, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

j) Inundation by seiche, tsunami, or mudflow?				■

2018 Project IS/MND Conclusion: No Impact – The site is not identified in the General Plan as a location subject to seiche, tsunami, or mudflow.
The project will not expose people to inundation by seiche, tsunami, or mudflow.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same parking lot area and have the same Project boundary as discussed analyzed in the previously approved 2018 Project. No new areas would be affected or result in exposure to flood hazards such as tsunami, seiche, or mudflow.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project's potential impacts regarding flood hazard are no different from those analyzed in the previously approved document, no new or substantially increased significant effects would result from implementation of the Project. No new mitigation measures are required for the 2020 Modified Project.

X. **LAND USE AND PLANNING**. Would the project:				
a) Physically divide an established community?				■

2018 Project IS/MND Conclusion: No Impact – The project site is surrounded by existing residential development and is essentially an extension of the existing 176-unit multi-family apartment complex immediately north of and adjacent to the project site. The project will not physically divide an established community.

(Source: Project Plans; City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same parking lot area as discussed analyzed in the previously approved Project. In addition, the proposed clubhouse would include similar land uses when compared to the existing clubhouse. The 2018 Project IS/MND did not identify any impacts to land use and planning; no mitigation was required. No new areas would be affected or result in division of an established community.

Finding: The 2020 Modified Project has no potential to disrupt or divide the physical arrangement of an established community (including a low-income or minority community). Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – With the approval of a General Plan Amendment and Specific Plan Amendment, the proposed development of 417 residential dwelling units would be consistent with the City General Plan Land Use Designation as well as the land use and text established in the Moreno Valley Ranch Specific Plan. The project proposes to amend the General Plan from Open Space to Residential (R20) and the Moreno Valley Ranch Specific Plan land use designation from Golf Course (GC) to High Residential (HR) to permit the development of the multi-family residential complex. The proposed project would be consistent with General Plan Community Development Goal 2.4 and Objective 2.2 regarding the provisions of a wide variety of residential housing opportunities throughout the community, while remaining compliant with Parks, Recreation and Open Space Goal 4.2 and associated Objective 4.2 and Policies 4.2.1 and 4.2.2 regarding the provisions of safe, affordable and accessible recreation opportunities.

(Source: City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would occupy the same area as discussed analyzed in the previously approved Project. In addition, the proposed clubhouse would include similar land uses when compared to the existing clubhouse. The 2018 Project IS/MND did not identify any impacts to land use and planning; no mitigation was required. No new areas would be affected or result in conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the Project.

Finding: The 2020 Modified Project's potential impacts regarding land use designation and policies of the City of Moreno Valley General Plan (including those of any applicable Specific Plan) are not beyond those discussed and analyzed in the previously approved 2018 Project IS/MND. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

2018 Project IS/MND Conclusion: No Impact – The project site is not located within a designated Criteria Area as defined by the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The project will comply with MSHCP policies, including the requirement to pay the MSHCP mitigation fees for 417 dwelling units. Based on the current adopted mitigation fee, this would provide approximately $440,000.00 to the Regional Conservation Authority towards the implementation efforts and programs. No impacts would occur.

(Source: General Biological Reconnaissance and Habitat Assessment, Tetra Tech, Inc., November 2017; City's Adopted MSHCP Fee Ordinance)

Discussion of Modified Project: The Modified Project's potential impacts regarding land use designation and policies of the City of Moreno Valley General Plan (including those of any applicable Specific Plan) are not beyond those discussed and analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on habitat conservation plans, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

XI. **MINERAL RESOURCES.** Would the project:				
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?				■

2018 Project IS/MND Conclusion: No Impact – No known mineral resources exist on the project site and thus will not 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.

(Source: City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would not disturb any area greater than that already analyzed in the previously approved document. The Project is proposed in the same parking lot directly north of the existing clubhouse. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project would not result in a substantial adverse change in the availability of a known mineral resource, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: No Impact – The project will not 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 in that no such mineral resources exist on the project site.

(Source: City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would not disturb any area greater than that already analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: As the 2020 Modified Project would not result in a substantial adverse change in the availability of mineral resources, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS
XII. **NOISE.** Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				■

A Noise Impact Analysis was prepared by Kunzman Associates, Inc. in September 2016. In addition to adherence to the City of Moreno Valley's policies found in the General Plan Noise Element and Municipal Code limiting the construction hours of operation, the mitigation measures listed below are recommended to reduce construction noise and vibrations, emanating from the proposed project.

2018 Project IS/MND Conclusion: Less Than Significant Impact – The analysis revealed that the ambient noise level near the center of the apartment complex site was 47.6 dBA L_{eq}, within City standards. Sensitive receptors that may be affected by project generated noise include the multi-family and single-family residential dwelling units surrounding the project site. While short-term noise levels during construction will result in a temporary and intermittent increase in noise levels, the long-term noise generated by the proposed multi-family residential project can be expected to be comparable to the noise generated by the existing multi-family residential development immediately to the north the proposed project site. The multi-family residential complex will comply with all State and Local building codes and regulations and will not expose persons to or generate noise levels in excess of standards established in the City General Plan.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would not substantially alter the present or planned land use of this area, and noise impacts from the construction and operation of those land uses would be similar to those examined in previously approved document. Despite the minor modifications to the proposed Project and related construction, the overall intensity, equipment mix, duration, and proximity to sensitive receptors would not be notably different than under the previously approved 2018 Project IS/MND. Furthermore, the Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: The 2020 Modified Project's potential impacts regarding Project-related noise impacts are similar to those analyzed in the previously approved document. With adherence to the design requirements and City recommendations, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. The nearest existing structures to the project site are located approximately 25 feet to the north of the project site. The threshold at which there may be a risk of architectural damage to normal houses with plastered walls and ceilings is 0.20 PPV in/second. Primary sources of vibration during construction would be from bulldozers. A large bulldozer could produce up to 0.089 PPV at 25 feet. Therefore, at up to 0.089 PPV at 25 feet a large bulldozer yields a worst-case noise level well below the threshold of perception and below any risk of architectural damage.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

Discussion of 2020 Modified Project: Ground-borne vibration and ground-borne noise is usually only potentially significant if a sensitive receptor is located adjacent to a large source of such vibration such as a railroad track. There are no railroad tracks adjacent to the Project site. The primary source of vibration noise within the Project would be from construction vehicles and equipment. Such uses are temporary and scattered over the site as construction phases are implemented. There is no permanent

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

source of vibration noise that is proposed by the Project, nor does the Project place any sensitive receptors near existing sources of vibration noise.

Finding: The 2020 Modified Project would not expose persons to or generate excessive ground-borne vibration or ground-borne noise levels. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The ongoing, post-construction operation of the proposed multi-family residential complex, including vehicular traffic, resident activity, etc., will generate noise levels very similar to the existing multi-family residential complex directly north of and adjacent to the proposed apartment complex site. Industry standards accept the premise that a new land use located adjacent to an existing same land use, will result in an increase in ambient noise level by no more than 3.0dBA. Thus, it can be expected that the proposed apartment complex, located adjacent to an existing apartment complex, will not increase the ambient noise level by more than 3.0dBA. Addressing environmental safety and noise in particular, Section 6.4.3, General Plan indicates that "people in general cannot perceive an increase or decrease of 1.0dBA," while "a 3.0 dBA increase is considered noticeable" and that "an increase of 5.0dBA is often necessary before any noticeable change in community response (i.e. complaints) would be expected." The General Plan establishes that an increase of 3.0dBA would not necessarily be problematic while an increase in 5.0 dBA would result in complaints from affected residents. Therefore, Project development will not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. The resultant impact level is less than significant.

NOI-1 Provide forced air circulation systems or air conditioning systems shall be provided for the group of multi-family attached residential dwelling units located immediately west of the driving range(15100 Moreno Beach Drive, Assessor's Parcel Number 304-100-002).

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan, City Municipal Code)

Discussion of 2020 Modified Project: The 2020 Modified Project would not substantially alter the present or planned land use of this area, and noise impacts from construction and operations from those land uses would be similar to those examined in previously approved document. The 2020 Modified Project proposes a new clubhouse in place of the existing clubhouse. Therefore, a substantial increase in ambient noise levels compared to the 2018 Project is not anticipated based on the size, uses, and location of the proposed clubhouse. Furthermore, the Conditions of Approval required of the approved 2018 Project would also be required of the 2020 Modified Project.

Finding: The 2020 Modified Project's potential impacts regarding Project-related noise impacts are similar to those analyzed in the previously approved document. With adherence to the design requirements and mitigation measure NOI-1, no new or substantially increased significant effects result from the Project. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – The construction of the apartments will result in a temporary increase in ambient noise levels, particularly in that area directly adjacent to the existing apartments. Existing multi-family attached and single-family detached residential dwelling units located to the north, east, south, and west of the project site may be affected by short-term noise impacts associated with the transport of workers, the movement of construction materials to and from the project site, ground clearing, excavation, grading, and building activities.

Site grading is expected to produce the highest sustained construction noise levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

settings. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, an excavator, a backhoe, and a water truck (modeled as a dump truck) operating between 25 and 350 feet from the property line. Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels have the potential to reach 84.3 dBA L_{eq} and 87.7 dBA_{Lmax} at the property line during grading.

Construction noise is considered a short-term impact and would be considered significant if construction activities are undertaken outside the allowable times as described by the City's Municipal ordinances 8.14.040 and 8.14.050. The City of Moreno Valley General Plan Objective 6.5 requires the minimization of noise impacts from significant noise generators such as construction. Policy 6.5.2 states that construction activities shall be operated in a manner that limits noise impacts on surrounding uses. Mitigation measures to minimize the impact of construction on nearby sensitive receptors are provided below:

NOI-2 During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

NOI-3 The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

NOI-4 Equipment shall be shut off and not left to idle when not in use.

NOI-5 The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

NOI-6 Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

Discussion of 2020 Modified Project: The 2020 Modified Project would not substantially alter the present or planned land use of this area, and noise impacts from construction and operations from those land uses would be similar to those examined in previously approved document. Furthermore, mitigation measures and Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: The 2020 Modified Project's potential impacts regarding Project-related noise impacts are similar to those analyzed in the previously approved document. With adherence to the design requirements and to mitigation measure NOI 2-6, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed under the 2018 Project IS/MND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

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 expose people residing or working in the project area to excessive noise levels?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project is not located within two miles of a public airport or public use airport. The project site is within the FAR Part 77 Military Outer Horizontal Surface Limits of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Said plan does not identify the project site as being within a Land Use Compatibility Zone and thus would not expose people residing or working in the project area to excessive noise levels.

(Source: March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, November 2014)

Discussion of 2020 Modified Project: The 2020 Modified Project would not substantially alter the present or planned land use of this area and would occupy the same area and have the same Project boundary as discussed and analyzed in the previously approved Project. No new areas would be affected or result in impacts related to airport noise.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project would not result in a substantial adverse effect due to exposure to airport noise, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the Modified Project.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				■

2018 Project IS/MND Conclusion: No Impact – The project is not within the vicinity of a private airstrip and therefore, would the not expose people residing or working in the project area to excessive noise levels.

(Source: City General Plan)

Discussion of Modified Project: The Modified Project would not substantially alter the present or planned land use of this area and would occupy the same area and within the same parking lot as discussed and analyzed in the previously approved Project. No new areas would be affected or result in impacts related to airport noise.

Finding: As the Modified Project would not result in a substantial adverse effect due to exposure to airport noise, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the Modified Project.

XIII. **POPULATION AND HOUSING.** Would the project:				
a) Induce substantial 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)?				■

General Discussion – It should be noted that, as indicated earlier in this document, the Moreno Valley Ranch Specific Plan, with 12,703 residential dwelling units, and supporting commercial, educational, and recreational land uses on 3,959 acres, was approved by the City with full CEQA analysis, including potential impacts to Public Services. The approval of Specific Plan Amendments Nos. 1 through 8 have reduced the number of dwelling units in the Moreno Valley Ranch community by slightly more than 2,000 dwelling units. The Specific Plan Amendment No. 9, currently under consideration, would add back 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units and an expected associated incremental decrease on demand for public services.

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project is located in a fully developed area of the City and is essentially an extension of the existing multi-family apartment complex immediately to the north. The project is not required to extend roads or other infrastructure. Although proposing 417 new multi-family homes with an estimated population increase of approximately 1,418 persons, the project will not induce substantial population growth in an area, either directly or indirectly.

(Source: Project Plans; City General Plan)

Discussion of 2020 Modified Project: The proposed Project would occupy the same parking lot area as discussed and analyzed in the previously approved document. The Modified Project would not create an increase in the overall intensity of future uses since it is replacing the existing clubhouse analyzed in the 2018 Project IS/MND.

Finding: The proposed Project does not have the potential to create a demand for additional housing beyond what was discussed and analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				■

2018 Project IS/MND Conclusion: No Impact – The project does not propose remove existing housing stock. Thus, the project will not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

(Source: Project Plans)

Discussion of 2020 Modified Project: The proposed Project would occupy the same area as discussed and analyzed in the previously approved document. The 2020 Modified Project would not create an increase in the overall intensity of future uses from the 2018 Project.

Finding: The proposed Project has no potential to displace existing housing, beyond what was discussed/analyzed in the previously-approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				■

2018 Project IS/MND Conclusion: No Impact – The project does not propose to remove existing housing stock. Thus, the project will not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

(Source: Project Plans)

Discussion of 2020 Modified Project: The proposed Project would occupy the same area and have the same Project boundary as discussed and analyzed in the previously approved document. The 2020 Modified Project would not create an increase in the overall intensity of future uses.

Finding: The proposed Project has no potential to displace substantial numbers of people, beyond what was discussed/analyzed in the previously approved document. Therefore, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

XIV. **PUBLIC SERVICES**. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government 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:

General Discussion – It should be noted that, as indicated earlier in this document, the Moreno Valley Ranch Specific Plan, with 12,703 residential dwelling units, and supporting commercial, educational, and recreational land uses on 3,959 acres, was approved by the City with full CEQA analysis, including potential impacts to Public Services. The approval of Specific Plan Amendments Nos. 1 through 8 have reduced the number of dwelling units in the Moreno Valley Ranch community by slightly more than 2,000 dwelling units. The Specific Plan Amendment No. 9, currently under consideration, would add back 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units and an expected associated incremental decrease on demand for public services.

a) Fire protection?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site presently receives fire protection and emergency services. The project with 417 new dwelling units will result in an incremental increase in the need for fire protection services. Participation in existing City development impact fee programs will ensure that adequate fire protection services will continue to be available without the need for new facilities.

(Source: City General Plan)

Discussion of 2020 Modified Project: The Modified Project is proposed within the parking lot area located north of the existing clubhouse as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses since it is replacing the existing clubhouse analyzed in the 2018 Project IS/MND.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the Modified Project would not result in a substantial adverse effect on public services, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the Modified Project.

b) Police protection?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site presently receives police protection. The project with 417 new dwelling units will result in an incremental increase in the need for police protection services. Participation in existing City development impact fee programs will ensure that adequate police protection services will continue to be available without the need for new facilities.

(Source: City General Plan)

Discussion of 2020 Modified Project: The proposed Project would occupy the same area and as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on public services, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

c) Schools?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project with 417 new dwelling units will result in an incremental increase in education facilities and schools. Based on current Moreno Valley Unified School District student generation rates for multi-family residential development, the project will result in an additional 149 K-5 students, 57 middle school students and 64 high school students. Participation in existing development impact fee programs will ensure that adequate school facilities will continue to be available.

(Source: Moreno Valley Unified School District)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses as analyzed in the 2018 Project IS/MND.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on public services, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

d) Parks?				■

2018 Project IS/MND Conclusion: No Impact – The project will re-establish the golf course for public use and create a new park/open space facility that will provide exercise training facilities for public use. The Recreation Park & Exercise Trail will include exercise stations, warm-up/stretching area, 5K running course, youth golf practice facilities, restroom and water station. The golf course and the new park/exercise training facility will be maintained by the golf course operator. Existing public parks and distance from the proposed apartment complex include Fairway Park (0.4 miles), Ridgecrest Park (0.5 miles) and Celebration Park (0.6 miles).

(Source: Project Plans; City General Plan; Google earth)

Discussion of 2020 Modified Project: The proposed Project would occupy the same area as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses since it is replacing the existing clubhouse.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on public services, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

e) Other public facilities?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site is located in a fully developed area of the City and enjoys existing services, facilities and utilities. The project will result in an incremental increase in the need for public facilities such as social services, adult education, etc. However, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government 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.

(Source: City of Moreno Valley; County of Riverside)

Discussion of 2020 Modified Project: The proposed Project would occupy the same parking lot area as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses since it is replacing the existing clubhouse.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on public services, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

XV. **RECREATION.**				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				■

2018 Project IS/MND Conclusion: No Impact – The project will re-establish the golf course for public use and create a 85-acre park/open space facility, maintained by the golf course operator, that will provide exercise training facilities for public use and therefore will not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Existing public parks and distance from the proposed apartment complex include Fairway Park (0.4 miles), Ridgecrest Park (0.5 miles) and Celebration Park (0.6 miles).

(Source: Project Plans; City General Plan; Google Earth)

Discussion of 2020 Modified Project: The proposed Project would occupy the same area as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on recreation, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

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?				■

2018 Project IS/MND Conclusion: No Impact – The project will re-establish the golf course for public use and create a park/open space facility that provides exercise training facilities for public use. The project does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

(Source: Project Plans)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Discussion of Modified Project: The proposed Project would occupy the same area as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses.

Finding: As the Modified Project would not result in a substantial adverse effect on recreation, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the Modified Project.

XVI. **TRANSPORTATION/TRAFFIC.** Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – With mitigation incorporated as noted in b) below, the project will not conflict with the Riverside County Congestion Management Program (CMP) or the City General Plan Circulation Element establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

(Source: City General Plan)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse within the same parking lot as discussed and analyzed in the previously approved document. The modified Project would not change the access and circulation proposed in the Approved 2018 Project. Additionally, the proposed clubhouse will replace the existing clubhouse and will have a smaller building footprint. There would be no substantial additional increase in the amount of traffic on-site from the development of the Modified Project.

Finding: As the Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the Modified Project.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				■

2018 Project IS/MND Conclusion: Less Than Significant With Mitigation Incorporated – With mitigation incorporated as noted below, the project will not conflict with level of service standards and travel demand measures, or other standards established by the City.

Mitigation Measures:

CIR-1 Prior to the issuance of Certificates of Use and Occupancy, construct and/or repair Championship Drive, at proposed project access driveway, from the west boundary to the east boundary at its ultimate half-section width in conjunction with development, including landscaping and parkway improvements.

CIR-2 Prior to the issuance of Certificates of Use and Occupancy, construct and/or repair Moreno Beach Drive, at proposed access driveway, from the north project boundary to the south project boundary its half-width section in conjunction with development, including landscaping and parkway improvements.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

CIR-3 On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

CIR-4 Sight distance at project accesses shall comply with standard California Department of Transportation and City of Moreno Valley sight distance standards. The final grading, landscaping and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to the issuance of grading permits.

CIR-5 Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

(Source: City General Plan; Traffic Impact Analysis, Kunzman Associates, December 2017)

Discussion of 2020 Modified Project: The proposed Project would be located within the same parking as discussed and analyzed in the previously approved document. Since the proposed Project is replacing the existing clubhouse, it would not have an increase in the overall intensity of future uses and would not increase the amount of Project-related traffic beyond that already analyzed. Furthermore, with mitigation measures (CIR-1 through CIR-5) described in the 2018 Project IS/MND, the proposed Project would not conflict with the level of service standards and travel demand measures, or other standards established by the City.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				■

2018 Project IS/MND Conclusion: No Impact – The project is not in proximity to public or private airports.

(Source: City General Plan)

Discussion of Modified Project: The proposed Project would be located directly north of the existing clubhouse in the same parking lot as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses and would not increase the amount of Project-related traffic beyond that already analyzed.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new impacts and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				■

2018 Project IS/MND Conclusion: No Impact – The project will utilize existing circulation improvements and will not modify existing design features so as to increase hazards, nor will the project introduce incompatible uses.

(Source: Project Plans)

Discussion of 2020 Modified Project: The proposed Project would be located directly north of the existing clubhouse in the same parking area as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses and would not increase the amount of Project-related traffic beyond that already analyzed.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

e) Result in inadequate emergency access?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Mitigation Measure CIR-1 requires that improvements be made to Championship Drive such that emergency access will be provided, permitting the residents of the residential complex to exit the project site in the event of an emergency, via Championship Drive. With mitigation incorporated as noted above, especially CIR-1, the project will ensure adequate emergency access.

(Source: Project Plans)

Discussion of 2020 Modified Project: The proposed Project is proposed directly north of the existing clubhouse in the same parking lot as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses and would not increase the amount of Project-related traffic beyond that already analyzed.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project. No new mitigation measures are required for the Modified Project.

f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				■

2018 Project IS/MND Conclusion: No Impact – City General Plan Circulation Objective 5.1 states that the City shall "create a safe, efficient and neighborhood-friendly street system." Policy 5.1.1 states that the City shall "plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians and bicycles." The proposed project is consistent with these objectives and policies. Additionally, the project is in compliance with Circulation Objective 5.3, which endeavors to "maintain Level of Service (LOS) "C" on roadway links, wherever possible." The project will not conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

(Source: Moreno Valley Ranch Specific Plan; City General Plan Circulation Element)

Discussion of 2020 Modified Project: The proposed Project would is proposed directly north of the existing clubhouse in the same parking area as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses and would not increase the amount of Project-related traffic beyond that already analyzed.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on transportation/traffic, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

XVII. TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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:				
a) 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 section 5020.1(k), or				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

2018 Project IS/MND Conclusion: Less Than Significant Impact – In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes. While there are no known resources on the project site that are 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 section 5020.1(k), Mitigation Measures CR-1 through CR-6 have been formulated, as set forth in Section V. Cultural Resources of this document and copied below, ensuring that any impacts would remain at a less-than-significant level.

Mitigation Measures:

CR-1: Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1. The location of the future reburial area shall be identified on a confidential exhibit on file with the City and concurred to by the Consulting Native American Tribal Governments prior to certification of the environmental document.

CR-4: The City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find.

CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61). Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.

CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, has a low potential for resources to be uncovered unless deep earth moving activity is applied. There are no known resources on the Project site or in the immediate vicinity that are 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 section 5020.1(k). As described in the 2018 Project IS/MND, the original Project would be required to comply with mitigation measures CR-1 through CR-6 to mitigate potential impacts to tribal cultural resources. As there are no know resources on the Project site or in the Project vicinity, no new impacts are anticipated and mitigation measures CR-1 through CR-6 will sufficiently reduce potential impacts to a less than significant level.

Finding: Due to the low potential for cultural resources on the Project site and the mitigation measures incorporated into the 2018 Project IS/MND, potential impacts are fully analyzed under the previously approved document. The 2020 Modified Project would be required to comply with the Approved Project's Conditions of Approval as well as the mitigation measures described in the document. As there are no known resources on the Project site or in the immediate vicinity that are listed or eligible for listing in the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

document, ensuring that any impacts would remain at a less-than-significant level. Impacts are fully analyzed under the 2018 Project IS/MND. No new mitigation measures and/or no modifications to the existing mitigation measures are required for the 2020 Modified Project.

b) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes. The City has received correspondence from the Pechanga Tribe and the applicant is preparing a response to their comments and requests.

(Source: City of Moreno Valley Planning Department)

Discussion of 2020 Modified Project: This amendment concerns construction within an existing parking area and demolition of a portion of an existing building within the 2018 Project Area. A paleontological resources assessment was conducted by DUKE CRM in June of 2017, however, the assessment excluded the parking lot from the 'project boundary' conveyed in the report. The assessment concluded that the 2018 Project Area has a low potential to impact cultural resources, including human remains. It is assumed that the 2020 Modified Project, which is within the original project area, has a low potential for resources to be uncovered unless deep earth moving activity is applied. There are no known resources on the Project site or in the immediate vicinity that are significant pursuant to Public Resources Code section 5024.1(c).

Finding: Due to the low potential for cultural resources on the Project site and the mitigation measures incorporated into the 2018 Project IS/MND, potential impacts are fully analyzed under the previously-approved document. The 2020 Modified Project would be required to comply with the Approved Project's Conditions of Approval and the mitigation measures described in the document. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

XVIII. **UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Eastern Municipal Water District (EMWD) will provide wastewater treatment services to the project site, including the apartment complex. EMWD presently services the existing development surrounding the project site. While the project will result in an increase in wastewater treatment services with the generation of approximately 62,550 gallons of wastewater per day, the project will not exceed wastewater treatment requirements of EMWD or the Santa Ana Regional Water Quality Control Board.

(Source: Eastern Municipal water District)

Discussion of 2020 Modified Project: The Modified Project is proposed to be located directly north of the existing clubhouse in the same parking area as discussed and analyzed in the previously approved document. The proposed Project does not have an increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site is presently served by Eastern Municipal Water District and, while resulting in an increase in water demand of approximately 121,000 gallons per day and generating approximately 62,550 gallons of wastewater to be treated per day, the project will not require or result in construction of new water or wastewater treatment facilities or the expansion of existing facilities, the construction of which could cause significant environmental effects.

(Source: Eastern Municipal Water District; Project plans)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project will make necessary improvements, such as on-site retention and detention facilities, to accommodate storm water drainage and will not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

(Source: Project plans)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking area as discussed and analyzed in the previously approved document. The proposed Project would not have an increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The project site presently receives domestic water service from Eastern Municipal Water District and will continue to have sufficient water supplies available to serve the increased water demand of approximately 121,000 gallons per day resulting from the project with existing entitlements and resources. No new or expanded entitlements are needed.

(Source: Eastern Municipal Water District)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Although the project proposes to construct an additional 417 dwelling units, the overall dwelling unit count established for the Moreno Valley Ranch has not been exceeded. As noted earlier, Specific Plan Amendments Nos. 1 through 8 have resulted in a reduction of over 2,000 residential dwelling units. This Specific Plan Amendment No. 9 will add 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units. Eastern Municipal Water District presently provides wastewater treatment services to the project site and the surrounding community. Adequate capacity exists to serve the project's projected demand for treatment of approximately 62,550 gallons of wastewater per day, in addition to the provider's existing commitments.

(Source: City of Moreno Valley; Eastern Municipal Water District)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking area as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously. The proposed clubhouse would replace the use of the existing clubhouse onsite.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the Modified Project. No new mitigation measures are required for the 2020 Modified Project.

f)) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – Solid waste disposal services are provided by Waste Management through the City of Moreno Valley. Waste Management will utilize Badlands Sanitary Landfill in Moreno Valley and/or Lamb Canyon Sanitary Landfill in Beaumont. Both landfills are presently operating at approximately 50% capacity and are fully capable of accepting the solid waste generated by the proposed project. While the project will result in an increment increase in demands on landfill capacities, the project will be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

(Source: County of Riverside, Department of Waste Resources; City of Moreno Valley)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the Modified Project. No new mitigation measures are required for the 2020 Modified Project.

g) Comply with federal, state, and local statues and regulations related to solid waste?				■

2018 Project IS/MND Conclusion: No Impact – The project will fully comply with the City's 'Source Reduction and Recycling Element' pursuant to State of California Integrated Waste Management Act mandate AB939.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

(Source: City General Plan)

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot as discussed and analyzed in the previously approved document. The proposed Project would have no increase in the overall intensity of future uses and would not increase the demand on utility and service systems beyond that analyzed previously.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on utilities and service systems, no new or substantially increased significant effects result from the Project. Impacts are fully analyzed in the 2018 Project IS/MND. No new mitigation measures are required for the 2020 Modified Project.

XIX. **MANDATORY FINDINGS OF SIGNIFICANCE.**				
a) Does the project 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, 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?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The 270-acre project site has been previously developed as a 27-hole golf course. The 22-acre multi-family site was previously used as the driving range for the golf course. The project site is in a fully developed area of the City and is surrounded by existing residential development. Primary grading operations will be concentrated on the 22-acre multi-family residential site with minimal grading of the golf course. Therefore, the project will 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, reduce the number or restrict the range of a rare or endangered plant or animal. Additionally, mitigation measures have been incorporated herein, in consultation with affected Native American Tribes, to ensure that the project will not eliminate important examples of the major periods of California history or prehistory.

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot as previously discussed and analyzed in the 2018 Project IS/MND. The potential impacts of the Modified Project with regard to aesthetics, air quality, biological resources, cultural resources, greenhouse gas emissions, hazards and hazardous materials, land use/planning, noise, transportation and traffic, tribal resources, and direct and indirect effects on human beings would be comparable, if not less, than the original Project based on the proposed size, uses, and location. As impacts under the proposed Project would be similar relative to the original Project, impacts would be less than significant in this regard and no new mitigation measures and/or modifications to the existing mitigations measures are required. Furthermore, Conditions of Approval required of the approved Project would also be in place of the Modified Project.

Finding: As the 2020 Modified Project would not result in a substantial adverse effect on 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 an endangered, rare or threatened plant or animal, or eliminate important examples of the major periods of California history or prehistory, no new or substantially increased significant effects result from the Project. No new mitigation measures are required for the 2020 Modified Project.

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)?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant New Impact	Impacts Fully Analyzed in 2018 Project IS

2018 Project IS/MND Conclusion: Less Than Significant Impact – The site for the multi-family residential development is located on what was formally used as the practice driving range for the 270-acre, 27-hole Moreno Valley Golf Course and is surrounded by existing residential development and the golf course clubhouse. The proposed apartment project is essentially an extension of the existing multi-family 176-unit apartment complex immediately to the north and represents the only practicable redevelopment opportunity in the immediate area. The project will not considerably add to the environmental impacts of past or current projects and will not induce future development in the area.

Discussion of Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot area and would create similar impacts as those discussed and analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the Modified Project.

Finding: There are no new or substantially increased significant effects, changes, or new information associated with the Modified Project that would require preparation of an EIR or ND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the Modified Project.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				■

2018 Project IS/MND Conclusion: Less Than Significant Impact – The apartment complex component of the proposed project has the highest potential to result in significant impacts to the environment. As determined by this environmental analyses, the project, including the apartment complex, with implementation of the mitigation measures incorporated herein, will not result in environmental impacts which will cause substantial adverse effects on human beings, either directly or indirectly.

Discussion of 2020 Modified Project: The Modified Project is proposed directly north of the existing clubhouse in the same parking lot area and would create similar impacts as those discussed and analyzed in the previously approved document. Furthermore, Conditions of Approval required of the approved Project would also be required of the 2020 Modified Project.

Finding: Construction and operation of the 2020 Modified Project would neither negate nor exacerbate the significance of adverse impacts on humans. The impacts would remain the same regardless of implementation of the Modified Project. Thus, no new impacts, changes, or new information are identified that would require preparation of an EIR or ND. No new mitigation measures and/or modifications to the existing mitigation measures are required for the 2020 Modified Project.

TECHNICAL APPENDICES

APPENDIX A. Moreno Valley Ranch Golf Course Apartments Initial Study. *CASC Engineering and Consulting, Inc.* June 2018.

MORENO VALLEY RANCH GOLF COURSE APARTMENTS

June 2018

Initial Study

Reserve at Belago Phase II
Apartments Expansion

Existing Project Site Conditions

The entire project site, comprised of the existing 27-hole golf course and the driving range facility, occupies approximately 270 acres. The golf course meanders through the northern portion of the Moreno Valley Ranch community as depicted in Figure 3. The 21.96-acre project site of the proposed multi-family residential complex is an irregularly shaped parcel being created by means of a Parcel Map currently being processed and is located east of Moreno Beach Drive and south of John F. Kennedy Drive. The site was previously used as the driving range for the Moreno Valley Ranch Golf Course, which closed golf operations in August of 2015.

The proposed apartment site is bordered on the north by existing multi-family residential development and the golf course club house fronting on John F. Kennedy Drive, to the east by single-family residential development fronting on Bay Hill Drive, to the south by open space and single-family residential development along Championship Drive and to the west by golf course/open space along Moreno Beach Drive.

Eighteen holes of the existing golf course, comprised of the Valley 9 and the Mountain 9, are proposed to be re-planted and re-opened to the public for play. Nine holes of the golf course, known as the Lakes 9, are proposed to be converted to a passive park and open space for the enjoyment of residents, current and future.

Both the driving range and 27-hole golf course have not been utilized since August of 2015 and are comprised of dry grass, landscape shrubbery and trees.

Abutting the hills of Mount Russell to the south, the project site generally slopes from south to north with the highest elevation being 1,686 feet located at the southwestern portion of the site and the lowest elevation being 1,597 feet located at the northeastern portion of the site.

Proposed Project

The proposed project entitlement includes a General Plan Amendment of the Land Use Designation, Change of Zone/Specific Plan Amendment No. 9, Plot Plan for the multi-family residential complex and a Tentative Parcel Map to reconfigure planning areas and create the legal parcel for the residential complex. The amendments to the City General Plan as well as the Moreno Valley Ranch Specific Plan 193 will permit the development of 417 multi-family residences.

The proposed Specific Plan Amendment No. 9 will reconfigure planning areas and change the designation on the 21.96-acre apartment site from Open Space (OS) to High Residential (HR).

Summary of Key Elements of Specific Plan Amendment 9:

- Modify the City's General Plan for the approximately 22 acres described above from Open Space to Residential R20 (maximum 20 dwelling units per acre).

- Modify the City's existing zoning map and Specific Plan 193 Land Use exhibit for approximately 22 acres from Specific Plan 193 Golf Course to Specific Plan 193 High Density residential (maximum 20 dwelling units per acre). This will allow for up to an additional 439 residential units within the Specific Plan.

- Eighteen holes of the 27-hole golf course identified within the Specific Plan, which are known as the Valley 9 and the Mountain 9, are proposed to be re-graded, re-planted and re-opened to the public for play. Nine holes of the golf course, known as the Lakes 9, are proposed to be converted to a passive park and open space for the enjoyment of current and future residents.

- In order the ensure rehabilitation of the golf course, and related areas, conditions of approval will be placed on any implementing application of this 21.96 acre site to establish that no building permits will be granted for the site until the 18-hole golf course, clubhouse, and landscape areas have been restored and reopened for the Valley 9 and the Mountain 9. In addition, the landscaping (passive/exercise park) at the Lakes 9 will be required to be completed prior to building permit.

- Regarding long-term maintenance, consistent with the State law requirements for a Specific Plan to provide a financing mechanism for implementation of the Specific Plan, surety with regard to future landscape maintenance will need to be established. In order to ensure the future maintenance of the 18-hole golf course and passive/exercise park, the project conditions of approval shall reflect that prior to issuance of grading permits for the 21.96 acre site, the developer shall submit a covenant agreement to ensure long term maintenance of the golf course for review and approval by the City. The covenant agreement must be executed prior to issuance of grading permits for the 21.96 acre site. This condition of approval will be placed on the Plot Plan application for multi-family use which is currently in process.

Background

The development of the Moreno Valley Ranch community is guided and directed by the Moreno Valley Ranch Specific Plan. The Moreno Valley Ranch Specific Plan 193 was adopted and Environmental Impact Report was certified by the Moreno Valley City Council on August 13, 1985. The seventh Amendment to the Specific Plan is limited to 21.96 acres of the Moreno Valley Ranch Specific Plan (SP193). The Specific Plan was initially approved for 12,703 residential units encompassing 3,959 acres. The proposed change in Specific Plan land use designation is a negligible change affecting approximately one-half percent of the total land area of the Specific Plan.

The Specific Plan is considered to be a living regulatory document that can be adjusted or amended for various reasons with full and complete review, analysis, public input and environmental documentation. The Moreno Valley Ranch Specific Plan has experienced several such amendments over the years that reflected changing market conditions and lifestyle changes in Southern California.

The effect of this amendment is to increase the number of residential units by up to 439 dwelling units within the Specific Plan. A total of 417 dwelling units are proposed. However, this increase in residential units is offset by previous reductions in the number of residential units within the tract.

Amendment 1 added the Moreno Valley campus of the Riverside Community College to the Specific Plan 193.

Amendment 2 was the first amendment modifying the total number of units at build-out within the Specific Plan. This amendment incorporated the 27-hole golf course into the Specific Plan. The effect of this change was to reduce the maximum number of potential residential units approved within the Specific Plan by 642 residential units. Amendment 2 included a Subsequent Environmental Impact Report that was prepared concurrent with the Specific Plan Amendment.

Amendment No. 3 also resulted in a reduction in the potential number of overall number of residential attached housing units in a range from 32 – 82 residential units.

Amendment No. 4 had little impact on the ultimate build-out of residential units but increased the maximum number of residential development units by 16 additional single family homes.

Amendment No. 5 amended the Specific Plan to modify eight planning areas of the Specific Plan generally modifying residential categories that allow for higher density to Medium Low Residential (4-8 dwelling units per acre) and Medium Residential (8-13 dwelling units per acre). The approval decreased the potential build-out within these Planning Areas of the Specific Plan by 1,160 dwelling units.

Amendment No. 6 modified uses in fourteen Planning Areas on 227.65 acres and reduced the residential dwelling unit total that could be built in Moreno Valley Ranch by 1,221 dwelling units.

Amendment No. 7 modified the Specific Plan to allow for a maximum of 176 additional dwelling units into the approval total.

Amendment No. 8 modified the Specific Plan to allow for condominiums, increasing the number of dwelling units by 135.

Specific Plan Amendment No 9, currently under consideration, proposes to add back 417 residential dwelling units (maximum of 439 dwelling units based on the proposed acreage of SP193- High Density) into the approved total.

The net effect of these amendments was to reduce the total number of residential units within the original Specific Plan by at least 2,700 dwelling units. The prior Amendments 1 through 8 reduced the total number of units to approximately 10,000 at build-out. With the current Specific Plan Amendment No. 9, a maximum of 439 dwelling units are being added into the Specific Plan. With the Specific Plan Amendment, the total residential units at build-out would be roughly 10,439 dwelling units which would still be below the 12,703 dwelling units that was contemplated with the adoption of the original Specific Plan.

Even if Specific Plan Amendment 2, which incorporated of the golf course into the Specific Plan, was used to determine the maximum number of dwelling units within the Specific Plan, the total number of dwelling units at build-out would be 10,439 dwelling units which still be below the maximum of 11,081 dwelling units that would have been allowed with the implementation of Specific Plan Amendment 2.

Analysis of Specific Plan Amendment

At present, due to financial considerations, the golf course and driving range have not been in operation for several years. The intent of this Specific Plan Amendment is twofold: develop a multi-family project on the former driving range of the golf course, and reopen at least 18 holes of the golf course for operation along with maintaining the other nine holes as open space for potential later conversion to golf course.

Evaluating these two components in the context of the Specific Plan requirements above, the only change to exhibits is to update the Specific Plan Land Use exhibit for approximately 22 acres, and to update the exhibits showing the golf course (Attachments). This Specific Plan Amendment does not modify the existing text that would allow for up to a 27-hole golf course.

In evaluating the major components of infrastructure in the Specific Plan, the Specific Plan Amendment will have a negligible effect on infrastructure as the Amendment is within the scope of the Specific Plan as originally adopted. Further, the existing backbone street system which is already constructed will be able to adequately serve the site. Conditions of approval will be placed on the project to make sure that the project complies with all City requirements.

In consideration of the standards that would apply to the project, the proposal is to amend the Specific Plan zoning from SP193 – Golf Course to SP 193 – High density for 21.96 acres. This change is addressed in the Land Use exhibit. The Plot Plan for the multi-family project have been designed consistent with the Specific Plan development standards for SP 193 – High Density. (Attachment B). No change to development standards of the Specific Plan are required.

The fourth component of a Specific Plan is a program of implementation of measures including regulations, programs, public works projects, and financing measures necessary to carry out the mandated elements of the Specific Plan described above. In order to ensure the reopening of the golf course and the long-term maintenance of it, measures need to be implemented with this Specific Plan Amendment to provide a level of certainty that the golf course will be reopened in the short term, and that the open space areas comprising the golf course will be maintained in the long-term. As described in the key elements of Specific Plan Amendment No. 7 on page 1, the following are required to ensure that this Amendment is consistent with all of the objectives and policies of the Specific Plan. Specifically, the following will be incorporated into the project approvals related to the multi-family project and golf course/open space renovation.

- In order the ensure rehabilitation of the golf course, and related areas, conditions of approval will be placed on any implementing application of this 21.96 acre site to establish that no building permits will be granted for the site until the 18-hole golf course, clubhouse, and landscape areas have been restored and reopened for the Valley 9 and the Mountain 9. In addition, the landscaping (passive/exercise park) at the Lakes 9 will be required to be completed prior to building permit.

- Regarding long-term maintenance, consistent with the State law requirements for a Specific Plan to provide a financing mechanism for implementation of the Specific Plan, surety with regard to future landscape maintenance will need to be established. In order to ensure the future maintenance of the 18-hole golf course and passive/exercise park, the project conditions of approval shall reflect that prior to issuance of grading permits for the 21.96 acre site, the developer shall submit a covenant agreement to ensure long term maintenance of the golf course for review and approval by the City. The covenant agreement must be executed prior to issuance of grading permits for the 21.96 acre site. This condition of approval will be placed on the Plot Plan application for multi-family use which is currently in process.

INITIAL STUDY/ENVIRONMENTAL CHECKLIST FORM
CITY OF MORENO VALLEY

1. Project Title: Rancho Belago Phase 2 - General Plan Amendment (PEN16-0127), Change of Zone/Specific Plan Amendment (PEN16-0128), Plot Plan (PEN16-0130) and Tentative Parcel Map (PEN16-0129)

2. Lead Agency Name and Address: City of Moreno Valley
   Community Development Department
   Planning Division
   14177 Frederick Street
   P.O. Box 88005
   Moreno Valley, CA 92552

3. Contact Person and Phone Number: Chris Ormsby, Senior Planner

4. Project Location: Southeast, northeast and southwest of intersection of Moreno Beach Drive and John F. Kennedy Drive

5. Project Sponsor's Name and Address: Bridge Investment Group Holdings
   Eric Heffner, Director of Real Estate Development
   2521 State Street
   Carlsbad, CA
   858-205-4072

6. General Plan Designation: Open Space

7. Zoning: Moreno Valley Ranch Specific Plan No. 193

8. Description of the Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheets if necessary) As depicted in Figure 4, the proposed project involves the construction of 417 multi-family dwelling units within 18 buildings on the former driving range portion of the golf facility. Also proposed in the apartment complex are ancillary uses and improvements such as a club house, recreational facilities, parking, landscaping, outdoor lighting of parking areas, walkways and buildings, common open space, private open space, street improvements, drainage improvements and water quality management facilities.

   The project also involves the re-landscaping and re-opening to the public of 18-holes of the golf course known as the Valley 9 and the Mountain 9 courses. The remaining 9 holes, known as the Lakes 9, will be converted to a recreation facility available to the public comprised of exercise trails, exercise stations, 5K course and practice golf facilities, as depicted on Figure 5.

9. Surrounding Land Uses and Setting: (Briefly describe the project's surroundings) The apartment site was previously utilized as the driving range for the Moreno Valley Ranch Golf Club. The golf course club house exists adjacent to and north of the project site, as well as a multi-family residential development. Single-family detached residential homes exist to the east, west and south of the project site. The existing 27-hole golf course is predominately surrounded by single-family residential development.

10. Other public agencies whose approval is required (e.g. permits, financing approval, or participation agreement). In addition to the City of Moreno Valley, the project will require approval from Riverside County Flood Control District. It is not anticipated that the project will require approval and/or permits from resource agencies such as U.S. Army Corps of Engineers, U.S. Department of Fish & Wildlife, or California Department of Fish & Wildlife.

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	■	Hazards & Hazardous Materials		Recreation
	Agricultural Resources		Hydrology/Water Quality	■	Transportation/Traffic
■	Air Quality	■	Land Use/Planning Land Use/Planning	■	Tribal
■	Biological Resources		Mineral Resources		Utilities/Service Systems
■	Cultural Resources	■	Noise		Mandatory Findings of Significance
	Geology/Soils		Population/Housing		
■	Greenhouse Gas Emissions		Public Services		

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 "potential 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 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.	

Gabriel Diaz — 6/8/18

Signature — Date

Gabriel Diaz

Printed Name — For

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: Potentially Significant Unless Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less 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 Analysis," as described in (5) below, may be cross-referenced).

5) Earlier analysis 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.

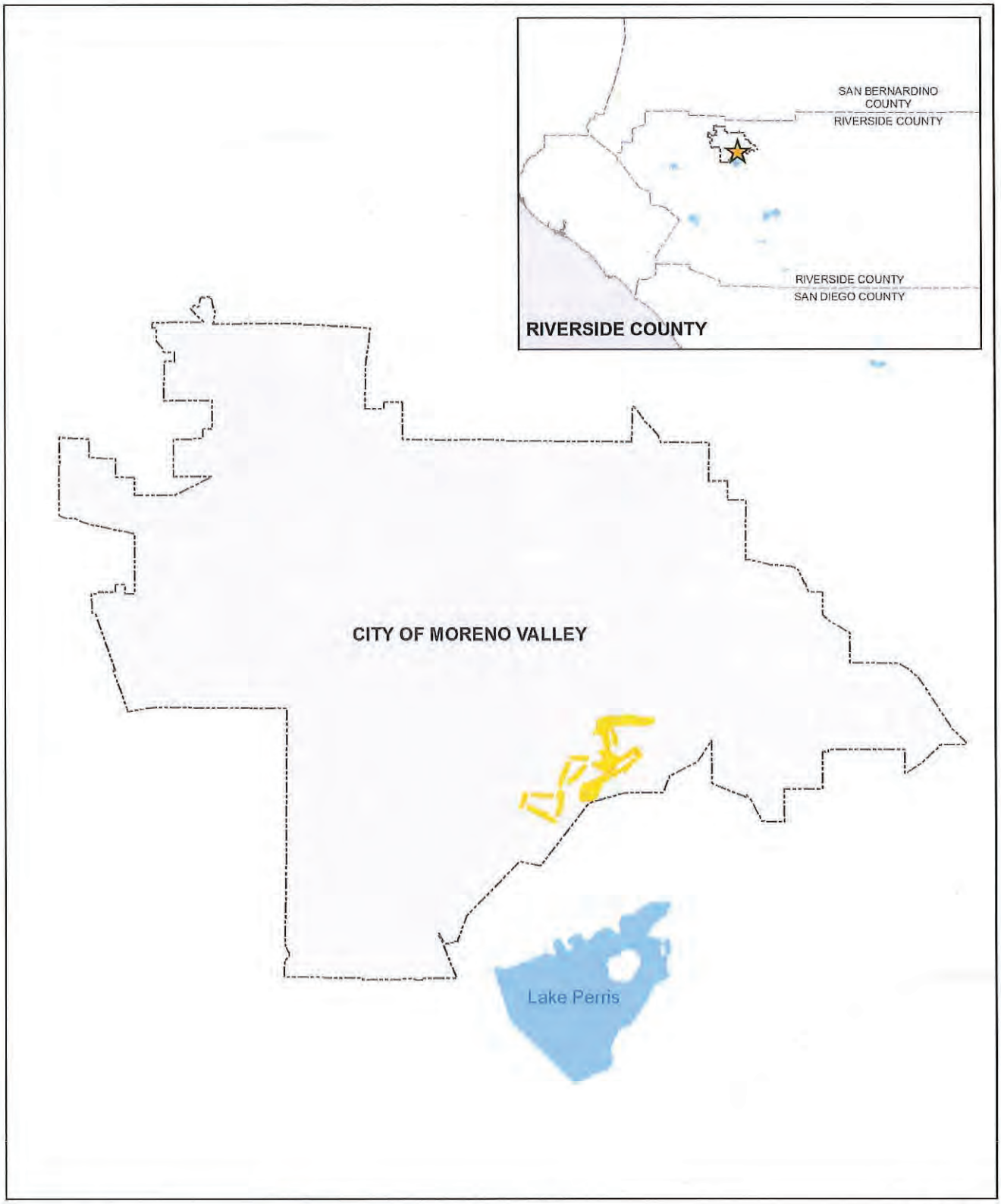
   (c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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 analysis of each issue should identify: (a) the significance criteria or threshold used to evaluate each question; and (b) the mitigation measure identified, if any, to reduce the impact to less than significance



CASC Engineering and Consulting

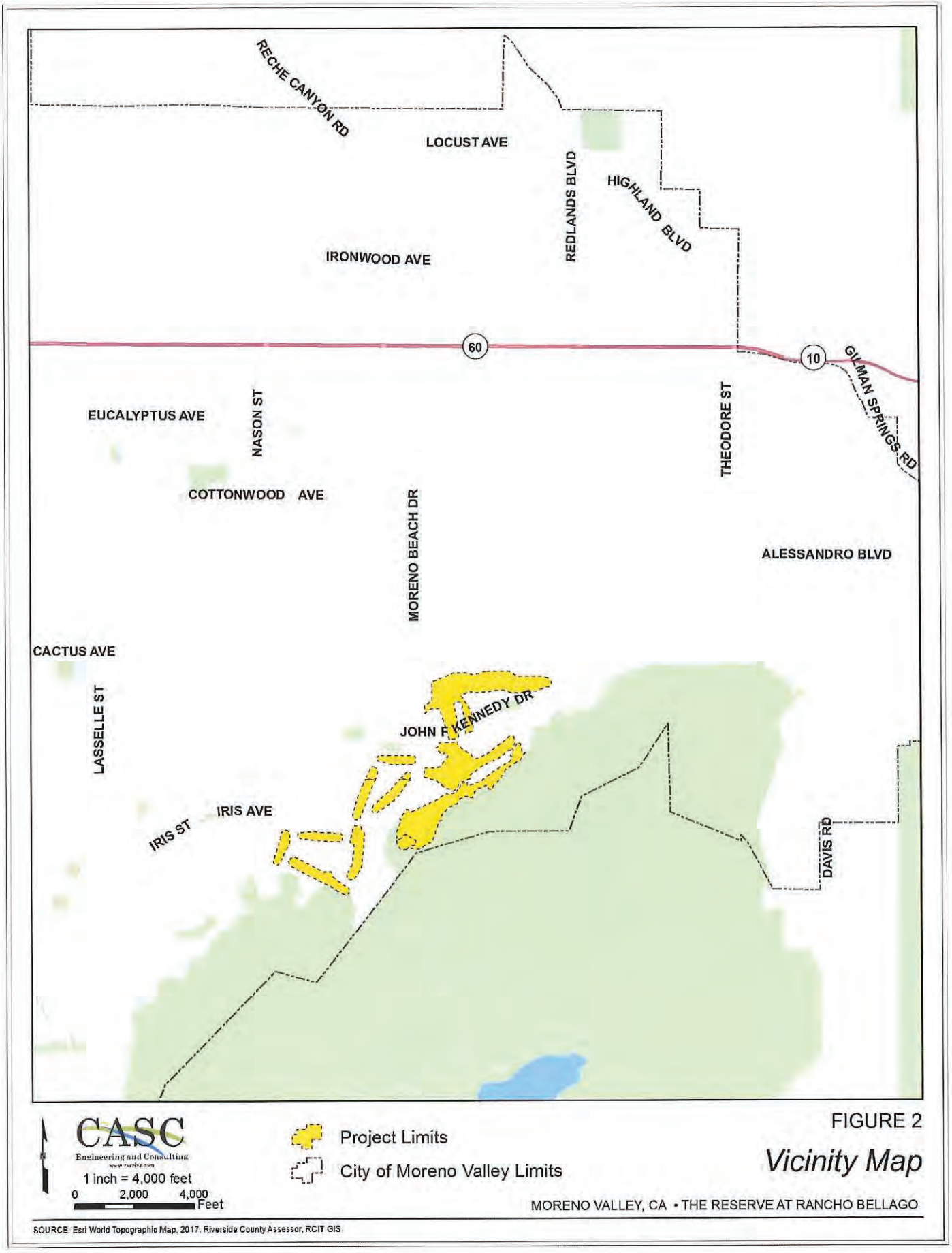
FIGURE 1

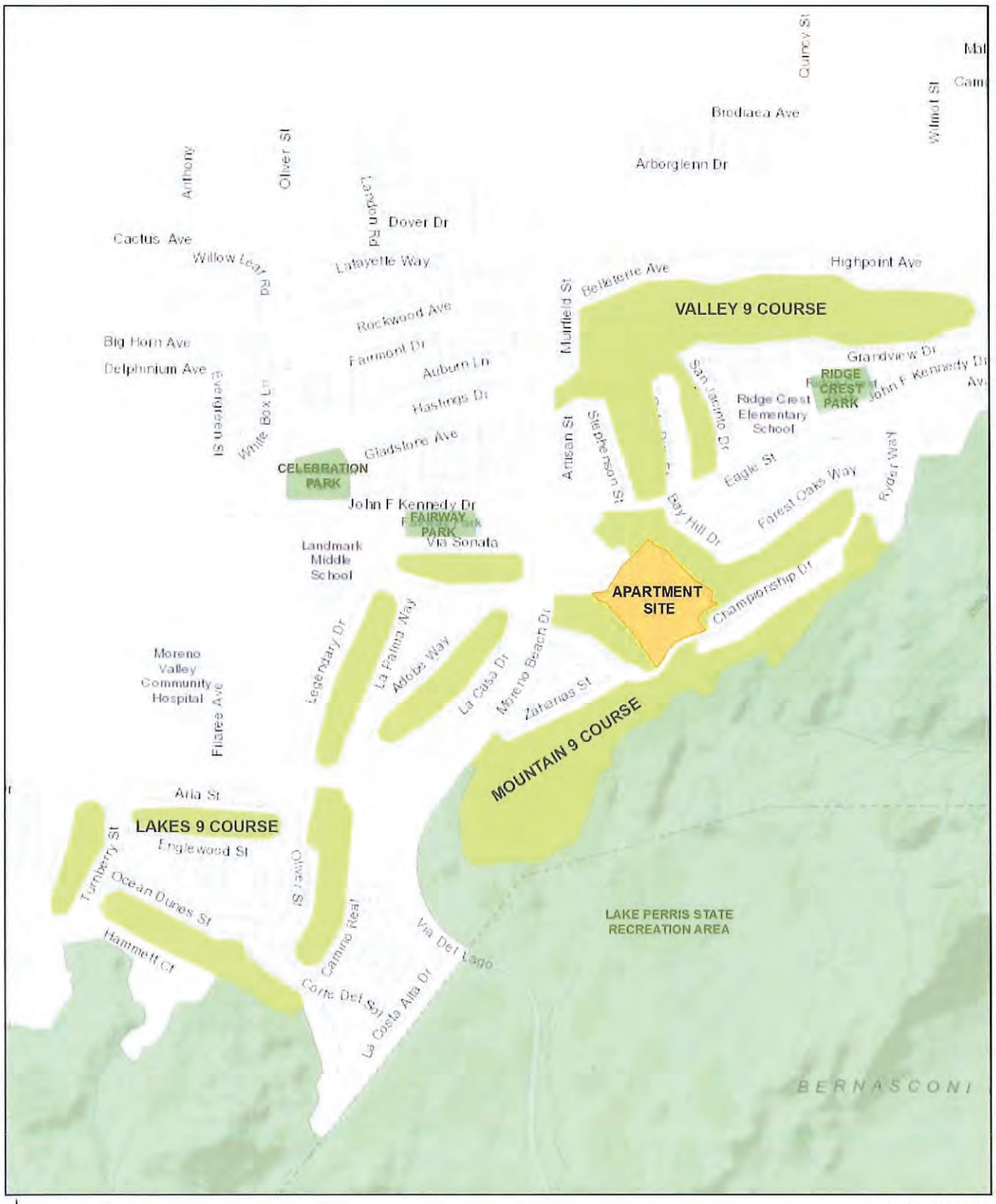
Regional Vicinity Map

NOT TO SCALE

MORENO VALLEY, CA • THE RESERVE AT RANCHO BELLAGO

SOURCE: Esri World Light Gray Canvase Basemap, 2017, Riverside County Assessor, RCIT GIS





CASC Engineering and Consulting

Apartment Site

Golf Courses

FIGURE 3

Residential Site and Golf Course

NOT TO SCALE

MORENO VALLEY, CA • THE RESERVE AT RANCHO BELLAGO

SOURCE: Esri World Topographic Map, 2017, Riverside County Assessor, RCIT GIS

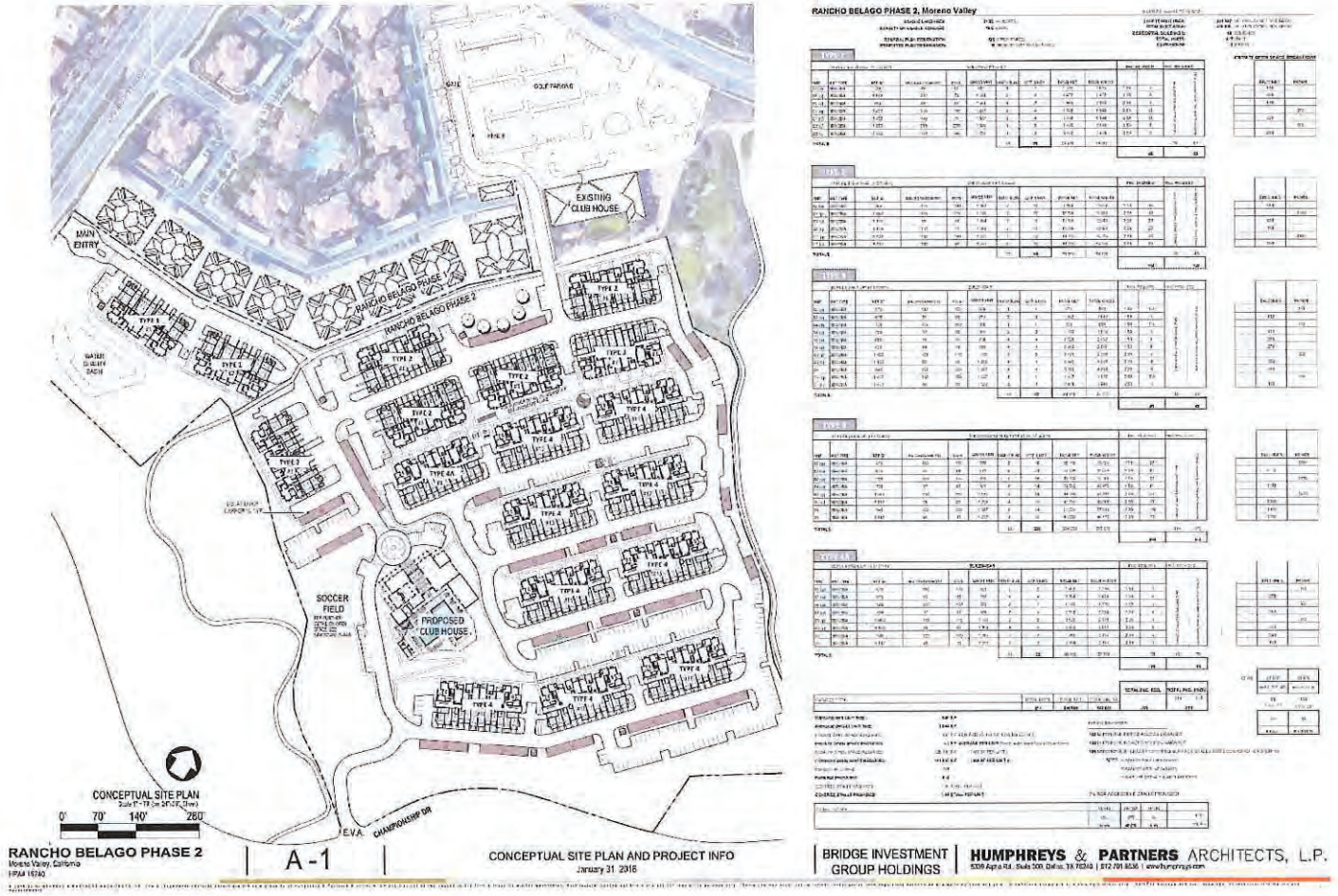


FIGURE 4

Residential Site Plan

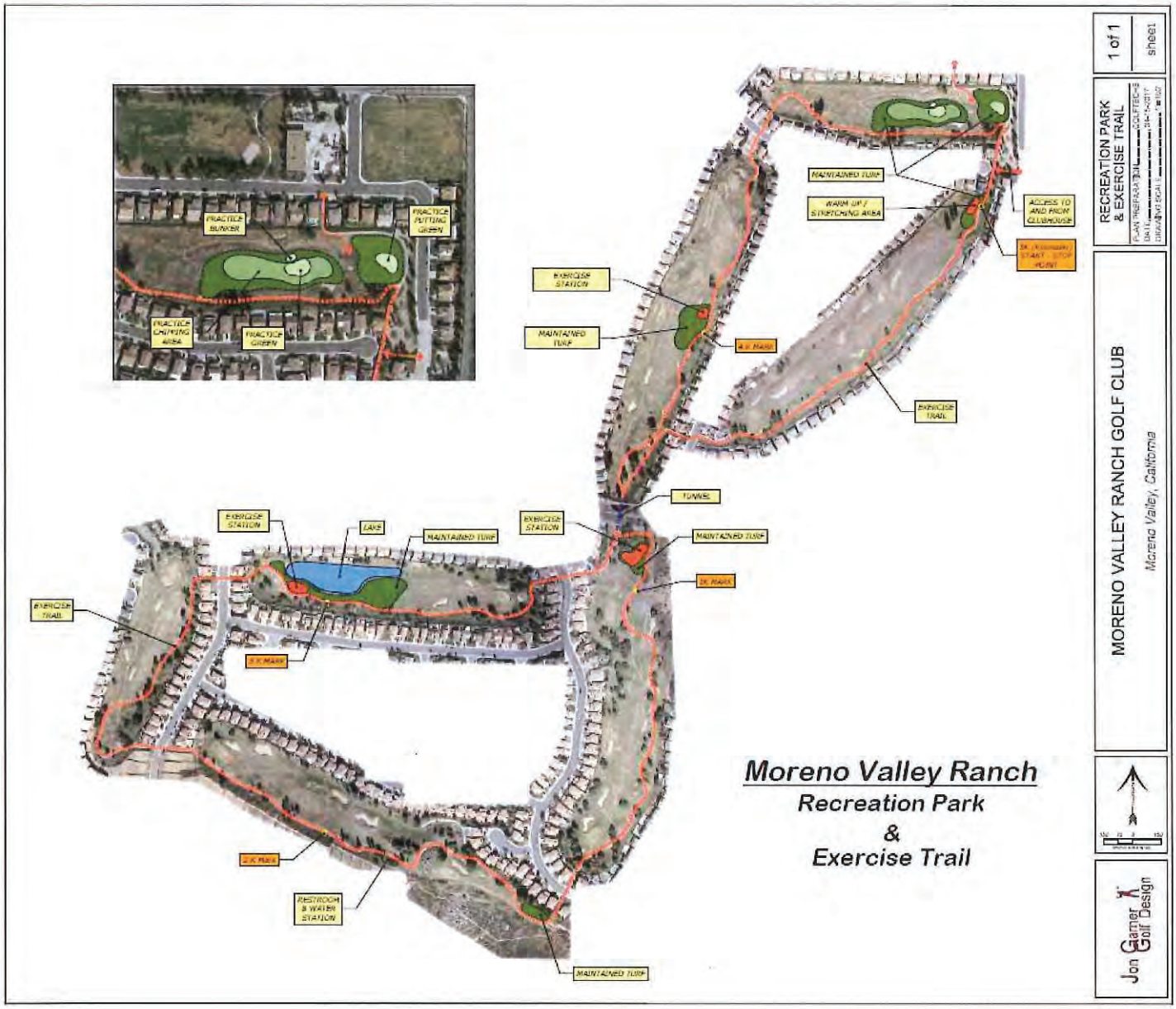


FIGURE 5

Recreation Park and Exercise Trail (Lakes 9)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
I. **AESTHETICS.** Would the project:				
a) Have a substantial adverse effect on a scenic vista?			■	

Less Than Significant Impact - The project site is located in the southern portion of the City of Moreno Valley and abuts the Mount Russell area directly to the south. The development of the multi-family residential project will occupy the current location of the driving range for the golf course. Vistas to the north of the valley to the San Bernardino Mountains that presently exist from the existing residential development south of the project site will not be adversely affected by the proposed project. The proposed project will impact views to the south toward the Mount Russell area from some ground-level apartments in the complex immediately north of the project site. Implementation of the project will have a less than significant 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?				■

No Impact - There are no State-designated or eligible scenic highways within the City of Moreno Valley and thus no impacts would result from the project in this regard. The project site does not include scenic resources such as trees of scenic value or historic buildings. The golf course does contain rock outcroppings but the project will not substantially damage said resources.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?			■	

Less Than Significant Impact - The proposed project will convert land that was previously used as the driving range for the golf course. 21.96 acres of former driving range land will be converted to residential use. Approximately 248 acres of open space (approximately 165 acres in the golf course and 83 acres for the park/training course) will remain and be available to the public for use. The proposed project does maintain significant open space buffers between the proposed development and the existing residential development.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?		■		

Less Than Significant With Mitigation Incorporated - The proposed multi-family residential complex will remove the existing lighting for the former driving range and provide a new source of light and/or glare which will affect nighttime views in the immediate area. The lighting for the former driving range was a source of substantial light and glare affecting the existing residents of homes in the immediate area. The proposed project is required to demonstrate compliance with the City's Municipal Code regulations regarding exterior lighting prior to the issuance of building permits.

Mitigation Measures

AES-1 The project will comply with the Moreno Valley Municipal Code regulating exterior lighting of residential structures. Architectural plans shall be prepared, submitted and reviewed by the City and approved as demonstrating compliance with said regulations.

II. **AGRICULTURE 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project?				
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?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

No Impact - The proposed apartment project site was formally utilized as the driving range for the golf course and does not contain land designated as Prime Farmland or Farmland of Statewide Importance and thus no impacts will result by the implementation of the proposed project.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				■

No Impact - The project site is not under a Williamson Act contract nor does the existing zoning for the site designate the site for agricultural uses. Thus, the proposed project will not conflict with existing zoning for agricultural uses or Williamson Act contract.

c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				■

No Impact - The proposed project will not involve changes in the existing environment which would result in the conversion of Farmland to non-agricultural uses.

III. **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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		■		

Less Than Significant With Mitigation Incorporated - The project site is located in the western portion of Riverside County, which is part of the South Coast Air Basin. Air quality within the South Coast Air Basin is regulated by the South Coast Air Quality Management District (SCAQMD). Standards for air quality are established in the SCAQMD's Air Quality Management Plan (AQMP) adopted in December of 2012. The proposed project will result in the emission of pollutants into the Air Basin during short-term construction and long-term operational activities. The pollutant levels emitted by the construction and operation of the Project have the potential to exceed the daily significance thresholds established by the SCAQMD, thereby potentially conflicting with or obstructing implementation of the SCAQMD 2012 Air Quality Management Plan.

The project site is currently surrounded by residential uses. With the approval of a General Plan Amendment (GPA) and Specific Plan Amendment, the proposed development of 417 residential dwelling units on 21.96 acres would be consistent with the City General Plan Land Use Designation as well as the land use and text established in the Moreno Valley Ranch Specific Plan. The project proposes to amend the General Plan from Open Space to Residential (R20) and the Moreno Valley Ranch Specific Plan from Golf Course to High Residential (HR) to permit the development of the multi-family residential complex. Therefore, with the adoption of the GPA, the proposed project would not result in an inconsistency with the land use designation, and is not anticipated to exceed the AQMP assumptions for the project site.

Regarding Construction-Source Emissions, the project emissions will not exceed applicable regional thresholds of significance established by SCAQMD for volatile organic compounds (VOCs), nitrogen oxide (NOx), carbon monoxide (CO), sulfur oxide (SOx), and particulate matter (PM10 and PM2.5). For localized emissions, the project will not exceed applicable Localized Significance Thresholds (LSTs) established by the SCAQMD for nitrogen oxide (NOx), carbon monoxide (CO), and particulate matter (PM10 and PM2.5).

Project construction-source emissions will not conflict with the Basin Air Quality Management Plan (AQMP). As identified in the Kunzman analysis cited herein, the project will comply with all applicable SCAQMD construction-source emission reduction rules and guidelines.

Regarding project operational-sourced emissions, incorporation of mitigation measures AQ-2 through AQ-5 will reduce energy and mobile source-related emissions and avoid the project exceeding applicable regional thresholds of significance established by the SCAQMD.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Mitigation Measures:

Construction

AQ-1 The project shall comply with SCAQMD Rule 403 regarding fugitive dust;

AQ-2 Contractor shall use off-road diesel-powered construction equipment that meets or exceeds the CARB and USEPA Tier 4 off-road emissions standards for equipment rated at 50 horsepower or greater during Project construction. Such equipment shall be outfitted with Best Available Control technology (BACT) devices including a CARB certified Level 3 Diesel Particulate Filters (DPF). These requirements shall be included in applicable bid documents and successful contractor(s) must demonstrate the ability to supply such equipment. A copy of each unit's certified tier specification or model year specification and CARB or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment.

AQ-3 Architectural coatings (no more than 50 grams/liter of VOC) that are beyond the limits in SCAQMD Rule 1113 – Architectural Coatings shall be utilized on the project buildings.

Operation

AQ-4 The project applicant shall provide sidewalks within the project boundary;

AQ-5 The project applicant shall utilize low-flow faucets, toilet and shower fixtures that reduce indoor water demand by 20% per CalGreen Standards;

AQ-6 The project applicant shall implement recycling programs that reduce waste to landfills by a minimum of 75 percent by 2020 per AB341;

AQ-7 The project applicant shall utilize and install ENERGY STAR-compliant appliances in residential dwelling units.

Mitigation measure AQ-1 proposed above is to ensure that the project complies with the SCAQMD's mandatory fugitive dust control regulation Rule 403. Compliance with this rule 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.

The project is located adjacent to a Riverside Transit Bus Stop on Moreno Beach Drive, north of Championship Drive. Mitigation measure AQ-4 will provide sidewalks onsite to encourage use of nearby sources of alternative transportation which reduces the production of mobile source emissions. Mitigation measure AQ-5 reduces the project's water requirements and therefore the emissions and energy associated with water transport. Mitigation measure AQ-6 reduces the project's solid waste footprint and therefore the emissions associated with transporting, processing and land-filling solid waste. Mitigation measure AQ-7 requires the installation of ENERGY STAR appliances wherever appliances are to be installed on site. This reduces the project's electricity needs and therefore, the emissions associated with energy production.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.			■	

Less Than Significant – Kunzman Associates, Inc. conducted an air quality modeling analysis to calculate the potential air emissions associated with the construction and operation of the proposed project. The emissions were then compared to applicable SCAQMD standards. The construction and operations-related air emissions were analyzed for both regional and local air quality impacts, as well as potential toxic air impacts.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Construction Emissions

The phases of construction activities that were analyzed for the Proposed Project include grading, building construction, paving, and the application of architectural coatings. Grading emissions shown below include incorporation of fugitive dust control measures as required by SCAQMD Rule 403 (per mitigation measure AQ-1 above). As shown below, none of the analyzed criteria pollutants would exceed the regional emissions thresholds. Therefore, a less than significant regional air quality impact would occur from construction of the Proposed Project.

Construction-Related Regional Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	5.75	67.94	38.78	0.06	5.68	4.15
Off-Site[3]	0.13	0.09	1.12	0.00	0.23	0.06
Total	**5.88**	**68.03**	**39.91**	**0.06**	**5.91**	**4.21**
Building Construction						
On-Site	3.11	26.55	18.18	0.03	1.79	1.68
Off-Site	3.15	13.36	25.69	0.07	5.36	1.53
Total	**6.27**	**39.91**	**43.87**	**0.10**	**7.14**	**3.21**
Paving						
On-Site	2.75	17.52	14.80	0.02	0.96	0.88
Off-Site	0.09	0.06	0.74	0.00	0.17	0.05
Total	**2.84**	**17.58**	**15.54**	**0.02**	**1.12**	**0.93**
Architectural Coating						
On-Site	62.48	2.01	1.85	0.00	0.15	0.15
Off-Site	0.50	0.33	4.11	0.01	0.93	0.25
Total	**62.98**	**2.34**	**5.96**	**0.01**	**1.08**	**0.40**
Total for overlapping phases[4]	**72.08**	**59.83**	**65.37**	**0.14**	**9.35**	**4.54**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, paving and painting phases may overlap.

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. As shown below, none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. Therefore, a less than significant local air quality impact would occur from construction of the Proposed Project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Local Construction Emissions at Nearest Sensitive Receptors[1]

Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	67.94	38.78	5.68	4.15
Building Construction	26.55	18.18	1.79	1.68
Paving	17.52	14.80	0.96	0.88
Architectural Coating	2.01	1.85	0.15	0.15
SCAQMD Threshold for 25 meters (82 feet) or less[2]	**270**	**1,577**	**13**	**8**
Exceeds Threshold?	No	No	No	No

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Perris Valley.

[2] The nearest existing sensitive receptors are located adjacent to the west side of the project site; therefore, as according to LST methodology any receptor located closer than 25 meters should be based on the 25 meter threshold, the 25 meter threshold was used.

Operational Emissions

The operations-related criteria air quality impacts created by the proposed project were analyzed through use of the CalEEMod model. The operating emissions were based on the year 2018, which is the anticipated opening year for the proposed project. The CalEEMod model analyzes operational emissions from area sources, energy usage, and mobile sources. As shown below, the project's unmitigated emissions would exceed SCAQMD regional thresholds for NOx only. Therefore, a potentially significant regional air quality impact would occur from operation of the proposed project and mitigation measures are required to reduce the project's emissions.

Unmitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	7.41	50.97	89.97	0.30	20.89	5.82
Total Emissions	**18.90**	**59.78**	**128.85**	**0.36**	**21.76**	**6.69**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	**Yes**	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.

[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.

[4] Mobile sources consist of emissions from vehicles and road dust.

As shown in the table above, the NOx emissions would be primarily created from mobile sources (including trucks and passenger vehicles) that will be operated by future residents of the project. As shown in the table below, with incorporation of mitigation measures AQ-2 through AQ-5 (as detailed above), emissions from the operation of the project would no longer exceed the SCAQMD regional threshold for NOx. Therefore, with the incorporation of mitigation, a less than significant regional air quality impact would occur from the operation of the proposed project.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Mitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	6.30	39.06	57.06	0.18	11.77	3.29
Total Emissions	**17.78**	**47.87**	**95.95**	**0.24**	**12.65**	**4.16**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.

[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.

[4] Mobile sources consist of emissions from vehicles and road dust.

The local air quality impacts from the operation of the proposed project would occur from emissions generated on-site. Sources of on-site operational emissions include architectural coatings off-gassing, landscaping equipment emissions, natural gas appliance emissions and on-site vehicular emissions. Because of the residential nature of the proposed project, the majority of the proposed project's operational emissions are from vehicles traveling on roadways away from the project site. These emissions are then spread over a vast area traversed by various mobile sources and do not result in localized air quality impacts in proximity to the project site. As such, localized operational modeling for project operations are not prepared for residential developments. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions.

Therefore, with incorporation of mitigation measures identified in Section III(a) above, neither project construction-source emissions nor operational-source emissions would cause or substantively contribute to violations of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS).

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		■		

Less Than Significant With Mitigation Incorporated – As identified in Section III(b) above, the development of the proposed project would result in less than significant regional emissions during construction. Therefore, a less than significant cumulative impact would occur from the construction of the proposed project.

The data provided in the operational discussion for Section III(b) above shows that the ongoing operational activities of the proposed project would not exceed SCAQMD thresholds of significance for VOC, CO, SO2, PM10, and PM2.5; however, unmitigated emissions would exceed the SCAQMD threshold for NOX. Therefore, mitigation is required. With the incorporation of mitigation, emissions from the operation of the project would no longer exceed the SCAQMD regional threshold for NOx, and would not result in a significant cumulative impact from operations.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

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. Therefore, with the incorporation of mitigation measures noted above in Section III(a), the project's emissions meet SCAQMD regional thresholds and will not result in a significant cumulative impact.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

d) Expose sensitive receptors to substantial pollutant concentrations?			■	

Less Than Significant – Land uses considered to be sensitive receptors include long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care facilities and athletic facilities. The nearest sensitive receptors to the project site include multi-family attached and single-family detached residential dwelling units surrounding the project site. Landmark Middle School is approximately one half mile from the proposed apartment complex and 0.6 mile from the nearest Valley 9 course re-grading operations. Ridgecrest Elementary School is approximately 0.22 miles northeast of the apartment site.

The analysis discussed in Section III(b) above found that none of the analyzed criteria pollutants would exceed the local emissions thresholds for any phase of construction. As such, construction of the proposed project would result in a less than significant exposure of sensitive receptors to substantial pollutant concentrations.

Local air quality impacts from the operation of the proposed project would occur from emissions generated on-site. Sources of on-site operational emissions include architectural coatings off-gassing, landscaping equipment emissions, natural gas appliance emissions and on-site vehicular emissions. As stated above in Section III(b), because of the residential nature of the proposed project, the majority of the proposed project's operational emissions are from vehicles traveling on roadways away from the project site. These emissions are then spread over a vast area traversed by various mobile sources and do not result in localized air quality impacts in proximity to the project site. As such, localized operational modeling for project operations are not prepared for residential developments. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to onsite emissions.

Therefore, with the incorporation of mitigation measures identified in Section III(a), the project will not create substantial pollutant concentrations which could adversely affect said sensitive receptors.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

e) Create objectionable odors affecting a substantial number of people?			■	

Less Than Significant - The project does not contain land uses typically associated with emitting objectionable odors (i.e. agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting operations, refineries, landfills, dairies, various manufacturing facilities). Potential odor sources associated with the proposed project may result from construction equipment exhaust, the application of asphalt and architectural coatings during construction. Standard construction regulations will minimize the temporary, short-term and intermittent odor impacts during construction. The placement of staging areas away from existing residential uses, per AQ-6 below, would also help to reduce the potential for any odor-related impacts. Additionally, the project is required to comply with SCAQMD Rule 402 to prevent occurrences of public nuisances. Therefore, odors associated with the proposed project construction and operations will be less than significant.

AQ-6 Place construction staging areas as far away from existing residential development as possible.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 - Appendix A)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

IV. **BIOLOGICAL RESOURCES**. Would the project:

Background: The site has been developed as a golf course that consists of a driving range, fairways, tee boxes, sand traps and one water hazard. The golf course has not been in use since 2015. APN 304-030-005 is located on the northeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-007 is located on the southeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-008 is located south of Championship Drive with Mount Russell on its southwestern border. The site is located in Sections 22, 23, and 14, Township 3S, Range 3W, SBBM of the Sunnymead 7.5-minute quadrangle (United States Geologic Service 1967, Revised 1980).

The site is an 27-hole golf course that is surrounded on all sides by high density and single family residential developments. Plants observed at the site are primarily non-native grasses ruderal weeds. Ruderal plants are typically those plants that initially colonized disturbed lands. These types of plants are typically non-native introduced weeds. The survey area is surrounded on all sides by single family and high density residential developments plus associated infrastructure. Mount Russell is found on the southwestern border of APN 304-100-008. Soils at APN 304-030-004 have been classified as Metz loamy fine sands with a sandy loam substrate (United States Department of Agriculture 1971). These are soils that have been formed in alluvial materials and are deep, somewhat excessively drained soils found on flood plains and alluvial fans. Soils at APNs 304-100-007 and 304-100-008 have been classified as San Emigdio loam (United States Department of Agriculture 1971). San Emigdio loams are formed in sedimentary alluvium and are very deep, well drained soils found on alluvial fans and floodplains (Tetra Tech 2017).

The site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The MSHCP has identified the following requirements related to biological resources by APNs:

- APN 304-030-005: A habitat assessment was required for potential habitat by burrowing owl.
- APN 304-100-008: A habitat assessment would be required for potential habitat for burrowing owl and Los Angeles pocket mouse.
- APN 304-100-007: No biological resources requirements related to the MSHCP have been identified but was included in the reconnaissance survey to determine if sensitive biological resources were present.

The APNs associated with the site are identified by the MSHCP as not a part of a cell and independent cell groups.

The available literature on natural resources with reference to biological resources for the site were consulted including information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (2017). The California Native Plant Society (CNPS) Electronic Inventory (2017) for the site was also reviewed for sensitive plants (Tetra Tech 2017).

Plant and wildlife species classified as rare, threatened, or endangered; proposed for listing as endangered or threatened; or candidate species for listing by federal and/or state resource agencies are considered "sensitive". A list of Sensitive Biological Resources that have the potential for presence in the survey area and likely occurrence probability for presence in the survey area are found in Appendix A. The site is highly disturbed from development as an 18-hole golf course. Despite the highly disturbed and developed condition of the site, habitat at the site has the potential to support the following sensitive species:

- Cooper's hawk (*Accipiter cooperii);*
- Burrowing owl (*Athene cunicularia*);
- Ferruginous hawk (*Buteo regalis*);
- Lawrence's goldfinch (*Spinus lawrencei*);
- Western mastiff bats (*Eumops perotis californicus*); and
- Western yellow bat (*Lasiurus xanthinus*).

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

The water feature found in APN 304-030-005 is suitable habitat for occupation by western pond turtle (*Emys marmorata*) only if introduced. The water feature has no connection to possible sources of this sensitive turtle.

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?		■		

Less Than Significant With Mitigation Incorporated – No sensitive plants or plant communities were observed at the site during the reconnaissance survey. Based on the high degree of management of the golf course and the presence of non-native grasses and weeds that are found in all parts of the site, sensitive native plants are absent from the site. No impacts to these resources would occur.

During the reconnaissance and habitat assessment of the site, raptors actively foraging at the site were observed. Owl pellets that are indigestible material such as bones and fur left in the bird's gizzard and regurgitated by the owl were observed beneath some of the on-site trees. Canid scat potentially left by coyotes (*Canis latrans*) were observed throughout the site. Birds were observed actively using all parts of the site as forage and cover. Due to the timing of the survey, nesting activity was not observed (Tetra Tech, Inc.). While no Western Pond Turtles were observed, the man-made water features offer potential habitat.

Portions of APN 304-030-005 have potential habitat for occupation by burrowing owl. No burrowing owls were observed on the site or in the buffer zones to the site. No sign of burrowing owl was observed on the site or in the buffer zones to the site. No burrowing owls were found in the water feature or in areas adjacent to the water feature. Portions of APN 304-100-008 were observed to be suitable habitat for occupation by LAPM. A number of small mammal burrows were observed that could be occupied by this small mammal (Tetra Tech 2017). To reduce impacts to sensitive species from project activities, the following mitigations are proposed to reduce impacts to a less than significant level.

Mitigation Measures:

BIO-1. To remain in compliance with the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code 3503, 3503,5, and 3515 no direct impacts shall occur to any nesting birds, their eggs, chicks, or nests. Ground disturbance and vegetation removal activities should be conducted outside the nesting season (typically February 1 to September 15) and outside the raptor nesting season. A qualified biologist will conduct pre-construction surveys no more than three days to commencement of project activities to identify locations of nests within the 270-acre project site. If nesting birds are observed, a qualified biologist shall establish a clearly marked ~~a~~ perimeter around the nest. Avoidance and minimization measures shall be maintained until the young have fledged and no further nesting is detected.

BIO-2 A pre-construction survey of all suitable western burrowing owl habitat shall be conducted for burrowing owls 30 days prior to ground disturbance following the established protocol in the Burrowing Owl Survey Instructions for the Western Riverside County Multiple Species Habitat Conservation Area Plan. If burrowing owls are found present on the site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified in 48 hours. If owls are found on site, a burrowing owl relocation plan for active or passive relocation will be developed and implemented with review and approval site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service, and California Department of Fish and Wildlife.

BIO-3 As required by MSHCP, a focused night time trapping survey of APN 304-100-008 by a qualified biologist for small mammals shall be conducted prior to grading or ground disturbance to determine if Los Angeles Pocket Mouse are present. If found present on the site the Western Riverside County Regional Conservation Authority, United States Fish and Wildlife Service and California Department of Fish and Wildlife will be notified and a Determination of Biologically Equivalent or Superior Preservation document shall be prepared.

BIO-4 Three days prior to ground disturbance, certified biologist shall conduct a field survey of the existing water features of the project site to determine if Western Pond Turtles are present. Should Western Pond Turtles be observed at the man-

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

made water features on the project site, Western Riverside County Regional Conservation Authority, U.S Fish & Wildlife Service and California Department of Fish & Wildlife shall be notified and a protocol for handling the turtles shall be developed.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

b) Have a substantially adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U. S. Wildlife Service?		■		

Less Than Significant With Mitigation Incorporated - No vernal pools or habitat likely to have supported vernal pools were observed on the site during the reconnaissance survey. Culverts to drain stormwater runoff generated by off-site properties are found in APNs 304-030-005 and 304-100-004. A drainage that is approximately 4.4 acres of riverine habitat transects APN 304-030-005 trending from the east to the west. This drainage is part of a regional drainage system that terminates in Lake Elsinore found south of the site. The man-made open water feature that is approximately 3.1 acres in size is not connected to the on-site drainage system and was observed during the reconnaissance to support water fowl. If the project requires modification or work within the drainage or man-made pond, permits issued by the U.S. Army Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Wildlife would be required and impacts to regulated waters would be mitigated by permit-required Best Management Practices (BMPs). The following mitigations are proposed to reduce impacts to a less than significant level.

BIO-5 Prior to any disturbance in the riverine drainage or open water man-made feature found within the entire 270-acre project site the applicant shall consult the U.S. Army Corps of Engineers, Regional Water Quality Control Board, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to determine the regulatory status of the drainage and man-made feature.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

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?		■		

Less Than Significant With Mitigation Incorporated – As indicated earlier, no vernal pools or habitat likely to have supported vernal pools were observed on the site during the reconnaissance survey. The drainage found in APN 304-030-005 and man-made pond are likely subject to regulation. With incorporation of Mitigation BIO-4, noted above, a less than significant impact would occur.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

d) Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				■

No Impact - The project would be constructed in a site that has already been disturbed and built as a golf course. It is surrounded on all sides except to the south by fully developed suburban development with associated infrastructure. Lake Perris State Recreation Area, located south of the project site, is considered part of an important bird area within the San Jacinto Valley by the

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Audubon Society. The project is not within this area and will not interfere with the movement of migratory fish or wildlife species. The project will not interfere with an established native resident or migratory wildlife corridors. No impact would occur.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			■	

Less Than Significant Impact – The project will not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. The habitat assessment was completed in compliance with then Western Riverside Multi Species Habitat Conservation Plan (MSHCP). The MSHCP was approved by the County Board of Supervisors on June 17, 2003. Federal and State permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The City of Moreno Valley is a member agency to the Western Riverside MSHCP. With incorporation of Mitigations BIO 1 through BIO 3, noted above, impacts to the Western Riverside MSHCP would be less than significant.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?			■	

Less Than Significant Impact - The project site is not located within a designated Criteria Area as defined by the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). As noted earlier, the habitat assessment was completed in compliance with the Western Riverside MSHCP. The City of Moreno Valley is a member agency to the Western Riverside MSHCP. With incorporation of Mitigations BIO 1 through BIO 3, no impacts to the Western Riverside MSHCP would occur. A less than significant impact would occur.

(Source: Habitat Assessment For Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., June 2017 - Appendix D; General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Tetra Tech, Inc., November 2017 - Appendix E)

V. **CULTURAL RESOURCES**. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?				■

No Impact - A Cultural and Paleontological Resources Assessment was conducted in November of 2017 by Duke Cultural Resources Management, LLC. As part of this effort, DUKE CRM conducted a records search, field survey and supplemental research for archeological and historic resources. Based on the lack of recorded cultural resources within the Project, and the amount of prior earth-moving activity related to the original construction of the golf course, DUKE CRM indicates that no historical resources are likely to be impacted by the Project. In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		■		

Less Than Significant With Mitigation Incorporated - The Paleontological Resources Assessment finds that, due to the low potential to impact cultural resources, DUKE CRM does not recommend archeological monitoring of the Project. DUKE CRM does, however, recommend, per City requirement, that the following measures be implemented should archeological resources be discovered during construction;

Mitigation Measures:

CR-1: Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1. The location of the future reburial area shall be identified on a confidential exhibit on file with the City, and concurred to by the Consulting Native American Tribal Governments prior to certification of the environmental document.

CR-4: The City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		■		

Less Than Significant With Mitigation Incorporated - The Paleontological Resources Assessment noted above indicates that significant and unique paleontological resources may be impacted by the Project during deep earth disturbing activities, should these activities be implemented. These impacts would be considered potentially significant. Paleontological monitoring is recommended during ground disturbance associated with the Project.

Mitigation Measures:

CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61). Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

d) Disturb any human remains, including those interred outside of formal cemeteries?		■		

Less Than Significant With Mitigation Incorporated - As noted above, the Paleontological Resources Assessment finds that, there is low potential to impact cultural resources, including human remains. DUKE CRM does, however, recommend that the following measures be implemented should human remains be discovered during construction:

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

VI. **GEOLOGY AND SOILS.** Would the project:				
a) Expose people or structures to 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.			■	

Less Than Significant - The analysis finds that the San Jacinto Fault is the nearest known active fault and is located approximately 3.2 miles to the northeast of the project site. The investigation states that since no known earthquake faults are known to exist at, or project into the project site, the probability of ground surface rupture occurring at the site is considered nil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(ii) Strong seismic ground shaking?		■		

Less Than Significant With Mitigation Incorporated - The LOR Geotechnical Investigation states that the San Jacinto Fault is the nearest known active fault is located approximately 3.2 miles to the northeast of the project site and that the effects of ground shaking anticipated at the project site should be mitigated by implementation of the seismic design requirements and procedures outlined in Chapter 16 of the California Building Code.

Mitigation Measure:

GEO-1 The project buildings shall comply with the seismic design standards and requirements of Chapter 16 of the California Building Code.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(iii) Seismic-related ground failure, including liquefaction?			■	

Less Than Significant - As the site is underlain by dense older alluvial materials and igneous bedrock and the depth of groundwater is expected at fifty-plus feet, as described in the geotechnical analysis noted above, the potential for liquefaction is considered nil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(iv) Landslides?			■	

Less Than Significant – The occurrences of mass movement failures such as landslides, rockfalls, or debris flows are generally not considered common and no evidence of mass movement was observed on the project site.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
(b) Result in substantial soil erosion or the loss of topsoil?				■

No Impact – The earthen material and top soil resulting from the grading of the 22-acre apartment complex site will be spread over the 248 acres of golf course and exercise park. These areas will be re-seeded and re-planted and irrigation will be restored, reducing the potential for erosion. Landscape improvement plans will incorporate erosion control measures consistent with City standards and regulations. The 22-acre apartment site will be graded to establish building pads for the structures. Grading plans for the apartments will incorporate erosion control measures consistent with City standards and regulations. Thus, the project will not result in substantial soil erosion or the loss of topsoil.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(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?			■	

Less Than Significant – The geotechnical analysis noted above does not identify that the project is 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. Therefore, the resultant level of impact will be less than significant.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(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?				■

No Impact – The geologic analysis indicates that the materials encountered during the soils investigation were relatively granular and were tested and found to have very low expansion potential. Additionally, the site of the multi-family residential complex shall be graded and prepared such that the structures shall not be located on expansive soils and no substantial risks to life or property shall be created. Per the analysis, evaluation of on-site and imported soils for their expansion potential should be conducted following completion of the grading operation.

(Source: Preliminary Geotechnical Investigation, LOR Geotechnical Group, Inc., February 2017)

(e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				■

No Impact - The project will utilize existing sewer systems serving the community and will not use septic tanks or alternative waste water disposal systems.

(Source: Project Plans)

VII. **GREENHOUSE GAS EMISSIONS.** Would this project?				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?		■		

Less Than Significant With Mitigation Incorporated – Kunzman Associates, Inc. conducted a GHG modeling analysis to calculate the potential emissions associated with the construction and operation of the proposed project. To determine whether the proposed project is significant, the tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses and the SCAQMD Tier 4 2020 Target Service Population Threshold value of 4.8 MTCO2e/SP/year were utilized.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste, water, and construction equipment. CalEEMod 2016.3.1 was used to calculate the GHG emissions from the proposed project. The service population was estimated to be 1,213 future residents (estimated population from CalEEMod).

The proposed project's unmitigated emissions were calculated at 6,454.69 metric tons of CO2e per year, resulting in 5.32 MTCO2e/SP/year. According to the thresholds of significance identified above, a cumulative global climate change impact would potentially occur if the GHG emissions created from the on-going operations would exceed the SCAQMD draft screening threshold of 3,000 metric tons per year of CO2e and the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. As the proposed project's unmitigated emissions exceed both thresholds, mitigation is required.

The project's mitigated emissions were calculated at 4,476.49 MTCO2e per year, resulting in 3.69 MTCO2e/SP/year. Therefore, with incorporation of mitigation, the project's emissions meet the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects.

The project is located adjacent to a Riverside Transit Bus Stop on Moreno Beach Drive, north of Championship Drive. Mitigation measure AQ-2will provide sidewalks onsite to encourage use of nearby sources of alternative transportation which reduces the production of mobile source GHG emissions. Mitigation measure AQ-3 reduces the project's water requirements and therefore the energy and GHG emissions associated with water transport. Mitigation measure AQ-4 reduces the project's solid waste footprint and therefore the GHG emissions associated with transporting, processing and land-filling solid waste. Mitigation measure AQ-5 requires the installation of ENERGY-STAR appliances wherever appliances are to be installed on site. This reduces the project's electricity needs and therefore, the GHG emissions associated with energy production.

Therefore, with incorporation of mitigation measures AQ-2 through AQ-5 (as detailed in Section III a) above), project-related GHG emissions are also considered to be less than significant.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 – Appendix A)

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?		■		

Less Than Significant With Mitigation Incorporated – The proposed project would 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. The applicable plans for the proposed project are the City of Moreno Valley Greenhouse Gas Analysis, adopted February 2012 and the City of Moreno Valley Energy Efficiency and Climate Action Strategy (CAS), adopted October 2012. The City of Moreno Valley has adopted these plans in order to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Applicable reduction measures in the CAS include a requirement for energy efficient design for all new residential buildings to be 10% beyond the current Title 24 standards (R2-E1), to facilitate the use of renewable energy (such as solar [photovoltaic] panels or small wind turbines) for new residential developments (R2-E2). Please see Kunzman Air Quality Report and Global Climate Change Impact Analysis for additional details on the CAS.

SCAQMD's screening thresholds use 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. As the SCAQMD uses EO S-3-05 as the basis for their screening level, and EO S-3-05 includes the long-term goal to reduce greenhouse gas emissions to 80 percent below 1990 levels by 2050, the project would also be consistent with the goal of SB 32 (to reduce greenhouse gas emissions to 40 percent below 1990

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

levels by 2030). Therefore, projects that meet the current interim emissions targets/thresholds established by SCAQMD (as described in Section V, Air Quality Standards) would also be on track to meet the reduction targets for 2030. Furthermore, all 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.

Therefore as the project's mitigated emissions meet the threshold for compliance with Executive Order S-3-05, the project's emissions also comply with SB 32 and the goals of AB 32; which is also the goal of the City of Moreno Valley Greenhouse Gas Analysis.

At a mitigated level of 3.69 MTCO2e/SP/year, the project's GHG emissions fall well below the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. Furthermore, the project will comply with applicable Green Building Standards and City of Moreno Valley's policies regarding sustainability (as dictated by the City's General Plan and Greenhouse Gas Analysis (CAS)). Therefore, with incorporation of mitigation identified in III(a) above, and compliance with measures R2-E1 and R2-E2 from the City's CAS, the project will not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of greenhouse gases.

(Source: Air Quality and Global Climate Change Impact Analysis, Kunzman Associates, Inc., March 2017 – Appendix A)

VIII. **HAZARDS AND HAZARDOUS MATERIALS.** Would the project?				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?			■	

Less Than Significant Impact – The proposed project, specifically the operation and maintenance of the golf course, is associated with the routine use of hazardous materials and thus could create a significant hazard to the public or the environment. Implementation of and compliance with industry safety measures will result in a less than significant impact to the environment.

(Source: Phase I Environmental Site Assessment, BA Environmental)

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?		■		

Less Than Significant Impact with Mitigation - The Phase I analysis identified a number of existing conditions wherein potentially hazardous materials, such as machinery oils, landscape fertilizers and pesticides, were present as a result of the prior ongoing operation and maintenance of the golf course. The following mitigation measures will ensure that any impacts of said materials are less than significant.

HAZ-1: Any suspect asbestos-containing materials (ACMs) should be sampled prior to any renovation or demolition. Any identified ACMs scheduled for renovation or demolition, or noted to be damaged, should be abated by a licensed asbestos abatement contractor, and disposed of according to all state and local regulations;

HAZ-2: Repair all sources of moisture intrusion and replace all mold impacted or water-damaged building materials. A further visual assessment for mold should be completed and any mold observed should be abated by a contractor experienced in mold abatement.

HAZ-3: If soil contamination is suspected or observed in the project area, then excavated soils should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations.

HAZ-4: If during construction/demolition of the project, soils and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. Should contaminated soils and/or groundwater be encountered, a remediation plan will be formulated and implemented in accordance with all applicable regulation and overseen by the City of Moreno Valley and Riverside County Department of Environmental Health.

(Source: Phase I Environmental Site Assessment, BA Environmental)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				■

No Impact – Ridgecrest Elementary School is located 0.30 miles from the project site and Landmark Middle School is located approximately one half mile from the propose multi-family residential site and thus the project will not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

(Source: Project Plans)

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?				■

No Impact – The project is not located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and will not create a significant hazard to the public or the environment.

(Source: Project Plans; City of Moreno Valley)

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?				■

No Impact – The project is not located within two miles of a public airport or public use airport. The project site is within the FAR Part 77 Military Outer Horizontal Surface Limits of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Said plan does not identify the project site as being within a Land Use Compatibility Zone nor as being a potential safety hazard for people residing or working in the project area.

(Source: March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, November 2014 – Appendix)

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				■

No Impact - The project is not located within the vicinity of a private airstrip.

(Source: City General Plan)

g) Impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan?				■

No Impact – The project will not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan.

(Source: City General Plan)

h) 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?			■	

Less Than Significant Impact – The project site location for the proposed apartment complex is approximately 500 feet northwest of the high-fire area associated with Mount Russell and would not expose people or structures to a significant risk of loss, injury or

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

(Source: City General Plan; Google Earth)

IX. **HYDROLOGY AND WATER QUALITY**. Would the project:				
a) Violate any water quality standards or waste discharge requirements?			■	

Less Than Significant Impact - As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil) which would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities for the apartment complex would temporarily expose soils to wind and water erosion that would contribute to downstream sedimentation. Storm flows from the existing golf course bypass the development and will continue to be conveyed to the existing storm drain under Moreno Beach Drive. The proposed project would comply with all permits and development guidelines associated with urban water runoff and discharge set forth by the City of Moreno Valley and the Regional Water Quality Control Board. A Preliminary Water Quality Management Plan has been approved and a Final Water Quality Management Plan is required prior to any grading on the site to address urban runoff. A Final Water Quality Management Plan will include site design best management practices (BMP's), source control BMP's, treatment control BMP's, operation and maintenance BMP's, and sources of funding BMP's for BMP implementation. With the approval of the storm drainage facilities by the City Engineer and Riverside County Flood Control District as well as complying with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix F)

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			■	

Less Than Significant - Eastern Municipal Water District would provide the proposed project with water supplies. Water supplies are adequate to serve the proposed project. Although the project would cover a majority of the site with impervious surfaces, the landscaped area would still provide a means for groundwater recharge. Impacts would be less than significant in that the project will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			■	

Less Than Significant Impact - There is an existing storm flow of approximately 200 CFS from an offsite tributary that bisects the site in a northwesterly direction. These flows currently run above-ground through the site. The proposal is to convey these flows in an underground pipe, outletting easterly of Moreno Beach Drive at an existing storm drain where it is conveyed under the street. As the storm flows will be conveyed underground, there will be a reduction in both erosion and siltation. The existing golf course drainage will not be altered.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or off site?			■	

Less Than Significant Impact - While the conveyance of storm flows that currently run naturally through the site will be piped, all offsite tributary flows will be accepted and outletted at the existing storm drain at Moreno Beach Drive. The runoff from the proposed development will not substantially increase the existing flows and will not result in on-site or off-site flooding. Further, any increased runoff due to the site development will be mitigated with the construction of an infiltration basin. Storm drain plans and hydrology/hydraulic calculations will be approved by the City's Land Development-Engineering Department.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			■	

Less Than Significant Impact – All storm drainage improvement would be developed to the standards of the City Engineer and the Riverside County Flood Control Agency. Additionally, the project has been designed in accordance with the City's standard conditions of approval, which include measures pertaining to storm drainage facilities and runoff.

As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. With the incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F ; Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix I)

f) Otherwise substantially degrade water quality?			■	

Less Than Significant Impact – As with any urban project, runoff entering the storm drainage system would contain minor amounts of pollutants (including pesticides, fertilizers and motor oil). This would incrementally contribute to the degradation of surface and sub-surface water quality. Additionally, grading activities would temporarily expose soils to water erosion that would contribute to downstream sedimentation. However, the project is subject to the permit requirements of the Santa Ana Regional Water Quality Control Board. As the site is currently unpaved and exposed, development of the proposed project would lessen the existing site contribution to sediment runoff at project completion. With the incorporation of conditions of approval into the project's design, as well as compliance with all applicable storm water discharge permits, impacts would be less than significant.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F ; Project Specific Water Quality Management Plan, Winchester Associates, Inc., July 2017 – Appendix I)

g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			■	

Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

The project will not place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?			■	

Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007.

The 417-unit apartment project as designed and as conditioned, will not place structures which would impede or redirect flood flows. The project will not place within a 100-year flood hazard area structures which would impede or redirect flood flows.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc., July 2017 – Appendix F)

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			■	

Less Than Significant Impact – The current Federal Emergency Management Agency (FEMA) maps indicated that the site is currently zoned X, which is defined as outside the 100-year floodplain. The Community Panel Number is 06065C 0770 G for APN 304-100-007. The 417-unit apartment project as designed and as conditioned, will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as the result of the failure of a levee or dam. The project is not located in a flood inundation area and thus will not expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. The nearest dam is the Perris Lake Dam located approximately 3.7 miles southwest of the project site.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F ; Google Earth)

j) Inundation by seiche, tsunami, or mudflow?				■

No Impact – The site is not identified in the General Plan as a location subject to seiche, tsunami, or mudflow. The project will not expose people to inundation by seiche, tsunami, or mudflow.

(Source: Hydrology and Hydraulic Studies, Winchester Associates, Inc. July 2017 – Appendix F)

X. **LAND USE AND PLANNING**. Would the project:				
a) Physically divide an established community?				■

No Impact – The project site is surrounded by existing residential development and is essentially an extension of the existing 176-unit multi-family apartment complex immediately north of and adjacent to the project site. The project will not physically divide an established community.

(Source: Project Plans; City General Plan)

b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Less Than Significant Impact – With the approval of a General Plan Amendment and Specific Plan Amendment, the proposed development of 417 residential dwelling units would be consistent with the City General Plan Land Use Designation as well as the land use and text established in the Moreno Valley Ranch Specific Plan. The project proposes to amend the General Plan from Open Space to Residential (R20) and the Moreno Valley Ranch Specific Plan land use designation from Golf Course (GC) to High Residential (HR) to permit the development of the multi-family residential complex. The proposed project would be consistent with General Plan Community Development Goal 2.4 and Objective 2.2 regarding the provisions of a wide variety of residential housing opportunities throughout the community, while remaining compliant with Parks, Recreation and Open Space Goal 4.2 and associated Objective 4.2 and Policies 4.2.1 and 4.2.2 regarding the provisions of safe, affordable and accessible recreation opportunities.

(Source: City General Plan)

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				■

No Impact - The project site is not located within a designated Criteria Area as defined by the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP). The project will comply with MSHCP policies, including the requirement to pay the MSHCP mitigation fees for 417 dwelling units. Based on the current adopted mitigation fee, this would provide approximately $440,000.00 to the Regional Conservation Authority towards the implementation efforts and programs. No impacts would occur.

(Source: General Biological Reconnaissance and Habitat Assessment, Tetra Tech, Inc., November 2017; City's Adopted MSHCP Fee Ordinance)

XI. **MINERAL RESOURCES.** Would the project:				
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?				■

No Impact - No known mineral resources exist on the project site and thus will not 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.

(Source: City General Plan)

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?				■

No Impact - The project will not 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 in that no such mineral resources exist on the project site.

(Source: City General Plan)

XII. **NOISE.** Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

A Noise Impact Analysis was prepared by Kunzman Associates, Inc. in September 2016. In addition to adherence to the City of Moreno Valley's policies found in the General Plan Noise Element and Municipal Code limiting the construction hours of operation, the mitigation measures listed below are recommended to reduce construction noise and vibrations, emanating from the proposed project.

Less Than Significant –The analysis revealed that the ambient noise level near the center of the apartment complex site was 47.6 dBA L_{eq}, within City standards. Sensitive receptors that may be affected by project generated noise include the multi-family and single-family residential dwelling units surrounding the project site. While short-term noise levels during construction will result in a temporary and intermittent increase in noise levels, the long-term noise generated by the proposed multi-family residential project can be expected to be comparable to the noise generated by the existing multi-family residential development immediately to the north the proposed project site. The multi-family residential complex will comply with all State and Local building codes and regulations and will not expose persons to or generate noise levels in excess of standards established in the City General Plan.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			■	

Less Than Significant – Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. The nearest existing structures to the project site are located approximately 25 feet to the north of the project site. The threshold at which there may be a risk of architectural damage to normal houses with plastered walls and ceilings is 0.20 PPV in/second. Primary sources of vibration during construction would be from bulldozers. A large bulldozer could produce up to 0.089 PPV at 25 feet. Therefore, at up to 0.089 PPV at 25 feet a large bulldozer yields a worst-case noise level well below the threshold of perception and below any risk of architectural damage.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			■	

Less Than Significant – The ongoing, post-construction operation of the proposed multi-family residential complex, including vehicular traffic, resident activity, etc., will generate noise levels very similar to the existing multi-family residential complex directly north of and adjacent to the proposed apartment complex site. Industry standards accept the premise that a new land use located adjacent to an existing same land use, will result in an increase in ambient noise level by no more than 3.0dBA. Thus it can be expected that the proposed apartment complex, located adjacent to an existing apartment complex, will not increase the ambient noise level by more than 3.0dBA. Addressing environmental safety and noise in particular, Section 6.4.3, General Plan indicates that "people in general cannot perceive an increase or decrease of 1.0dBA," while "a 3.0 dBA increase is considered noticeable" and that "an increase of 5.0dBA is often necessary before any noticeable change in community response (i.e. complaints) would be expected." The General Plan establishes that an increase of 3.0dBA would not necessarily be problematic while an increase in 5.0 dBA would result in complaints from affected residents. Therefore, Project development will not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. The resultant impact level is less than significant.

NOI-1 Provide forced air circulation systems or air conditioning systems shall be provided for the group of multi-family attached residential dwelling units located immediately west of the driving range(15100 Moreno Beach Drive, Assessor's Parcel Number 304-100-002).

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan, City Municipal Code)

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		■		

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Less Than Significant With Mitigation Incorporated – The construction of the apartments will result in a temporary increase in ambient noise levels, particularly in that area directly adjacent to the existing apartments. Existing multi-family attached and single-family detached residential dwelling units located to the north, east, south, and west of the project site may be affected by short-term noise impacts associated with the transport of workers, the movement of construction materials to and from the project site, ground clearing, excavation, grading, and building activities.

Site grading is expected to produce the highest sustained construction noise levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, an excavator, a backhoe, and a water truck (modeled as a dump truck) operating between 25 and 350 feet from the property line. Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels have the potential to reach 84.3 dBA L_{eq} and 87.7 dBA_{Lmax} at the property line during grading.

Construction noise is considered a short-term impact and would be considered significant if construction activities are undertaken outside the allowable times as described by the City's Municipal ordinances 8.14.040 and 8.14.050. The City of Moreno Valley General Plan Objective 6.5 requires the minimization of noise impacts from significant noise generators such as construction. Policy 6.5.2 states that construction activities shall be operated in a manner that limits noise impacts on surrounding uses. Mitigation measures to minimize the impact of construction on nearby sensitive receptors are provided below:

NOI-2 During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

NOI-3 The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

NOI-4 Equipment shall be shut off and not left to idle when not in use.

NOI-5 The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

NOI-6 Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

(Source: Noise Impact Analysis, Kunzman Associates, Inc., September 2016; City General Plan)

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 expose people residing or working in the project area to excessive noise levels?			■	

Less Than Significant Impact – The project is not located within two miles of a public airport or public use airport. The project site is within the FAR Part 77 Military Outer Horizontal Surface Limits of the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan. Said plan does not identify the project site as being within a Land Use Compatibility Zone and thus would not expose people residing or working in the project area to excessive noise levels.

(Source: March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, Mead & Hunt, November 2014)

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

No Impact – The project is not within the vicinity of a private airstrip and therefore, would the not expose people residing or working in the project area to excessive noise levels.

(Source: City General Plan)

XIII. **POPULATION AND HOUSING.** Would the project:				
a) Induce substantial 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)?			■	

General Discussion – It should be noted that, as indicated earlier in this document, the Moreno Valley Ranch Specific Plan, with 12,703 residential dwelling units, and supporting commercial, educational, and recreational land uses on 3,959 acres, was approved by the City with full CEQA analysis, including potential impacts to Public Services. The approval of Specific Plan Amendments Nos. 1 through 8 have reduced the number of dwelling units in the Moreno Valley Ranch community by slightly more than 2,000 dwelling units. The Specific Plan Amendment No. 9, currently under consideration, would add back 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units and an expected associated incremental decrease on demand for public services.

Less Than Significant – The project is located in a fully developed area of the City and is essentially an extension of the existing multi-family apartment complex immediately to the north. The project is not required to extend roads or other infrastructure. Although proposing 417 new multi-family homes with an estimated population increase of approximately 1,418 persons, the project will not induce substantial population growth in an area, either directly or indirectly.

(Source: Project Plans; City General Plan)

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				■

No Impact - The project does not propose remove existing housing stock. Thus, the project will not displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

(Source: Project Plans)

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				■

No Impact - The project does not propose to remove existing housing stock. Thus, the project will not displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

(Source: Project Plans)

XIV. **PUBLIC SERVICES.** Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government 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:

General Discussion – It should be noted that, as indicated earlier in this document, the Moreno Valley Ranch Specific Plan, with 12,703 residential dwelling units, and supporting commercial, educational, and recreational land uses on 3,959 acres, was approved by the City with full CEQA analysis, including potential impacts to Public Services. The approval of Specific Plan Amendments Nos. 1 through 8 have reduced the number of dwelling units in the Moreno Valley Ranch community by slightly more than 2,000 dwelling units. The Specific Plan Amendment No. 9, currently under consideration, would add back 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units and an expected associated incremental decrease on demand for public services.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Fire protection?			■	

Less Than Significant – The project site presently receives fire protection and emergency services. The project with 417 new dwelling units will result in an incremental increase in the need for fire protection services. Participation in existing City development impact fee programs will ensure that adequate fire protection services will continue to be available without the need for new facilities.

(Source: City General Plan)

b) Police protection?			■	

Less Than Significant - The project site presently receives police protection. The project with 417 new dwelling units will result in an incremental increase in the need for police protection services. Participation in existing City development impact fee programs will ensure that adequate police protection services will continue to be available without the need for new facilities.

(Source: City General Plan)

c) Schools?			■	

Less Than Significant – The project with 417 new dwelling units will result in an incremental increase in education facilities and schools. Based on current Moreno Valley Unified School District student generation rates for multi-family residential development, the project will result in an additional 149 K-5 students, 57 middle school students and 64 high school students. Participation in existing development impact fee programs will ensure that adequate school facilities will continue to be available.

(Source: Moreno Valley Unified School District)

d) Parks?				■

No Impact – The project will re-establish the golf course for public use and create a new park/open space facility that will provide exercise training facilities for public use. The Recreation Park & Exercise Trail will include exercise stations, warm-up/stretching area, 5K running course, youth golf practice facilities, restroom and water station. The golf course and the new park/exercise training facility will be maintained by the golf course operator. Existing public parks and distance from the proposed apartment complex include Fairway Park (0.4 miles), Ridgecrest Park (0.5 miles) and Celebration Park (0.6 miles).

(Source: Project Plans; City General Plan; Google earth)

e) Other public facilities?			■	

Less Than Significant – The project site is located in a fully developed area of the City and enjoys existing services, facilities and utilities. The project will result in an incremental increase in the need for public facilities such as social services, adult education, etc. However, the project would not result in substantial adverse physical impacts associated with the provision of new or physically altered government 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.

(Source: City of Moreno Valley; County of Riverside)

XV. **RECREATION.**				
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				■

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

No Impact - The project will re-establish the golf course for public use and create a 85-acre park/open space facility, maintained by the golf course operator, that will provide exercise training facilities for public use and therefore will not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. Existing public parks and distance from the proposed apartment complex include Fairway Park (0.4 miles), Ridgecrest Park (0.5 miles) and Celebration Park (0.6 miles).

(Source: Project Plans; City General Plan; Google Earth)

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?				■

No Impact - The project will re-establish the golf course for public use and create a park/open space facility that provide exercise training facilities for public use. The project does not project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

(Source: Project Plans)

XVI. **TRANSPORTATION/TRAFFIC.** Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		■		

Less Than Significant With Mitigation Incorporated – With mitigation incorporated as noted in b) below, the project will not conflict with the Riverside County Congestion Management Program (CMP) or the City General Plan Circulation Element establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

(Source: City General Plan)

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?		■		

Less Than Significant With Mitigation Incorporated – With mitigation incorporated as noted below, the project will not conflict with level of service standards and travel demand measures, or other standards established by the City.

Mitigation Measures:

CIR-1 Prior to the issuance of Certificates of Use and Occupancy, construct and/or repair Championship Drive, at proposed project access driveway, from the west boundary to the east boundary at its ultimate half-section width in conjunction with development, including landscaping and parkway improvements.

CIR-2 Prior to the issuance of Certificates of Use and Occupancy, construct and/or repair Moreno Beach Drive, at proposed access driveway, from the north project boundary to the south project boundary its half-width section in conjunction with development, including landscaping and parkway improvements.

CIR-3 On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

CIR-4 Sight distance at project accesses shall comply with standard California Department of Transportation and City of Moreno Valley sight distance standards. The final grading, landscaping and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to the issuance of grading permits.

CIR-5 Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

(Source: City General Plan; Traffic Impact Analysis, Kunzman Associates, December 2017)

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				■

No Impact – The project is not in proximity to public or private airports.

(Source: City General Plan)

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?				■

No Impact – The project will utilize existing circulation improvements and will not modify existing design features so as to increase hazards, nor will the project introduce incompatible uses.

(Source: Project Plans)

e) Result in inadequate emergency access?			■	

Less Than Significant – Mitigation Measure CIR-1 requires that improvements be made to Championship Drive such that emergency access will be provided, permitting the residents of the residential complex to exit the project site in the event of an emergency, via Championship Drive. With mitigation incorporated as noted above, especially CIR-1, the project will ensure adequate emergency access.

(Source: Project Plans)

f) Conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				■

No Impact – City General Plan Circulation Objective 5.1 states that the City shall "create a safe, efficient and neighborhood-friendly street system." Policy 5.1.1 states that the City shall "plan access and circulation of each development project to accommodate vehicles (including emergency vehicles and trash trucks), pedestrians and bicycles." The proposed project is consistent with these objectives and policies. Additionally, the project is in compliance with Circulation Objective 5.3, which endeavors to "maintain Level of Service (LOS) "C" on roadway links, wherever possible." The project will not conflict with adopted policies or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

(Source: Moreno Valley Ranch Specific Plan; City General Plan Circulation Element)

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
XVII. TRIBAL CULTURAL RESOURCES – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 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:				
a) 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 section 5020.1(k), or			■	

Less Than Significant Impact - In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes. While there are no known resources on the project site that are 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 section 5020.1(k), Mitigation Measures CR-1 through CR-6 have been formulated, as set forth in Section V. Cultural Resources of this document and copied below, ensuring that any impacts would remain at a less-than-significant level.

Mitigation Measures:

CR-1: Prior to the issuance of a grading permit, the developer shall retain a professional archaeologist to conduct monitoring of all mass grading and trenching activities. The Project Archaeologist shall have the authority to temporarily redirect earthmoving activities in the event that suspected archaeological resources are unearthed during Project construction. The Project Archaeologist, in consultation with the Consulting Tribe(s), the contractor, and the City, shall develop a Cultural Resources Management Plan (CRMP) in consultation pursuant to the definition in AB52 to address the details, timing and responsibility of all archaeological and cultural activities that will occur on the project site. A consulting tribe is defined as a tribe that initiated the AB 52 tribal consultation process for the Project, has not opted out of the AB52 consultation process, and has completed AB 52 consultation with the City as provided for in Cal Pub Res Code Section 21080.3.2(b)(1) of AB52. Details in the Plan shall include:

a. Project grading and development scheduling;

b. The Project archeologist and the Consulting Tribes(s) as defined in CR-1 shall attend the pre-grading meeting with the City, the construction manager and any contractors and will conduct a mandatory Cultural Resources Worker Sensitivity Training to those in attendance. The Training will include a brief review of the cultural sensitivity of the Project and the surrounding area; what resources could potentially be identified during earthmoving activities; the requirements of the monitoring program; the protocols that apply in the event inadvertent discoveries of cultural resources are identified, including who to contact and appropriate avoidance measures until the find(s) can be properly evaluated; and any other appropriate protocols. All new construction personnel that will conduct earthwork or grading activities that begin work on the Project following the initial Training must take the Cultural Sensitivity Training prior to beginning work and the Project archaeologist and Consulting Tribe(s) shall make themselves available to provide the training on an as-needed basis;

c. The protocols and stipulations that the contractor, City, Consulting Tribe(s) and Project archaeologist will follow in the event of inadvertent cultural resources discoveries, including any newly discovered cultural resource deposits that shall be subject to a cultural resources evaluation.

CR-2: Prior to the issuance of a grading permit, the developer shall secure agreements with the Pechanga Band of Luiseño Indians and Soboba Band of Luiseño Indians for tribal monitoring. The developer is also required to provide a minimum of 30 days advance notice to the tribes of all mass grading and trenching activities. The Native American Tribal Representatives shall have the authority to temporarily halt and redirect earth moving activities in the affected area in the event that suspected archaeological resources are unearthed. If the Native American Tribal Representatives suspect that an archaeological resource may have been unearthed, the Project Archaeologist or the Tribal Representatives shall immediately redirect

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

grading operations in a 100-foot radius around the find to allow identification and evaluation of the suspected resource. In consultation with the Native American Tribal Representatives, the Project Archaeologist shall evaluate the suspected resource and make a determination of significance pursuant to California Public Resources Code Section 21083.2.

CR-3: In the event that Native American cultural resources are discovered during the course of grading (inadvertent discoveries), the following procedures shall be carried out for final disposition of the discoveries:

a) One or more of the following treatments, in order of preference, shall be employed with the tribes. Evidence of such shall be provided to the City of Moreno Valley Planning Department:

i. Preservation-In-Place of the cultural resources, if feasible. Preservation in place means avoiding the resources, leaving them in the place they were found with no development affecting the integrity of the resources.

ii. Onsite reburial of the discovered items as detailed in the treatment plan required pursuant to Mitigation Measure CR-1. This shall include measures and provisions to protect the future reburial area from any future impacts in perpetuity. Reburial shall not occur until all legally required cataloging and basic recordation have been completed. No recordation of sacred items is permitted without the written consent of all Consulting Native American Tribal Governments as defined in CR-1. The location of the future reburial area shall be identified on a confidential exhibit on file with the City, and concurred to by the Consulting Native American Tribal Governments prior to certification of the environmental document.

CR-4: The City shall verify that the following note is included on the Grading Plan:

"If any suspected archaeological resources are discovered during ground-disturbing activities and the Project Archaeologist or Native American Tribal Representatives are not present, the construction supervisor is obligated to halt work in a 100-foot radius around the find and call the Project Archaeologist and the Tribal Representatives to the site to assess the significance of the find.

CR-5: If potential historic or cultural resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person meeting the Secretary of the Interior's standards (36 CFR 61). Tribal Representatives, and all site monitors per the Mitigation Measures, shall be consulted by the City to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, or prehistoric resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all Consulting Native American Tribes as defined in CR-1 before any further work commences in the affected area.

CR-6: If human remains are discovered, no further disturbance shall occur in the affected area until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant". The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

(Source: Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago, Duke CRM, June 2017 – Appendix C; Cultural and Paleontological Resources Assessment: Moreno Valley Ranch Golf Course Project, Duke CRM, November 2017 – Appendix B)

b) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Less Than Significant Impact - In compliance with State legislation AB52 and SB18, the City of Moreno Valley has initiated consultation with recognized Native American Tribes. The City has received correspondence from the Pechanga Tribe and the applicant is preparing a response to their comments and requests.

(Source: City of Moreno Valley Planning Department)

XVIII. **UTILITIES AND SERVICE SYSTEMS.** Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			■	

Less Than Significant – Eastern Municipal Water District (EMWD) will provide wastewater treatment services to the project site, including the apartment complex. EMWD presently services the existing development surrounding the project site. While the project will result in an increase in wastewater treatment services with the generation of approximately 62,550 gallons of wastewater per day, the project will not exceed wastewater treatment requirements of EMWD or the Santa Ana Regional Water Quality Control Board.

(Source: Eastern Municipal water District)

b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	

Less Than Significant - The project site is presently served by Eastern Municipal Water District and, while resulting in an increase in water demand of approximately 121,000 gallons per day and generate approximately 62,550 gallons of wastewater to be treated per day, the project will not require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

(Source: Eastern Municipal Water District; Project plans)

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			■	

Less Than Significant – The project will make necessary improvements, such as on-site retention and detention facilities, to accommodate storm water drainage and will not require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

(Source: Project plans)

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			■	

Less Than Significant – The project site presently receives domestic water service from Eastern Municipal Water District and will continue to have sufficient water supplies available to serve the increased water demand of approximately 121,000 gallons per day resulting from the project with existing entitlements and resources. No new or expanded entitlements are needed.

(Source: Eastern Municipal Water District)

e) Result in a determination by the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Less Than Significant – Although the project proposes to construct an additional 417 dwelling units, the overall dwelling unit count established for the Moreno Valley Ranch has not been exceeded. As noted earlier, Specific Plan Amendments Nos. 1 through 8 have resulted in a reduction of over 2,000 residential dwelling units. This Specific Plan Amendment No. 9 will add 417 dwelling units, resulting in a net decrease of approximately 1,825 dwelling units. Eastern Municipal Water District presently provides wastewater treatment services to the project site and the surrounding community. Adequate capacity exists to serve the project's projected demand for treatment of approximately 62,550 gallons of wastewater per day, in addition to the provider's existing commitments.

(Source: City of Moreno Valley; Eastern Municipal Water District)

f)) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			■	

Less Than Significant – Solid waste disposal services are provided by Waste Management through the City of Moreno Valley. Waste Management will utilize Badlands Sanitary Landfill in Moreno Valley and/or Lamb Canyon Sanitary Landfill in Beaumont. Both landfills are presently operating at approximately 50% capacity and are fully capable of accepting the solid waste generated by the proposed project. While the project result in an increment increase in demands on landfill capacities, the project will be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs.

(Source: County of Riverside, Department of Waste Resources; City of Moreno Valley)

g) Comply with federal, state, and local statues and regulations related to solid waste?				■

No Impact – The project will fully comply with the City's 'Source Reduction and Recycling Element' pursuant to State of California Integrated Waste Management Act mandate AB939.

(Source: City General Plan)

XIX. **MANDATORY FINDINGS OF SIGNIFICANCE.**				
a) Does the project 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, 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?			■	

Less Than Significant – The 270-acre project site has been previously developed as a 27-hole golf course. The 22-acre multi-family site was previously used as the driving range for the golf course. The project site is in a fully developed area of the City and is surrounded by existing residential development. Primary grading operations will be concentrated on the 22-acre multi-family residential site with minimal grading of the golf course. Therefore, the project will 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, reduce the number or restrict the range of a rare or endangered plant or animal. Additionally, mitigation measures have been incorporated herein, in consultation with affected Native American Tribes, to ensure that the project will not 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)?			■	

Issues and Supporting Information	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact

Less Than Significant - The site for the multi-family residential development is located on what was formally used as the practice driving range for the 270-acre, 27-hole Moreno Valley Golf Course and is surrounded by existing residential development and the golf course clubhouse. The proposed apartment project is essentially an extension of the existing multi-family 176-unit apartment complex immediately to the north and represents the only practicable redevelopment opportunity in the immediate area. The project will not considerably add to the environmental impacts of past or current projects and will not induce future development in the area.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			■	

Less Than Significant – The apartment complex component of the proposed project has the highest potential to result in significant impacts to the environment. As determined by this environmental analyses, the project, including the apartment complex, with implementation of the mitigation measures incorporated herein, will not result in environmental impacts which will cause substantial adverse effects on human beings, either directly or indirectly.

TECHNICAL APPENDICES

APPENDIX A. Air Quality and Global Climate Change Impact Analysis – March 31, 2017

APPENDIX B. Cultural and Paleontological Resources Assessment: Moreno Valley Golf Course Project – November 22, 2017

APPENDIX C. Cultural and Paleontological Resources Assessment: The Reserve at Rancho Belago – June 2017

APPENDIX D. Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, The Reserve at Rancho Belago Phase II – June 6, 2017

APPENDIX E. General Biological Reconnaissance and Habitat Assessment for Burrowing Owl and Los Angeles Pocket Mouse, Moreno Valley Ranch Golf Course – November 2017

APPENDIX F. Hydrology and Hydraulic Studies – July 2017

APPENDIX G. Preliminary Geotechnical Investigation Proposed Apartment Complex Moreno Valley Ranch Golf Course – February 21, 2017

APPENDIX H. Traffic Impact Analysis (Revised) – February 8, 2018

APPENDIX I. Water Quality Management Plan – July 19, 2017

APPENDIX J. Noise Impact Analysis, Kunzman Associates, Inc. - September 1, 2016

APPENDIX K. Phase I Environmental Assessment, BA Environmental – April 14, 2016

APPENDIX A

KUNZMAN ASSOCIATES, INC.

MORENO VALLEY RANCH GOLF COURSE APARTMENTS

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

March 14, 2017

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

MORENO VALLEY RANCH GOLF COURSE APARTMENTS

AIR QUALITY AND GLOBAL CLIMATE CHANGE IMPACT ANALYSIS

March 14, 2017

Prepared by:

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I. INTRODUCTION AND SETTING

A. Purpose and Objectives

This study was performed to address the possibility of regional and 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
- recommendations for mitigation measures

The City of Moreno Valley is the lead agency responsible for preparation of this air quality 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.

B. Project Location

The project site is located on approximately 19 acres south of John F. Kennedy Drive and east of Moreno Beach Drive in the City of Moreno Valley. The project site's existing zoning from the City of Moreno Valley General Plan is Residential. The project location is provided on Figure 1.

C. Project Description

The site is proposed to be developed with 424 apartment dwelling units and an approximately 8,000 square foot clubhouse with pool and tot lot. The apartment complex will include a total of 16 buildings consisting of five different building types, Type 1, Type 1A, Type 2, Type 3, and an E-Urban building. There will be one E-Urban building with 144 apartment dwelling units, six Type 1 buildings each with 10 apartment dwelling units, one type 1A building with 12 apartment dwelling units, four Type 2 buildings each with 20 apartment dwelling units, and four Type 3 buildings each with 32 apartment dwelling units. The project would also include 491 parking spaces. Figure 2 illustrates the proposed project site plan.

D. Phasing and Timing

The project is anticipated to be built in two phases. Construction of Phase 1 is expected to begin no earlier than July 2017 and be completed in early July 2018, while Phase 2 is expected to begin early July 2018 and be completed in early July 2019. However, to be

conservative, the project has been modeled as one phase beginning July 2017 and ending July 2018. The proposed project is anticipated for opening in 2018.

E. 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 defines a sensitive receptor as a land use such as residences, schools, child care centers, athletic facilities, playgrounds, retirement homes and convalescent homes (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 project site include multi-family attached and single-family detached residential dwelling units surrounding the project site. In addition, Ridgecrest Elementary School is approximately 0.22 miles northeast and Landmark Middle School is approximately 0.39 miles west of the project site.

F. Executive Summary of Findings

Construction-Source Emissions
Project construction-source emissions would not exceed applicable regional thresholds of significance established by the 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
With incorporation of mitigation, the 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 impact as discussed in the Operations-Related Local Air Quality Impacts section of this report. Additionally, project-related traffic will not cause or result in CO concentrations exceeding applicable state and/or federal standards (CO “hotspots). Project operational-source emissions would therefore 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). With incorporation of mitigation, 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. With incorporation of mitigation, project-related GHG emissions are also considered to be less than significant.

Figure 1
Project Location Map

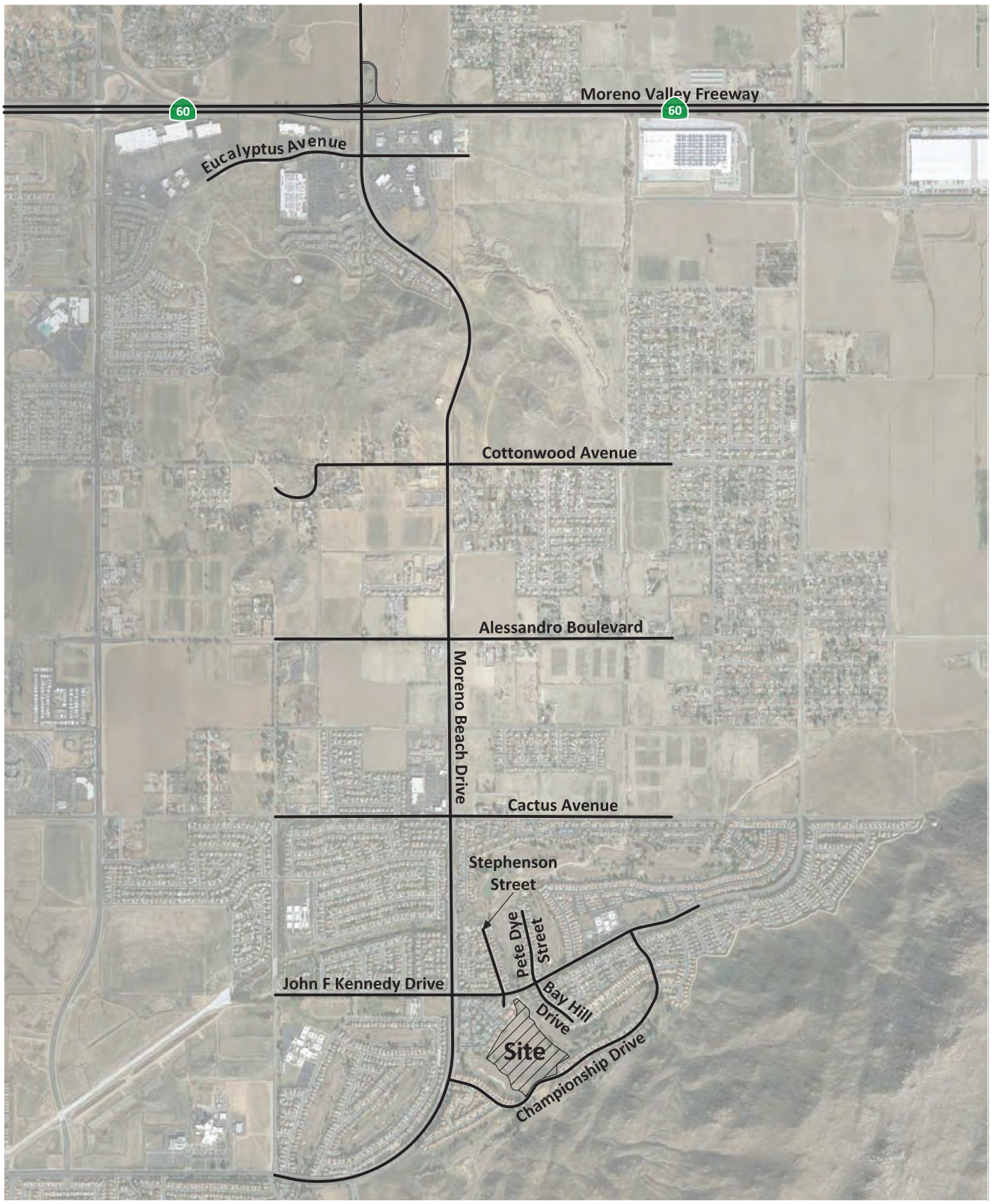

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Figure 2
Site Plan

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II. ATMOSPHERIC SETTING

The project site is located within the western portion of Riverside County, which is part of the South Coast Air Basin (Basin) that includes all of Orange County as well as the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The South Coast Air Basin is located on a coastal plain with connecting broad valleys and low hills to the east. Regionally, the South Coast Air Basin is bounded by the Pacific Ocean to the southwest and high mountains to the east forming the inland perimeter. The project site is located toward the northeast portion of the South Coast Air Basin near the foot of the San Bernardino Mountains, which define the eastern boundary of the South Coast Air Basin.

The climate of western Riverside County, technically called an interior valley subclimate of the Southern California's Mediterranean-type climate, is characterized by hot dry summers, mild moist winters with infrequent rainfall, moderate afternoon breezes, and generally fair weather. Occasional periods of strong Santa Ana winds and winter storms interrupt the otherwise mild weather pattern. The clouds and fog that form along the area's coastline rarely extend as far inland as western Riverside County. When morning clouds and fog form, they typically burn off quickly after sunrise. The most important weather pattern from an air quality perspective is associated with the warm season airflow across the populated areas of the Los Angeles Basin. This airflow brings polluted air into western Riverside County late in the afternoon. This transport pattern creates unhealthful air quality that may extend to the project site particularly during the summer months.

Winds are an important parameter in characterizing the air quality environment of a project site because they both determine the regional pattern of air pollution transport and control the rate of dispersion near a source. Daytime winds in western Riverside County are usually light breezes from off the coast as air moves regionally onshore from the cool Pacific Ocean to the warm Mojave Desert interior of Southern California. These winds allow for good local mixing, but as discussed above, these coastal winds carry significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the South Coast Air Basin into the interior valleys which become trapped by the mountains that border the eastern edge of the South Coast Air Basin.

In the summer, strong temperature inversions may occur that limit the vertical depth through which air pollution can be dispersed. Air pollutants concentrate because they cannot rise through the inversion layer and disperse. These inversions are more common and persistent during the summer months. Over time, sunlight produces photochemical reactions within this inversion layer that creates ozone, a particularly harmful air pollutant. Occasionally, strong thermal convections occur which allows the air pollutants to rise high enough to pass over the mountains and ultimately dilute the smog cloud.

In the winter, light nocturnal winds result mainly from the drainage of cool air off of the mountains toward the valley floor while the air aloft over the valley remains warm. This forms a type of inversion known as a radiation inversion. Such winds are characterized by stagnation and poor local mixing and trap pollutants such as automobile exhaust near their source. While these inversions may lead to air pollution "hot spots" in heavily developed coastal areas of the basin, there is not enough traffic in inland valleys to cause any winter air pollution problems. Despite

light wind conditions, especially at night and in the early morning, winter is generally a period of good air quality in the project vicinity.

The temperature and precipitation levels for the Riverside area (in proximity to the site) are shown below in Table 1. Table 1 shows that August is typically the warmest month and December is typically the coolest month. Rainfall in the project area varies considerably in both time and space. Almost all the annual rainfall comes from the fringes of mid-latitude storms from late November to early April, with summers being almost completely dry.

Table 1

Riverside Monthly Climate Data[1]

Descriptor	Month of Year											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Max. Temperature	67.2	68	71.1	75.7	80.6	86.9	93.5	94.6	90.7	82.6	71.4	67.4
Avg. Min. Temperature	42.6	44.2	46.2	49.3	53.9	57.4	61.6	62.3	59.3	53.4	45.1	42.1
Avg. Total Precipitation (in.)	2.03	2.32	1.78	0.68	0.23	0.08	0.04	0.09	0.15	0.42	0.79	1.43

[1] Source: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7473. Data taken from the Riverside Citrus Exp, CA station.

III. 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.

A. 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.

1. Nitrogen Dioxide

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.

2. Ozone

Ozone 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.

3. 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.

4. Sulfur Dioxide

Sulfur Oxide (SOx) gases (including sulfur dioxide) are formed when fuel containing sulfur, such as coal and oil is burned, and from the refining of gasoline. SOx dissolves 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.

5. Lead

Lead 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.

6. 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.

7. Volatile Organic Compounds (VOC)

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.

B. Other Pollutants of Concern

1. 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 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.

2. Asbestos

Asbestos is listed as a TAC by 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 asbestoform 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 in Santa Barbara County. Due to the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos.

C. Greenhouse Gases

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.

1. 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 in 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).

2. Carbon Dioxide

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 to 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.

3. Methane

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.

4. Nitrous Oxide

Concentrations of N_2O also began to rise at the beginning of the industrial revolution. In 1998, the global concentration was 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 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).

5. Chlorofluorocarbons

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.

6. Hydrofluorocarbons

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 HFC-134a 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.

7. Perfluorocarbons

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.

8. Sulfur Hexafluoride

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 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.

9. 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.

10. 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 emission of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO2). The larger the GWP, the more that a given gas warms the Earth compared to CO2 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 2. As shown in Table 2, the global warming potential of GHGs ranges from 1 to 22,800.

Table 2

Global Warming Potentials and Atmospheric Lifetimes[1]

Gas	Atmospheric Lifetime	Global Warming Potential[2] (100 Year Horizon)
Carbon Dioxide (CO_2)	—[3]	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

[1] Source: http://www3.epa.gov/climatechange/ghgemissions/gases.html

[2] Compared to the same quantity of CO_2 emissions.

[3] 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.

IV. AIR QUALITY MANAGEMENT

A. 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.

1. 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 entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.

The Paris Agreement builds upon the Convention and – for the first time – brings all nations into a common cause to undertake take 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.

2. 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 3.

The EPA and the California Air Resource Board (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 4.

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 4, the Basin has been designated by the EPA as a non-attainment area for ozone (O_3) and suspended particulates (PM10 and PM2.5). Currently, the Basin is in attainment with the ambient air quality standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2).

In 2011, the Basin exceeded federal standards for either ozone or PM2.5 at one or more locations on a total of 124 days, based on the current federal standards for 8-hour ozone and 24-hour PM2.5. Despite substantial improvements in air quality over the past few decades, some air monitoring stations in the Basin still exceed the NAAQS for ozone more frequently than any other stations in the U.S. In 2011, three of the top five stations that exceeded the 8-hour ozone NAAQS were located in the Basin (Central San Bernardino Mountains, East San Bernardino Valley, and Metropolitan Riverside County).

PM2.5 in the Basin has improved significantly in recent years, with 2010 and 2011 being the cleanest years on record. In 2011, only one station in the Basin (Metropolitan Riverside County at Mira Loma) exceeded the annual PM2.5 NAAQS and the 98th percentile form of the 24-hour PM2.5 NAAQS, as well as the 3-year design values for these standards. Basin-wide, the federal PM2.5 24-hour standard level was exceeded in 2011 on 17 sampling days.

The Basin is currently in attainment for the federal standards for carbon monoxide (CO), lead, sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). While the concentration level of the new 1-hour NO_2 federal standard (100 ppb) was exceeded in the Basin at two stations (Central Los Angeles and Long Beach) on the same day in 2011, the NAAQS NO_2 design value has not been exceeded. Therefore, the Basin remains in attainment of the NO_2 NAAQS.

The EPA designated the Los Angeles County portion of the Basin as nonattainment for the revised (2008) federal lead standard (0.15 µg/m3, rolling 3-month average), due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard in the 2007-2009 period of data used.

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.

On March 19, 2015, the Whitehouse announced that President Obama will issue an Executive Order that will cut the Federal Government's greenhouse gas (GHG) emissions 40 percent over the next decade from 2008 levels -- saving taxpayers up to $18 billion in avoided energy costs -- and increase the share of electricity the Federal Government consumes from renewable sources to 30 percent. Complementing this effort, several major Federal suppliers are announcing commitments to cut their own GHG emissions. The Administration hosted a roundtable that brought some of these large Federal suppliers together to discuss the benefits of their GHG reduction targets or to make their first-ever corporate commitments to disclose emissions and set new reduction goals.

Together, the combined results of the Federal Government actions and new supplier commitments will reduce GHG emissions by 26 million metric tons by 2025 from 2008 levels, the equivalent of taking nearly 5.5 million cars off the road for a year. And to encourage continued progress across the Federal supply chain, the Administration is releasing a new scorecard to publicly track self-reported emissions disclosure and progress for all major Federal suppliers, who together represent more than $187 billion in Federal spending and account for more than 40 percent of all Federal contract dollars.

Since the Federal Government is the single largest consumer of energy in the Nation, Federal emissions reductions and progress across the supply chain will have broad impacts. The new commitments announced today support the United States' international commitment to cut net GHG emissions 26-28 percent below 2005 levels by 2025, which President Obama first announced in November 2014 as part of an historic agreement with China. Additionally, the goals build on the strong progress made by Federal agencies during the first six years of the Administration under President Obama's 2009 Executive Order on Federal Leadership on Environmental, Energy and Economic Performance, including reducing Federal GHG emissions by 17 percent — which helped Federal agencies avoid $1.8 billion in cumulative energy costs — and increasing the share of renewable energy consumption to 9 percent.[1]

3. State – California Air Resources Board

The California Air Resources Board (CARB), which is a part of the California Environmental Protection Agency, 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. It also sets fuel specifications to further reduce vehicular emissions.

[1] Source: https://www.whitehouse.gov/the-press-office/2015/03/19/fact-sheet-reducing-greenhouse-gas-emissions-federal-government-and-acro.

The South Coast Air Basin has been designated by the CARB as a nonattainment area for ozone, PM10 and PM2.5. Currently, the South Coast 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 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/m3. These standards were approved by the Office of Administrative Law in June 2003 and are now effective. On September 27, 2007 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.

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 (also known as the Pavley Bill, in reference to its author Fran Pavley) was enacted on July 22, 2002 and required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. In 2004, CARB approved the "Pavley I" regulations limiting the amount of GHGs that may be released from new passenger automobiles that are being phased in between model years 2009 through 2016. This regulation will reduce GHG emissions by 30 percent from 2002 levels by 2016. The second set of regulations "Pavley II" is currently in development and will be phased in between model years 2017 through 2025 and will reduce emissions by 45 percent by the year 2020. The Pavley II standards are being developed by

linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework.

In 2005, the CARB submitted a "waiver" request to the EPA in order to implement the GHG standards and in March of 2008, the U.S. EPA denied the request. However, in June 2009, the decision was reversed and the U.S. EPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks and sport utility vehicles. In September 2009, the Pavley I regulations were adopted by CARB.

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
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.

On December 6, 2007 CARB released the calculated Year 1990 GHG emissions of 427 million metric tons of CO_2e ($MMTCO_2e$). The 2020 target of 427 $MMTCO_2e$ requires the reduction of 169 $MMTCO_2e$, or approximately 30 percent from the State's projected 2020 business as usual emissions of 596 $MMTCO_2e$ and the reduction of 42 $MMTCO_2e$, or almost 10 percent from the 2002-2004 average GHG emissions. Under AB 32, CARB was required to adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 cap by 2020. Early measures CARB took to lower GHG emissions included requiring operators of the largest industrial facilities that emit 25,000 metric tons of CO_2 in a calendar year to submit verification of GHG emissions by

December 1, 2010. The CARB Board also approved nine discrete early action measures that include regulations affecting landfills, motor vehicle fuels, refrigerants in cars, port operations and other sources that became enforceable on or before January 1, 2010.

On December 11, 2008 the CARB Board approved a Scoping Plan, with final adoption May 11, 2009 that proposed a variety of measures including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, a market-based cap-and-trade system, and a fee regulation to fund the program. In current pending litigation, Association of Irritated Residents v. California Air Resources Board, a California State trial court found that the analysis of the alternatives identified in the AB 32 Scoping Plan Functional Equivalent Document (FED) was not sufficient for informed decision-making and public review under CEQA. In response, CARB has appealed the decision. In addition, CARB prepared the *Supplement to the AB 32 Scoping Plan Functional Equivalent Document,* June 13, 2011. On August 24, 2011 CARB recertified the complete AB 32 Scoping Plan Functional Equivalent Environmental Document revised by the Final Supplement. In December, 2011 the Final Supplement was accepted as sufficient to fulfill the trial court's March order.

While local government operations were not accounted for in achieving the 2020 emissions reduction, local land use changes are estimated to result in a reduction of 5 metric tons of CO_2e, which is approximately 3 percent of the 2020 GHG emissions reduction goal. In recognition of the critical role local governments will play in successful implementation of AB 32, CARB is recommending GHG reduction goals of 15 percent of 2010 levels by 2020 to ensure that municipal and community-wide emissions match the state's reduction target. According to the Measure Documentation Supplement to the Scoping Plan, local government actions and targets are anticipated to reduce vehicle miles by approximately 2 percent through land use planning, resulting in a potential GHG reduction of 2 metric tons of CO_2e (or approximately 1.2 percent of the GHG reduction target).

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.

On January 20, 2017, CARB announced its release of a proposed plan to reduce greenhouse gas emissions by 40 percent below 1990 levels by 2030 – the most ambitious target in North America. The plan builds on the state's successful efforts to reduce emissions and outlines the most effective ways to reach the 2030 goal, including continuing California's Cap-and-Trade Program. The Final

2017 Scoping Plan Update will be released in late March and be considered for approval by the Board in late April.

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 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 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 Resource Agency, to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, by July 1, 2009. The 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 are provided and no specific mitigation measures are 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 Bills 1078, 107, and X1-2 and Executive Orders S-14-08 and S-21-09
Senate Bill 1078 (SB 1078) 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) changed the target date to 2010. Executive Order S-14-08 was signed on November 2008 and expands the State's Renewable Energy Standard to 33 percent renewable energy by 2020. Executive Order S-21-09 directed 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). 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), 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 13 percent below 2005 per capita GHG emissions levels by 2035. On April 4, 2012, SCAG adopted the 2012-2035 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS), which meets the CARB emission reduction requirements. The Housing Element Update is required by the State to be completed within 18 months after RTP/SCS adoption or by October 2013.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS or APS. However, new provisions of CEQA would incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS or APS and categorized as "transit priority projects."

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, 341 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 (75 percent by 2020 per AB 341). 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. 2013 Standards have been approved and are effective July 1, 2014.

All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards. The 2013 commercial standards are estimated to be 30 percent more efficient than the 2008 standards; 2013 residential standards are at least 25 percent more efficient. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases greenhouse gas emissions.

California Green Building Standards
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 Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings. CCR Title 24, Part 11: California Green Building Standards (Title 24) became effective in 2001 in response to continued efforts to reduce GHG emissions associated with energy consumption. CCR Title 24, Part 11 now 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. One focus of CCR Title 24, Part 11 is water conservation measures, which reduce GHG emissions by reducing electrical

consumption associated with pumping and treating water. CCR Title 24, Part 11 has approximately 52 nonresidential mandatory measures and an additional 130 provisions for optional use. Some key mandatory measures for commercial occupancies include specified parking for clean air vehicles, a 20 percent reduction of potable water use within buildings, a 50 percent construction waste diversion from landfills, use of building finish materials that emit low levels of volatile organic compounds, and commissioning for new, nonresidential buildings over 10,000 square feet.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

Executive Order B-30-15
Executive Order B-30-15, establishing a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030, was signed by Governor Brown in April 2015.

Executive Order B-29-15
Executive Order B-29-15, mandates a statewide 25% reduction in potable water usage. EO B-29-15 signed into law on April 1, 2015.

Executive Order B-37-16
Executive Order B-29-15, 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.

4. Regional

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. 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.

A revised draft of the 2012 AQMP was released on September, 2012, and was adopted by the SCAQMD Board on December 7, 2012. The 2012 AQMP is now awaiting approval from CARB and the U.S. EPA. The 2012 AQMP is being prepared in order to meet the federal Clean Air Act requirement that all 24-hour PM2.5 non-attainment areas prepare a SIP, which was required to be submitted to the U.S. EPA by December 14, 2012 and demonstrate attainment with the 24-hour PM2.5 standard by 2014. The 2012 AQMP demonstrates attainment of the federal 24-hour PM2.5 standard by 2014 in the Basin through adoption of all feasible measures, and therefore, no extension of the attainment date is needed.

The 2007 AQMP demonstrated attainment with the 1997 8-hour ozone (80 ppb) standard by 2023, through implementation of future improvements in control techniques and technologies. These "black box" emissions reductions represent 65 percent of the remaining NOx emission reductions by 2023 in order to show attainment with the 1997 8-hour ozone NAAQS. Given the magnitude of these needed emissions reductions, additional NOx control measures have been provided in this AQMP even though the primary purpose of this AQMP is to show compliance with 24-hour PM2.5 emissions standards.

The 2012 AQMP is designed to satisfy the California Clean Air Act's (CCAA) emission reductions of 5 percent per year or adoption of all feasible measures requirements and fulfill the EPA's requirement to update transportation conformity emissions budgets based on the latest approved motor vehicle emissions model and planning assumptions. The 2012 AQMP updates and revises the previous 2007 AQMP. The 2012 AQMP was prepared to comply with the Federal and State CCAA and amendments, to accommodate growth, to reduce the high pollutant levels in the Basin, to meet Federal and State ambient air quality standards, and to minimize the fiscal impact that pollution control measures have on the local economy. The purpose of the 2012 AQMP for the Basin is to set forth a comprehensive program that will lead this area into compliance with all federal and state air-quality planning requirements.

The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the need to engage in interagency coordinated planning of mobile sources to meet all of the federal criteria pollutant standards. Compared with the 2007 AQMP, the 2012 AQMP utilizes revised emissions inventory projections that use 2008 as the base year. On-road emissions are calculated using CARB EMFAC2011 emission factors and the transportation activity data provided by SCAG from their 2012 Regional Transportation Plan (2012 RTP). Off-road emissions were updated using CARB's 2011 In-Use Off-Road Fleet Inventory Model. Since the 2007 AQMP was finalized new area source categories such as LPG transmission losses, storage tank

and pipeline cleaning and degassing, and architectural colorants, were created and included in the emissions inventories. The 2012 AQMP also includes analysis of several additional sources of GHG emissions such as landfills and could also assist in reaching the GHG target goals in the AB32 Scoping Plan.

The control measures in the 2012 AQMP consist of three components: 1) Basin-wide and episodic short-term PM2.5 measures; 2) Section 182(e)(5) implementation measures; and 3) Transportation control measures. Many of the control measures are not based on command and control regulations, but instead focus on incentives, outreach, and education to bring about emissions reductions through voluntary participation and behavioral changes. More broadly, a transition to zero- and near-zero emission technologies is necessary to meet 2023 and 2032 air quality standards and 2050 climate goals. Many of the same technologies will address both air quality and climate needs.

During construction and operation, the project must comply with applicable rules and regulations. The following are rules the project may be required to comply with, either directly, or indirectly:

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 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 South Coast 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 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.

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 Working Group

Since neither 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 thresholds of 10,000 MTCO2e for industrial uses.

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.

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.

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.

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 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. The SCAQMD intends that by providing this guidance, the

air quality impacts of plans and development proposals will be analyzed accurately and consistently throughout the South Coast Air Basin, and adverse impacts will be minimized.

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.

5. Local – City of Moreno Valley

Local jurisdictions, such as the City of Moreno Valley, 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 2007 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 City 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.

In accordance with the CEQA requirements, the City does not, however, have the expertise to develop plans, programs, procedures, and methodologies to ensure that air quality within the City and region will meet federal and state standards. Instead, the County relies on the expertise of the SCAQMD and utilizes the SCAQMD CEQA Handbook as the guidance document for the environmental review of plans and development proposals within its jurisdiction.

The City of Moreno Valley General Plan contains the following air quality-related objectives and policies that are applicable to the proposed project:

Objective 6.6
Promote land use patterns that reduce daily automotive trips and reduce trip distance for work, shopping, school, and recreation.

Policies

6.6.1 Provide sites for new neighborhood commercial facilities within close proximity to the residential areas they serve.

6.6.2 Provide multi-family residential development sites in close proximity to neighborhood commercial centers in order to encourage pedestrian instead of vehicular travel.

6.6.3 Locate neighborhood parks in close proximity to the appropriate concentration of residents in order to encourage pedestrian and bicycle travel to local recreation areas.

Objective 6.7

Reduce mobile and stationary source air pollutant emissions.

Policies

6.7.1 Cooperate with regional efforts to establish and implement regional air quality strategies and tactics.

6.7.5 Require grading activities to comply with SCAQMD's Rule 403 regarding the control of fugitive dust.

6.7.6 Require building construction to comply with the energy conservation requirements of Title 24 of the California Administrative Code.

B. 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 Revised Draft 2012 Air Quality Management Plan, prepared by SCAQMD, September 2012, indicate that collectively, mobile sources account for 59 percent of the VOC, 88 percent of the NOx emissions and 40 percent of directly emitted PM2.5, with another 10 percent of PM2.5 from road dust.

The SCAQMD has divided the South Coast Air Basin into 38 air-monitoring areas with a designated ambient air monitoring station representative of each area. The project site is located in the Perris Valley Air Monitoring Area (Area 24), which is located in the western portion of Riverside County and covers the Perris and Moreno Valley areas to the San Bernardino County Line. Data was taken from the Perris and Riverside-Rubidoux Monitoring Stations, the two nearest monitoring station to the project site. The Perris Station is located approximately 8.31 miles southwest of the project site at 237 N. D Street, Perris. The Riverside-Rubidoux Station is located approximately 15.57 miles northwest of the project site at 5888 Mission Boulevard, Rubidoux. Table 5 presents the monitored pollutant levels from these Monitoring Stations. Ozone and PM10 were measured at the Perris Station and CO, NO_2, and PM2.5 were measured at the Riverside-Rubidoux Station.

Table 5 summarizes 2013 through 2015 published monitoring data from the air monitoring stations, 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 and PM2.5) standards. However, it should be noted that due to the air monitoring station

distance from the project site, recorded air pollution levels at the air monitoring station reflect with varying degrees of accuracy, local air quality conditions at the project site.

Ozone

During the 2013 to 2015 monitoring period, the State 1-hour concentration standard for ozone has been exceeded between 16 and 25 days each year at the Perris Station. The State 8-hour ozone standard has been exceeded between 50 and 63 days each year over the past three years at the Perris Station. The Federal 8-hour ozone standard was exceeded between 31 and 38 days each year over the past three years at the Perris 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. There was insufficient data from the Riverside-Rubidoux Station for the state or federal 8-hour CO standards for the last three years.

Nitrogen Dioxide

The Riverside-Rubidoux Station did not record an exceedance of the State or Federal NO_2 standards for the last three years.

Particulate Matter

The State 24-hour concentration standards for PM10 have been estimated to have been exceeded between 4 and 7 days each year over the past three years at the Perris Station. Over the past three years the Federal 24-hour standards for PM10 has only been exceeded one day in 2015 at the Perris Station.

The Federal 24 hour standard for PM2.5 has been estimated to have been exceeded between 5 and 9 days each year over the past three years at the Riverside-Rubidoux Station. There does not appear to be a noticeable trend for PM10 or PM2.5 in either maximum particulate concentrations or days of exceedances in the area. Particulate levels in the area are due to natural sources, grading operations, and motor vehicles.

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 3

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) Pulmonary function decrements 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; (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; (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; (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/24-hour	(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.

[1] Source: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf .

Table 4

South Coast Air Basin Attainment Status

Pollutant	State Status[1]	National Status[2]
Ozone	Nonattainment	Nonattainment (Extreme)
Carbon monoxide	Attainment	Attainment/Unclassified
Nitrogen dioxide	Attainment	Attainment/Unclassified
Sulfur dioxide	Attainment	Attainment/Unclassified
PM10	Nonattainment	Attainment (Maintenance)
PM2.5	Nonattainment	Nonattainment (Moderate)

[1] Source of State status: California Air Resources Board 2015.

[2] Source of National status: http://www3.epa.gov/airquality/greenbk/index.html and CARB 2015.

Table 5

Local Area Air Quality Monitoring Summary[1]

Pollutant (Standard)[2]	Year		
	2013	2014	2015
Ozone:[3]			
Maximum 1-Hour Concentration (ppm)	0.108	0.117	0.124
Days > CAAQS (0.09 ppm)	**17**	**16**	**25**
Maximum 8-Hour Concentration (ppm)	0.090	0.094	0.0102
Days > NAAQS (0.08 ppm)	**34**	**38**	**31**
Days > CAAQS (0.070 ppm)	**60**	**63**	**50**
Carbon Monoxide:[4]			
Maximum 8-Hour Concentration (ppm)	*	*	*
Days > NAAQS (9 ppm)	0	0	0
Nitrogen Dioxide:[4]			
Maximum 1-Hour Concentration (ppm)	0.0596	0.0599	0.0574
Days > NAAQS (0.25 ppm)	0	0	0
Inhalable Particulates (PM10):[3]			
Maximum 24-Hour Concentration (ug/m^3)	70.0	87	188
Days > NAAQS (150 ug/m^3)	0	0	**1**
Days > CAAQS (50 ug/m^3)	**7**	**6**	**4**
Ultra-Fine Particulates (PM2.5):[4]			
Maximum 24-Hour Concentration (pg/m^3)	170.8	50.6	61.1
Days > NAAQS (35 ug/m^3)	**6**	**5**	**9**

[1] Source: http://www.arb.ca.gov/adam/topfour/topfour1.php

[2] CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppm = parts per million

[3] Data Obtained from the Perris Monitoring Station

[3] Data obtained from the Riverside-Rubidoux Monitoring Station.

* http://www.arb.ca.gov/adam/ - insufficient (OR no) data available to determine the value

V. AIR QUALITY STANDARDS

A. 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 6.

B. 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 Significant Thresholds (LSTs) to assess the project-related air emissions in the project vicinity. The SCAQMD has also provided Final Localized Significant Threshold Methodology (LST Methodology), June 2003, which details the methodology to analyze local air emission impacts. The Localized Significant 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 5 above, from the most restrictive ambient air quality standards for these pollutants that are outlined in the Localized Significant Thresholds. Table 6 shows the ambient air quality standards for NO_2, CO, and PM10 and PM2.5.

C. Toxic Air Contaminants

Construction

The construction equipment would emit DPM, which is a carcinogen. However, the DPM emissions are short-term in nature. Determination of risk from DPM is considered over a 30-year exposure period because carcinogenic risk is directly related to sustain exposure. In contrast, construction activities for the project are only expected to last approximately nine months. Thus, the duration of construction activities would represent only a small fraction of the 30-year exposure period used as the basis for assessing the significance of carcinogenic risk exposure and, therefore, would not represent a source of sustained DPM

emissions. Therefore, considering the short time frame, exposure to DPM is anticipated to be less than significant.

Operation

The project consists of 424 multi-family attached residential dwelling units and will not be a source of toxic air contaminants. Sensitive receptors would not be exposed to toxic sources of air pollution.

D. 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.

E. Greenhouse Gases

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[2].

The project is within 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:

[2] 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.

- 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 MTCO2e per year would be less than significant; however, the ARB has not approved those thresholds and has not published anything since then. The Bay Area Air Quality Management District and the San Joaquin Valley Air Pollution Control District have both developed greenhouse gas thresholds. However, those thresholds are not applicable to the project since the project is under the jurisdiction of the SCAQMD. 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 MTCO2e per year

- Based on land use type: residential: 3,500 MTCO2e per year; commercial: 1,400 MTCO2e per year; or mixed use: 3,000 MTCO2e 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 MTCO2e/SP/year for projects and 6.6 MTCO2e/SP/year for plans;
  - Option 3, 2035 target: 3.0 MTCO2e/SP/year for projects and 4.1 MTCO2e/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.

To determine whether the project's GHG emissions are significant, this analysis initially uses the SCAQMD draft local agency tier 3 threshold of 3,000 $MTCO_2e$ per year for all land use types and then the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year.

The City of Moreno Valley has adopted the City of Moreno Valley Energy Efficiency and Climate Action Strategy, on October 9, 2012, which along with the City of Moreno Valley Greenhouse Gas Analysis, prepared February 2012, detail potential programs and policies to reduce overall City energy consumption and increase the use of renewable energy. The Greenhouse Gas Analysis develops a target of a 15 percent decrease in GHG emissions over 2007 levels by 2020. The Greenhouse Gas Analysis has been prepared to assist the City in conforming to the GHG emissions reductions as mandated under AB 32. Consistent with the CARB Scoping Plan, the City of Moreno Valley has chosen a reduction target of 15 percent below 2007 GHG emissions levels by 2020.

The reduction policies in the Energy Efficiency and Climate Action Strategy include:

R2-T1: Land Use Based Trips and VMT Reduction Policies. Encourage the development of Transit Priority Projects along High Quality Transit Corridors identified in the SCAG Sustainable Communities Plan, to allow a reduction in vehicle miles traveled.

R2-T3: Employment-Based Trip Reductions. Require a Transportation Demand Management (TDM) program for new development to reduce automobile travel by encouraging ride-sharing, carpooling, and alternative modes of transportation.

R2-E1: New Construction Residential Energy Efficiency Requirements. Require energy efficient design for all new residential buildings to be 10% beyond the current Title 24 standards.

R2-E2: New Construction Residential Renewable Energy. Facilitate the use of renewable energy (such as solar [photovoltaic] panels or small wind turbines) for new residential developments. Alternative approach would be the purchase of renewable energy resources off-site.

R2-E5: New Construction Commercial Energy Efficiency Requirements. Require energy efficient design for all new commercial buildings to be 10% beyond the current Title 24 standards. (Reach Code).

R3-E1: Energy Efficient Development, and Renewable Energy Deployment Facilitation and Streamlining. Updating of codes and zoning requirements and guidelines to further implement green building practices. This could include incentives for energy efficient projects.

R3-L2: Heat Island Plan. Develop measures that address "heat islands." Potential measures include using strategically placed shade trees, using paving materials with a Solar Reflective Index of at least 29, an open grid pavement system, or covered parking.

R2-W1: Water Use Reduction Initiative. Consider adopting a per capita water use reduction goal which mandates the reduction of water use of 20 percent per capita with requirements applicable to new development and with cooperative support of the water agencies.

R3-W1: Water Efficiency Training and Education. Work with EMWD and local water companies to implement a public information and education program that promotes water conservation.

R2-S1: City Diversion Program. This measure sets a target for the City to increase the waste diverted from landfills to 75% by 2020.

With regards to reducing GHG emissions, the City has identified the following achievement goals within the Greenhouse Gas Analysis:

- Provide a list of specific measures that will reduce GHG emissions from community sources and municipal operations.
- Reduce emissions attributable to Moreno Valley to levels at or below 1990 GHG emissions by year 2020 consistent with the target reductions of AB 32.

Table 6

SCAQMD Air Quality Significance Thresholds[1]

Mass Daily Thresholds		
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, Odor and GHG Thresholds	
TACs	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 SCAQMD Rule 402
GHG	10,000 MT/yr CO2e for industrial uses

Ambient Air Quality Standards	
Pollutant	SCAQMD Standards
NO2 -1-hour average	0.18 ppm (338 µg/m^3)
PM10 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 ug/m^3
PM2.5 -24-hour average Construction Operations	 10.4 µg/m^3 2.5 µg/m^3
SO2 1-hour average 24-hour average	 0.25 ppm 0.04 ppm
CO 1-hour average 8-hour average	 20 ppm (23,000 µg/m^3) 9 ppm (10,000 µg/m^3)
Lead 30-day average Rolling 3-month average Quarterly average	 1.5 µg/m^3 0.15 µg/m^3 1.5 µg/m^3

[1] Source: http://www.aqmd.gov/ceqa/handbook/signthres.pdf

VI. SHORT-TERM CONSTRUCTION IMPACTS

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. The construction activities for the proposed project are anticipated to include: grading of approximately 19 acres, construction of 424 multi-family attached residential dwelling units and an approximately 8,000 square foot clubhouse with pool, paving of approximately 491 parking spaces and approximately 10 percent of the site (1.9 acres) as on-site roadways, landscaping of approximately 1.34 acres,, and application of architectural coatings. The proposed project is expected to be constructed in two phases with Phase 1 beginning construction July 2017 and being completed July 2018 and Phase 2 beginning construction July 2018 and being completed July 2019. To be conservative, the proposed project was modeled as one phase starting July 2017 and being completed July 2018, with the project being operational in 2018.

A. Construction-Related Regional Impacts

The construction-related regional air quality impacts have been analyzed for both criteria pollutants and GHGs.

1. Construction-Related Criteria Pollutants Analysis

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.

Methodology

Typical emission rates from construction activities were obtained from CalEEMod Version 2016.3.1 CalEEMod is a computer model published by the SCAQMD for estimating air pollutant emissions. The CalEEMod program uses the EMFAC2014 computer program to calculate the emission rates specific for the eastern portion of Riverside County for construction-related employee vehicle trips and the OFFROAD2014 computer program to calculate emission rates for heavy truck operations. EMFAC2014 and OFFROAD2014 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. Using CalEEMod, the peak daily air pollutant emissions during each phase was calculated and presented below. These emissions represent the highest level of emissions for each of the construction phases in terms of air pollutant emissions. The daily construction emissions printouts from CalEEMod are provided in Appendix B.

SCAQMD's Rule 403

The Project will be required to comply with existing SCAQMD rules for the reduction of fugitive dust emissions. SCAQMD Rule 403 establishes these procedures. Compliance with this rule 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, projects that disturb 50 acres or more of soil or move 5,000 cubic yards of materials per day are required to submit a Fugitive Dust Control Plan or a Large Operation Notification Form to SCAQMD. The total project area is approximately 19 acres. Therefore, a Fugitive Dust Control Plan or Large Operation Notification would not be required.

SCAQMD's Rule 403 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 Rule 403 would require the use of water trucks during all phases where earth moving operations would occur.

The phases of the construction activities which have been analyzed below for each phase are: 1) grading, 2) building construction, 3) paving, and 4) application of architectural coatings. 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.

Architectural Coating
Per SCAQMD Rule 1113 as amended on June 3, 2011, the architectural coatings that would be applied to buildings after January 1, 2014 will be limited to an average of 50 grams per liter or less.

Project Impacts
The construction-related criteria pollutant emissions for each phase are shown below in Table 7. Table 7 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.

B. 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 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.

1. 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 in its project design features or its mitigation measures 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 shows the equipment used for this analysis.

As shown in Table 8, the maximum number of acres disturbed in a day would be five 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 Perris Valley source receptor area (SRA) 24 and a disturbance value of five acres per day. 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 detached residential dwelling units located directly adjacent to the north, east, and south of the site; therefore, the SCAQMD Look-up Tables for 25 meters was used. Table 9 details the on-site emissions from the CalEEMod model for the different construction phases and the calculated emissions thresholds.

The data provided in Table 9 shows that none of the analyzed criteria pollutants would exceed the calculated 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.

2. 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 SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of "individual cancer risk". "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of toxic air contaminants over a 30-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. Given the relatively limited number of heavy-duty construction equipment and the short-term construction schedule, the proposed project would not result in a long-term (i.e., 30

years) substantial source of toxic air contaminant emissions and corresponding individual cancer risk. Furthermore, construction-based particulate matter (PM) emissions (including diesel exhaust emissions) do not exceed any local or regional thresholds. Therefore, no significant short-term toxic air contaminant impacts would occur during construction of the proposed project.

3. Construction-Related Odor Impacts

Potential sources that may emit odors during construction activities include the application of materials such as asphalt pavement and diesel exhaust emissions. The objectionable odors that may be produced during the construction process are of 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 7

Construction-Related Regional Pollutant Emissions[1]

Activity	Pollutant Emissions (pounds/day)					
	ROG	NOx	CO	SO_2	PM10	PM2.5
Grading						
On-Site[2]	5.75	67.94	38.78	0.06	5.68	4.15
Off-Site[3]	0.13	0.09	1.12	0.00	0.23	0.06
Total	**5.88**	**68.03**	**39.91**	**0.06**	**5.91**	**4.21**
Building Construction						
On-Site	3.11	26.55	18.18	0.03	1.79	1.68
Off-Site	3.15	13.36	25.69	0.07	5.36	1.53
Total	**6.27**	**39.91**	**43.87**	**0.10**	**7.14**	**3.21**
Paving						
On-Site	2.75	17.52	14.80	0.02	0.96	0.88
Off-Site	0.09	0.06	0.74	0.00	0.17	0.05
Total	**2.84**	**17.58**	**15.54**	**0.02**	**1.12**	**0.93**
Architectural Coating						
On-Site	62.48	2.01	1.85	0.00	0.15	0.15
Off-Site	0.50	0.33	4.11	0.01	0.93	0.25
Total	**62.98**	**2.34**	**5.96**	**0.01**	**1.08**	**0.40**
Total for overlapping phases[4]	**72.08**	**59.83**	**65.37**	**0.14**	**9.35**	**4.54**
SCAQMD Thresholds	**75**	**100**	**550**	**150**	**150**	**55**
Exceeds Thresholds	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] On-site emissions from equipment operated on-site that is not operated on public roads.

[3] Off-site emissions from equipment operated on public roads.

[4] Construction, paving and painting phases may overlap.

Table 8

Maximum Number of Acres Disturbed Per Day[1]

Activity	Equipment	Number	Acres/8hr-day	Total Acres
Grading	Graders	1	0.5	0.5
	Scrapers	2	1	2
	Rubber Tired Dozers	1	0.5	0.5
	Excavators	2	0.5	1
	Tractors/Loaders/Backhoes	2	0.5	1
Total per phase		-	-	**5**

[1] Source: South Coast AQMD, Fact Sheet for Applying CalEEMod to Localized Significance Thresholds, 2011b.

Table 9

Local Construction Emissions at Nearest Sensitive Receptors[1]

Phase	On-Site Pollutant Emissions (pounds/day)			
	NOx	CO	PM10	PM2.5
Grading	67.94	38.78	5.68	4.15
Building Construction	26.55	18.18	1.79	1.68
Paving	17.52	14.80	0.96	0.88
Architectural Coating	2.01	1.85	0.15	0.15
SCAQMD Threshold for 25 meters (82 feet) or less[2]	**270**	**1,577**	**13**	**8**
Exceeds Threshold?	No	No	No	No

[1] Source: Calculated from CalEEMod and SCAQMD's Mass Rate Look-up Tables for five acres in Perris Valley.

[2] The nearest existing sensitive receptors are located adjacent to the west side of the project site; therefore, as according to LST methodology any receptor located closer than 25 meters should be based on the 25 meter threshold, the 25 meter threshold was used.

VII. LONG-TERM AIR QUALITY OPERATIONAL IMPACTS

The on-going operation of the proposed project would result in a long-term increase in air quality emissions. This increase would mainly be due to emissions from the project-generated vehicle trips. 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.

A. Operations-Related Regional Air Quality Impacts

The potential operations-related air emissions have been analyzed below for the criteria pollutants and cumulative impacts.

1. Operations-Related Criteria Pollutant Analysis

The operations-related criteria air quality impacts created by the proposed project have been analyzed through use of the CalEEMod model. The operating emissions were based on the year 2018, 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. The vehicle trips associated with the proposed project have been analyzed by inputting the project-generated vehicular trips from the Moreno Valley Ranch Golf Course Apartments Traffic Impact Analysis (Traffic Analysis), prepared by Kunzman Associates, Inc. (2017), into the CalEEMod Model. The Traffic Analysis found that the proposed project would have a trip generation rate of 6.65 trips per dwelling unit per day. The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis.

Area Sources

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed 424 multi-family attached residential dwelling units in the CalEEMod model. In order to account for SCAQMD Rule 445, no wood burning stoves or fireplaces will be included. No other 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. The energy usage emissions was based on the on-going use of the proposed 424 multi-family attached residential dwelling units in the CalEEMod model. No changes were made to the default energy usage parameters.

Project Impacts

The worst-case summer or winter VOC, NOx, CO, SO_2, PM10, and PM2.5 emissions generated by the proposed project's long-term operations have been calculated and are summarized below in Table 10. Table 10 shows that the project's unmitigated emissions would exceed SCAQMD regional thresholds for NOx only. Therefore, a potentially significant regional air quality impact would occur from operation of the proposed project and mitigation measures are required to reduce the project's emissions.

The NOx emissions would be primarily created from motor vehicles (including trucks and passenger vehicles) that will be operated by future residents of the project. Mitigation is provided that would reduce NOx emissions (see Section X. Mitigation Measures, in this report).

The data in Table 11 shows that with mitigation, emissions from the operation of the project would no longer exceed the SCAQMD regional threshold for NOx. Therefore, with the incorporation of mitigation, a less than significant regional air quality impact would occur from the operation of the proposed project.

2. Cumulative Regional Air Quality Impacts

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. Accordingly, the cumulative analysis for the project's air quality must be generic by nature.

The project area is out of attainment for both ozone and PM10 particulate matter. Construction and operation of cumulative projects will further degrade the local air quality, as well as the air quality 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 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. With respect to long-term emissions, with mitigation, this project would create a less than significant cumulative impact.

B. 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 South Coast 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, and odor impacts.

1. 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 in above in Section V.

To determine if the proposed project could cause emission levels in excess of the CO standards discussed above in Section V, 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 Traffic Analysis showed that the project would generate a maximum of 2,966 trips. The intersection with the highest traffic volume is located at Moreno Beach Drive and Project Driveway and has a year 2040 with project morning peak hour volume of 1,239 vehicles. 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 as the intersection with the highest traffic volume falls far short of 100,000 vehicles, no CO "hot spot" modeling was performed and no significant long-term air quality impact is anticipated to local air quality with the on-going use of the proposed project.

2. Local Air Quality Impacts from On-Site Operations

The local air quality impacts from the operation of the proposed project would occur from emissions generated on-site. Sources of on-site operational emissions include architectural coatings off-gassing, landscaping equipment emissions, natural gas appliance emissions and on-site vehicular emissions. Because of the residential nature of the proposed project, the majority of the proposed project's operational emissions are from vehicles traveling on roadways away from the project site. These emissions are then spread over a vast area traversed by various mobile sources and do not result in localized air quality impacts in proximity to the project site. As such, localized operational modeling for project operations are not prepared for residential developments. Therefore, the on-going operations of the proposed project would create a less than significant operations-related impact to local air quality due to on-site emissions.

3. Operations-Related Toxic Air Contaminant Impacts

Particulate matter from diesel exhaust is the predominate toxic air contaminant (TAC) in urban areas and based on a statewide average in 2000 was estimated to represent about two-thirds of cancer risk from TACs. Some chemicals in diesel exhaust, such as benzene and formaldehyde have been listed as carcinogens by State Proposition 65 and the Federal Hazardous Air Pollutants program. Due to fact that this is a proposed residential project, a less than significant toxic air contaminant impact would occur during the on-going operations of the proposed project and no mitigation would be required.

4. Operations-Related Odor Impacts

Potential sources that may emit odors during the on-going operations of the proposed project would include odor emissions from trash storage areas. Due to the distance of the nearest receptors from the proposed trash storage areas 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 10

Unmitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	7.41	50.97	89.97	0.30	20.89	5.82
Total Emissions	**18.90**	**59.78**	**128.85**	**0.36**	**21.76**	**6.69**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	**Yes**	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.

[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.

[4] Mobile sources consist of emissions from vehicles and road dust.

Table 11

Mitigated Operational Regional Pollutant Emissions[1]

Residential Activity	Pollutant Emissions (pounds/day)					
	ROGs	NOx	CO	SO2	PM10	PM2.5
Area Sources[2]	11.24	6.74	37.97	0.04	0.70	0.70
Energy Usage[3]	0.24	2.07	0.91	0.01	0.17	0.17
Mobile Sources[4]	6.30	39.06	57.06	0.18	11.77	3.29
Total Emissions	**17.78**	**47.87**	**95.95**	**0.24**	**12.65**	**4.16**
SCAQMD Thresholds	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

[1] Source: CalEEMod Version 2016.3.1

[2] Area sources consist of emissions from consumer products, architectural coatings, hearths and landscaping equipment.

[3] Energy usage consists of emissions from generation of electricity and on-site non-hearth natural gas usage.

[4] Mobile sources consist of emissions from vehicles and road dust.

VIII. GLOBAL CLIMATE CHANGE ANALYSIS

The proposed project would result in the development and on-going use of 446 multi-family attached residential dwelling units. The proposed project is anticipated to generate GHG emissions from area sources, energy usage, mobile sources, waste disposal, water usage, and construction equipment.

A. Methodology

The CalEEMod Version 2016.3.1 was used to calculate the GHG emissions from the proposed project (see Appendix C). The project's emissions were initially compared to the tier 3 SCAQMD draft screening threshold of 3,000 metric tons CO2e per year for all land uses and then to the SCAQMD Tier 4 2020 Target Service Population Threshold value of 4.8 MTCO2e/SP/year. The service population was estimated to be 1,213 future residents (estimated population from CalEEMod).

If the project's emissions exceeded the thresholds, then the project's baseline (year 2010 as year 2007 is not available in CalEEMod) emissions would be compared to the project's year 2020 mitigated emissions (as the City of Moreno Valley has adopted the City of Moreno Valley Greenhouse Gas Analysis that requires a 15 percent reduction in GHG emissions between years 2007 and 2020). Each source of GHG emissions is described in greater detail below.

1. Area Sources

Area sources include emissions from hearths, consumer products, landscape equipment and architectural coatings. The area source emissions were based on the on-going use of the proposed 446 multi-family attached residential dwelling units in the CalEEMod model. In order to account for SCAQMD Rule 445, no wood burning stoves or fireplaces will be included.

2. Energy Usage

Energy usage includes emissions from the generation of electricity and natural gas used on-site. The energy usage emissions were based on the on-going use of the proposed 424 multi-family attached residential dwelling units in the CalEEMod model. No energy-related emissions reductions were taken.

3. 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 based on the project trip generation calculated in the Traffic Analysis of 6.65 trips per dwelling unit per day. The program then applies the emission factors for each trip which is provided by the EMFAC2014 model to determine the vehicular traffic pollutant emissions. The CalEEMod default trip lengths were used in this analysis.

4. 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. AB 939 requires that 50 percent of waste be diverted from landfills. No other changes were made to the default waste parameters.

5. 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. California Green Building Standards require an indoor water use reduction of 20 percent and water-efficient irrigation systems. No other changes were made to the default water parameters.

6. 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 detailed above in Section VI.

B. Project Greenhouse Gas Emissions

The GHG emissions have been calculated based on the parameters described above for opening year 2018. A summary of the results are shown below in Table 12 and the CalEEMod Model runs for all modeled years are provided in Appendix C. Table 12 shows that the proposed project's unmitigated emissions would generate approximately 6,454.69 metric tons of CO_2e per year, resulting in 5.32 $MTCO_2e$/SP/year. According to the thresholds of significance established above in Section V above, a cumulative global climate change impact would potentially occur if the GHG emissions created from the on-going operations would exceed the draft screening threshold of 3,000 metric tons per year of CO_2e and the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. As the proposed project would exceed both of these thresholds, mitigation is required.

The data provided in Table 13 shows that the proposed project's mitigated emissions would be 4,476.49 $MTCO_2e$ per year, resulting in 3.69 $MTCO_2e$/SP/year. As shown in Table 13, with incorporation of mitigation measures MM 1 through MM 4 (see Section X), the project's emissions meet the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. Therefore, the impacts from GHGs are considered to be less than significant with incorporation of mitigation.

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 Code is a comprehensive and uniform regulatory code for all residential, commercial and school buildings.

The California Green Building Standards Code does not prevent a local jurisdiction from adopting a more stringent code as state law provides methods for local enhancements. The Code recognizes that many jurisdictions have developed existing construction and demolition ordinances, and defers to them as the ruling guidance provided they provide a minimum 50-percent diversion requirement. The code also provides exemptions for areas not served by construction and demolition recycling infrastructure. State building code provides the minimum standard that buildings need to meet in order to be certified for occupancy. Enforcement is generally through the local building official.

The California Green Building Standards Code (code section in parentheses) requires:

- Water Efficiency and Conservation [Indoor Water Use (4.303.1)]. Fixtures and fixture fittings reducing the overall use of potable water within the building by at least 20 percent shall be provided. The 20 percent reduction shall be demonstrated by one of the following methods:
  - Prescriptive Method: Showerheads (≤ 2.0 gpm @ 80 psi); Residential Lavatory Faucets (≤ 1.5 gpm @ 60 psi); Nonresidential Lavatory Faucets (≤ .4 gpm @ 60 psi); Kitchen Faucets (≤ 1.8 gpm @ 60 psi); Toilets (≤ 1.28 gal/flush); and urinals (≤ 0.5 gal/flush).
  - Performance Method: Provide a calculation demonstrating a 20% reduction of indoor potable water using the baseline values set forth in Table 4.303.1. The calculation will be limited to the total water usage of showerheads, lavatory faucets, water closets and urinals within the dwelling.
- Water Efficiency and Conservation [Outdoor Water Use (4.304.1)]. Irrigation Controllers. Automatic irrigation system controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:
  - Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' watering needs as weather or soil conditions change.
  - Weather-based controllers without integral rain sensors or communication systems that account for rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s).
- Construction Waste Reduction of at least 50 percent (4.408.1). Recycle and/or salvage for reuse a minimum of 50 percent of the nonhazardous construction and demolition waste in accordance with either Section 4.408.2, 4.408.3 or 4.408.4; OR meet a more stringent local construction and demolition waste management ordinance. Documentation is required per Section 4.408.5. Exceptions:
  - Excavated soil and land-clearing debris.
  - Alternate waste reduction methods developed by working with local enforcing agencies if diversion or recycle facilities capable of compliance with this item do not exist or are not located reasonably close to the jobsite.
  - The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.
- Materials pollution control (4.504.1 – 4.504.6). Low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring and particleboard.

- Installer and Special Inspector Qualifications (702.1-702.2). Mandatory special installer inspector qualifications for installation and inspection of energy systems (e.g., heat furnace, air conditioner, mechanical equipment).

Compliance with County Performance Standards, 2013 Title 24 Standards and Green Building Standards will further reduce project-related greenhouse emissions.

C. Greenhouse Gas Plan Consistency

The proposed project would 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. The applicable plans for the proposed project are the City of Moreno Valley Greenhouse Gas Analysis, adopted February 2012 and the City of Moreno Valley Energy Efficiency and Climate Action Strategy, adopted October 2012. The City of Moreno Valley has adopted these plans in order to assist the City in conforming to the GHG emissions reductions as mandated under AB 32.

As stated previously, the SCAQMD's screening 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 will be 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; which is also the goal of the City of Moreno Valley Greenhouse Gas Analysis.

At a mitigated level of 3.69 MTCO2e/SP/year, the project's GHG emissions fall well below the SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects. Furthermore, the project will comply with applicable Green Building Standards and City of Moreno Valley's policies regarding sustainability (as dictated by the City's General Plan and Greenhouse Gas Analysis), further analysis is not warranted.

Table 12

Unmitigated Project-Related Greenhouse Gas Emissions[1]

Residential Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	98.79	98.79	0.01	0.00	99.51
Energy Usage[3]	0.00	1,183.80	1,183.80	0.04	0.01	1,189.07
Mobile Sources[4]	0.00	4,802.49	4,802.49	0.27	0.00	4,809.25
Solid Waste[5]	48.85	0.00	48.85	2.89	0.00	121.02
Water[6]	8.91	179.25	188.17	0.92	0.02	218.14
Construction[7]	0.00	17.64	17.64	0.00	0.00	17.70
Total Emissions	57.76	6,281.98	6,339.74	4.13	0.04	**6,454.69**
SCAQMD Screening Threshold						**3,000**
Exceeds Threshold?						**Yes**
SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects						**5.32**
Exceeds Threshold?						**Yes**

[1] Source: CalEEMod Version 2016.3.1 Year 2018 emissions (opening year).

[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

[3] Energy usage consist of GHG emissions from electricity and natural gas usage.

[4] Mobile sources consist of GHG emissions from vehicles.

[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

[7] Construction GHG emissions CO2e based on a 30 year amortization rate.

Table 13

Mitigated Project-Related Greenhouse Gas Emissions[1]

Residential Category	Greenhouse Gas Emissions (Metric Tons/Year)					
	Bio-CO2	NonBio-CO_2	CO_2	CH_4	N_2O	CO_2e
Area Sources[2]	0.00	98.79	98.79	0.01	0.00	99.51
Energy Usage[3]	0.00	1,169.46	1,169.46	0.04	0.01	1,174.68
Mobile Sources[4]	0.00	2,931.71	2,931.71	0.21	0.00	2,936.99
Solid Waste[5]	24.42	0.00	24.42	1.44	0.00	60.51
Water[6]	7.13	155.94	163.07	0.74	0.02	187.09
Construction[7]	0.00	17.64	17.64	0.00	0.00	17.70
Total Emissions	31.56	4,373.54	4,405.09	2.44	0.03	**4,476.49**
SCAQMD Screening Threshold						**3,000**
Exceeds Threshold?						**Yes**
SCAQMD Tier 4 2020 Target Service Population Threshold of 4.8 MTCO2e/SP/year for projects						**3.69**
Exceeds Threshold?						**No**

[1] Source: CalEEMod Version 2016.3.1 Year 2018 emissions (opening year).

[2] Area sources consist of GHG emissions from consumer products, architectural coatings, and landscape equipment.

[3] Energy usage consist of GHG emissions from electricity and natural gas usage.

[4] Mobile sources consist of GHG emissions from vehicles.

[5] Solid waste includes the CO_2 and CH_4 emissions created from the solid waste placed in landfills.

[6] Water includes GHG emissions from electricity used for transport of water and processing of wastewater.

[7] Construction GHG emissions CO2e based on a 30 year amortization rate.

IX. 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.

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 2010 or increments based on the year of project buildout and phase.

Both of these criteria are evaluated in the following sections.

A. Criterion 1 - Increase in the Frequency or Severity of Violations

Based on the air quality modeling analysis contained in this Air Analysis, the 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, with incorporation of mitigation, long-term operations impacts will not result in significant impacts based on the SCAQMD regional and local thresholds of significance.

Therefore, the proposed project is not anticipated to contribute to the exceedance of any air pollutant concentration standards and is found to be consistent with the AQMP for the first criterion.

B. Criterion 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 insure that the analyses conducted for the proposed project are based on the same

forecasts as the AQMP. The Regional Comprehensive Plan and Guide (RCP&G) consists of three sections: Core Chapters, Ancillary Chapters, and Bridge Chapters. The Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management chapters constitute the Core Chapters of the document. 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 Moreno Valley General Plan defines the assumptions that are represented in the AQMP.

The project site is currently designated as Residential in the City of Moreno Valley General Plan. The proposed project is a residential project and is consistent with the current land use designation. Therefore, the proposed project would not result in an inconsistency with the current land use designation, 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 would not conflict with the implementation of the SCAQMD AQMP. Therefore, impacts are considered to be less than significant impact.

X. MITIGATION MEASURES

A. Construction Measures

The project is required to comply with SCAQMD Rule 403 - Fugitive Dust.

No construction mitigation is required.

B. Operational Measures

Mitigation Measure 1. The project applicant shall provide sidewalks within the project boundary.

Mitigation Measure 2. The project applicant shall require that all faucets, toilets and showers installed in the proposed structures utilize low-flow fixtures that would reduce indoor water demand by 20% per CalGreen Standards.

Mitigation Measure 3. The project applicant shall require recycling programs that reduces waste to landfills by a minimum of 50 percent (up to 75% by 2020 per AB 341).

Mitigation Measure 4. The project applicant shall require that ENERGY STAR-compliant appliances are installed in residential dwelling units on-site.

XI. REFERENCES

California Air Resources Board

2008 Resolution 08-43

2008 Airborne Toxic Control Measure for in-use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets, Section 2477 of Division 3, Chapter 9, Title 13, California Code of Regulations

2008 Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act

2008 ARB Recommended Interim Risk Management Policy for Inhalation-Based Residential Cancer Risk – Frequently Asked Questions

2008 Climate Change Scoping Plan, a framework for change.

2011 Supplement to the AB 32 Scoping Plan Functional Equivalent Document

2013 Almanac of Emissions and Air Quality. Source: https://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm

2014 First Update to the Climate Change Scoping Plan, Building on the Framework Pursuant to AB32, the California Global Warming Solutions Act of 2006. May.

2016 Historical Air Quality, Top 4 Summary

City of Moreno Valley

2006 City of Moreno Valley General Plan

2012 City of Moreno Valley Energy Efficiency and Climate Action Strategy

2012 City of Moreno Valley Greenhouse Gas Analysis

Governor's Office of Planning and Research

2008 CEQA and Climate: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review

2009 CEQA Guideline Sections to be Added or Amended

Intergovernmental Panel on Climate Change (IPCC).

2014 IPCC Fifth Assessment Report, Climate Change 2014: Synthesis Report

Kunzman Associates, Inc.

2017 Moreno Valley Ranch Golf Course Apartments Traffic Impact Analysis.

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Risk Assessment Guidelines

South Coast Air Quality Management District

1993 CEQA Air Quality Handbook

2005 Rule 403 Fugitive Dust

2007 2007 Air Quality Management Plan

2008 Final Localized Significance Threshold Methodology, Revised

2012 Revised Draft 2012 Air Quality Management Plan

2016 Draft 2016 Air Quality Management Plan

2017 Historical Data by Year. 2013, 2014, and 2015 Air Quality Data Table. Source: http://www.aqmd.gov/home/library/air-quality-data-studies/historical-data-by-year

Southern California Association of Governments

2017 Understanding Global Warming Potentials (Source: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials)

U.S. Geological Survey

2011 Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California

APPENDICES

Appendix A – Glossary of Terms

Appendix B – CalEEMod Model Daily Emissions Printouts

Appendix C – CalEEMod Model Annual Emissions Printouts

APPENDIX A

Glossary of Terms

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
ROG	Reactive organic gases
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
SF_6	Sulfur hexafluoride
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic air contaminants
VOC	Volatile organic compounds

APPENDIX B

CalEEMod Model Daily Emissions Printouts

6639b Moreno Valley Golf Course

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.34	Acre	1.34	58,370.40	0
Parking Lot	491.00	Space	6.32	196,400.00	0
Health Club	8.00	1000sqft	0.18	8,000.00	0
Apartments Mid Rise	424.00	Dwelling Unit	11.16	424,000.00	1213

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

6639b Moreno Valley Golf Course - Riverside-South Coast County, Summer

Project Characteristics - .

Land Use - Site is ~19 acres w/ 424 apartment DU, 491 parking spaces, an ~8,000 sf clubhouse, ~10% of site (1.9 acres) is onsite roadways, & remainder to be lanscaping/open space (~1.34 acres).

Construction Phase - Phase 1 - July 2017 to July 2018 & Phase 2 - July 2018 to July 2019; however, modeled as one phase July 2017-July 2018. No demo.

Grading - Site is ~19 acres and is to be balanced.

Vehicle Trips - Per TIA 6.65 trips/DU/day. Onsite clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 424 DU/19 acres = 22.3 DU/acre. Walkways provided onsite. ~ 4.33 miles from downtown Moreno Valley & ~17 feet (~0.003 miles) from RTA Route 20 stop Moreno Beach FS Championship.

Energy Mitigation - Residential land uses are to have energy-efficient appliances.

Water Mitigation - Per Green Building Standards.

Waste Mitigation - Per AB 939 all jurisdictions are required to divert at least 50% of their waste away from landfills.

6639b Moreno Valley Golf Course - Riverside-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	300.00	192.00
tblConstructionPhase	NumDays	20.00	15.00
tblFireplaces	NumberGas	360.40	381.60
tblFireplaces	NumberWood	21.20	0.00
tblGrading	AcresOfGrading	75.00	19.00
tblLandUse	LotAcreage	4.42	6.32
tblVehicleTrips	ST_TR	6.39	6.65
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	5.86	6.65
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	21.20	0.00
tblWoodstoves	NumberNoncatalytic	21.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	12.1493	107.8557	83.7736	0.1653	12.1308	5.0036	17.1343	4.8375	4.6417	9.4792	0.0000	16,720.6152	16,720.6152	2.9908	0.0000	16,795.3860
2018	62.9780	35.6746	40.2232	0.0993	5.2135	1.6186	6.8321	1.3954	1.5225	2.9179	0.0000	9,958.1032	9,958.1032	0.9936	0.0000	9,982.9428
Maximum	**62.9780**	**107.8557**	**83.7736**	**0.1653**	**12.1308**	**5.0036**	**17.1343**	**4.8375**	**4.6417**	**9.4792**	**0.0000**	**16,720.6152**	**16,720.6152**	**2.9908**	**0.0000**	**16,795.3860**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	12.1493	107.8557	83.7736	0.1653	8.0476	5.0036	13.0512	2.7740	4.6417	7.4157	0.0000	16,720.6152	16,720.6152	2.9908	0.0000	16,795.3860
2018	62.9780	35.6746	40.2232	0.0993	5.2135	1.6186	6.8321	1.3954	1.5225	2.9179	0.0000	9,958.1032	9,958.1032	0.9936	0.0000	9,982.9428
Maximum	**62.9780**	**107.8557**	**83.7736**	**0.1653**	**8.0476**	**5.0036**	**13.0512**	**2.7740**	**4.6417**	**7.4157**	**0.0000**	**16,720.6152**	**16,720.6152**	**2.9908**	**0.0000**	**16,795.3860**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	23.54	0.00	17.04	33.11	0.00	16.64	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Energy	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
Mobile	7.4118	50.5863	89.9696	0.3034	20.5533	0.3356	20.8889	5.5010	0.3175	5.8185		30,847.4956	30,847.4956	1.6448		30,888.6167
Total	**18.8956**	**59.3951**	**128.8526**	**0.3588**	**20.5533**	**1.2068**	**21.7601**	**5.5010**	**1.1887**	**6.6897**	**0.0000**	**41,627.9077**	**41,627.9077**	**1.9130**	**0.1965**	**41,734.2844**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Energy	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
Mobile	6.2993	39.0575	57.0637	0.1847	11.5710	0.2002	11.7711	3.0969	0.1893	3.2862		18,818.2749	18,818.2749	1.2641		18,849.8763
Total	**17.7831**	**47.8663**	**95.9466**	**0.2402**	**11.5710**	**1.0714**	**12.6424**	**3.0969**	**1.0605**	**4.1574**	**0.0000**	**29,598.6870**	**29,598.6870**	**1.5322**	**0.1965**	**29,695.5441**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	5.89	19.41	25.54	33.06	43.70	11.22	41.90	43.70	10.78	37.85	0.00	28.90	28.90	19.91	0.00	28.85

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2017	8/12/2017	5	30	
2	Building Construction	Building Construction	8/12/2017	5/8/2018	5	192	
3	Paving	Paving	5/9/2018	5/29/2018	5	15	
4	Architectural Coating	Architectural Coating	5/30/2018	7/31/2018	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 19

Acres of Paving: 7.66

Residential Indoor: 858,600; Residential Outdoor: 286,200; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 4,000; Striped Parking Area: 15,286 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	416.00	88.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

1 Mitigation Measures Construction

ater Exposed Area

educe Vehicle Speed on Unpaved Roads

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6937	0.0000	6.6937	3.3828	0.0000	3.3828			0.0000			0.0000
Off-Road	5.7483	67.9396	38.7826	0.0620		3.0727	3.0727		2.8269	2.8269		6,344.8863	6,344.8863	1.9441		6,393.4879
Total	**5.7483**	**67.9396**	**38.7826**	**0.0620**	**6.6937**	**3.0727**	**9.7664**	**3.3828**	**2.8269**	**6.2096**		**6,344.8863**	**6,344.8863**	**1.9441**		**6,393.4879**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1337	0.0877	1.1227	2.4300e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		241.4945	241.4945	8.1100e-003		241.6972
Total	**0.1337**	**0.0877**	**1.1227**	**2.4300e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**241.4945**	**241.4945**	**8.1100e-003**		**241.6972**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6106	0.0000	2.6106	1.3193	0.0000	1.3193			0.0000			0.0000
Off-Road	5.7483	67.9396	38.7826	0.0620		3.0727	3.0727		2.8269	2.8269	0.0000	6,344.8863	6,344.8863	1.9441		6,393.4878
Total	**5.7483**	**67.9396**	**38.7826**	**0.0620**	**2.6106**	**3.0727**	**5.6833**	**1.3193**	**2.8269**	**4.1462**	**0.0000**	**6,344.8863**	**6,344.8863**	**1.9441**		**6,393.4878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1337	0.0877	1.1227	2.4300e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		241.4945	241.4945	8.1100e-003		241.6972
Total	**0.1337**	**0.0877**	**1.1227**	**2.4300e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**241.4945**	**241.4945**	**8.1100e-003**		**241.6972**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**		**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3709	11.4506	2.3343	0.0234	0.5636	0.1118	0.6754	0.1623	0.1069	0.2692		2,460.1693	2,460.1693	0.2169		2,465.5918
Worker	2.7815	1.8233	23.3516	0.0505	4.6499	0.0298	4.6797	1.2332	0.0275	1.2607		5,023.0853	5,023.0853	0.1686		5,027.3014
Total	**3.1524**	**13.2738**	**25.6859**	**0.0739**	**5.2135**	**0.1416**	**5.3551**	**1.3955**	**0.1344**	**1.5299**		**7,483.2546**	**7,483.2546**	**0.3855**		**7,492.8932**

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**	**0.0000**	**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3709	11.4506	2.3343	0.0234	0.5636	0.1118	0.6754	0.1623	0.1069	0.2692		2,460.1693	2,460.1693	0.2169		2,465.5918
Worker	2.7815	1.8233	23.3516	0.0505	4.6499	0.0298	4.6797	1.2332	0.0275	1.2607		5,023.0853	5,023.0853	0.1686		5,027.3014
Total	**3.1524**	**13.2738**	**25.6859**	**0.0739**	**5.2135**	**0.1416**	**5.3551**	**1.3955**	**0.1344**	**1.5299**		**7,483.2546**	**7,483.2546**	**0.3855**		**7,492.8932**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3244	10.6919	2.0684	0.0233	0.5636	0.0897	0.6532	0.1623	0.0858	0.2480		2,456.3589	2,456.3589	0.2029		2,461.4306
Worker	2.5043	1.5927	20.5744	0.0491	4.6499	0.0291	4.6790	1.2332	0.0268	1.2600		4,880.8092	4,880.8092	0.1486		4,884.5239
Total	**2.8287**	**12.2846**	**22.6428**	**0.0724**	**5.2135**	**0.1187**	**5.3322**	**1.3954**	**0.1126**	**1.5080**		**7,337.1681**	**7,337.1681**	**0.3515**		**7,345.9545**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3244	10.6919	2.0684	0.0233	0.5636	0.0897	0.6532	0.1623	0.0858	0.2480		2,456.3589	2,456.3589	0.2029		2,461.4306
Worker	2.5043	1.5927	20.5744	0.0491	4.6499	0.0291	4.6790	1.2332	0.0268	1.2600		4,880.8092	4,880.8092	0.1486		4,884.5239
Total	**2.8287**	**12.2846**	**22.6428**	**0.0724**	**5.2135**	**0.1187**	**5.3322**	**1.3954**	**0.1126**	**1.5080**		**7,337.1681**	**7,337.1681**	**0.3515**		**7,345.9545**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	17.5209	14.7964	0.0228		0.9561	0.9561		0.8797	0.8797		2,294.0887	2,294.0887	0.7142		2,311.9432
Paving	1.1039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7476**	**17.5209**	**14.7964**	**0.0228**		**0.9561**	**0.9561**		**0.8797**	**0.8797**		**2,294.0887**	**2,294.0887**	**0.7142**		**2,311.9432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0903	0.0574	0.7419	1.7700e-003	0.1677	1.0500e-003	0.1687	0.0445	9.7000e-004	0.0454		175.9907	175.9907	5.3600e-003		176.1247
Total	**0.0903**	**0.0574**	**0.7419**	**1.7700e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.7000e-004**	**0.0454**		**175.9907**	**175.9907**	**5.3600e-003**		**176.1247**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	17.5209	14.7964	0.0228		0.9561	0.9561		0.8797	0.8797	0.0000	2,294.0887	2,294.0887	0.7142		2,311.9432
Paving	1.1039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7476**	**17.5209**	**14.7964**	**0.0228**		**0.9561**	**0.9561**		**0.8797**	**0.8797**	**0.0000**	**2,294.0887**	**2,294.0887**	**0.7142**		**2,311.9432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0903	0.0574	0.7419	1.7700e-003	0.1677	1.0500e-003	0.1687	0.0445	9.7000e-004	0.0454		175.9907	175.9907	5.3600e-003		176.1247
Total	**0.0903**	**0.0574**	**0.7419**	**1.7700e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.7000e-004**	**0.0454**		**175.9907**	**175.9907**	**5.3600e-003**		**176.1247**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**62.4783**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4997	0.3178	4.1050	9.7900e-003	0.9277	5.8000e-003	0.9335	0.2460	5.3400e-003	0.2514		973.8153	973.8153	0.0297		974.5565
Total	**0.4997**	**0.3178**	**4.1050**	**9.7900e-003**	**0.9277**	**5.8000e-003**	**0.9335**	**0.2460**	**5.3400e-003**	**0.2514**		**973.8153**	**973.8153**	**0.0297**		**974.5565**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**62.4783**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4997	0.3178	4.1050	9.7900e-003	0.9277	5.8000e-003	0.9335	0.2460	5.3400e-003	0.2514		973.8153	973.8153	0.0297		974.5565
Total	**0.4997**	**0.3178**	**4.1050**	**9.7900e-003**	**0.9277**	**5.8000e-003**	**0.9335**	**0.2460**	**5.3400e-003**	**0.2514**		**973.8153**	**973.8153**	**0.0297**		**974.5565**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.2993	39.0575	57.0637	0.1847	11.5710	0.2002	11.7711	3.0969	0.1893	3.2862		18,818.2749	18,818.2749	1.2641		18,849.8763
Unmitigated	7.4118	50.5863	89.9696	0.3034	20.5533	0.3356	20.8889	5.5010	0.3175	5.8185		30,847.4956	30,847.4956	1.6448		30,888.6167

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,819.60	2,819.60	2819.60	9,635,002	5,424,242
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,819.60	2,819.60	2,819.60	9,635,002	5,424,242

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Parking Lot	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Health Club	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Apartments Mid Rise	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
NaturalGas Unmitigated	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	21695.5	0.2340	1.9994	0.8508	0.0128		0.1617	0.1617		0.1617	0.1617		2,552.4171	2,552.4171	0.0489	0.0468	2,567.5849
Health Club	713.644	7.7000e-003	0.0700	0.0588	4.2000e-004		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003		83.9581	83.9581	1.6100e-003	1.5400e-003	84.4570
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2417**	**2.0694**	**0.9096**	**0.0132**		**0.1670**	**0.1670**		**0.1670**	**0.1670**		**2,636.3752**	**2,636.3752**	**0.0505**	**0.0483**	**2,652.0419**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	21.6955	0.2340	1.9994	0.8508	0.0128		0.1617	0.1617		0.1617	0.1617		2,552.4171	2,552.4171	0.0489	0.0468	2,567.5849
Health Club	0.713644	7.7000e-003	0.0700	0.0588	4.2000e-004		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003		83.9581	83.9581	1.6100e-003	1.5400e-003	84.4570
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2417**	**2.0694**	**0.9096**	**0.0132**		**0.1670**	**0.1670**		**0.1670**	**0.1670**		**2,636.3752**	**2,636.3752**	**0.0505**	**0.0483**	**2,652.0419**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Unmitigated	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.6438					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7408	6.3301	2.6937	0.0404		0.5118	0.5118		0.5118	0.5118	0.0000	8,080.9412	8,080.9412	0.1549	0.1482	8,128.9622
Landscaping	1.0909	0.4094	35.2797	1.8500e-003		0.1925	0.1925		0.1925	0.1925		63.0957	63.0957	0.0627		64.6637
Total	**11.2421**	**6.7394**	**37.9734**	**0.0423**		**0.7043**	**0.7043**		**0.7043**	**0.7043**	**0.0000**	**8,144.0369**	**8,144.0369**	**0.2176**	**0.1482**	**8,193.6259**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.6438					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7408	6.3301	2.6937	0.0404		0.5118	0.5118		0.5118	0.5118	0.0000	8,080.9412	8,080.9412	0.1549	0.1482	8,128.9622
Landscaping	1.0909	0.4094	35.2797	1.8500e-003		0.1925	0.1925		0.1925	0.1925		63.0957	63.0957	0.0627		64.6637
Total	**11.2421**	**6.7394**	**37.9734**	**0.0423**		**0.7043**	**0.7043**		**0.7043**	**0.7043**	**0.0000**	**8,144.0369**	**8,144.0369**	**0.2176**	**0.1482**	**8,193.6259**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

stitute Recycling and Composting Services

0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

6639b Moreno Valley Golf Course

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.34	Acre	1.34	58,370.40	0
Parking Lot	491.00	Space	6.32	196,400.00	0
Health Club	8.00	1000sqft	0.18	8,000.00	0
Apartments Mid Rise	424.00	Dwelling Unit	11.16	424,000.00	1213

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

6639b Moreno Valley Golf Course - Riverside-South Coast County, Winter

Project Characteristics - .

Land Use - Site is ~19 acres w/ 424 apartment DU, 491 parking spaces, an ~8,000 sf clubhouse, ~10% of site (1.9 acres) is onsite roadways, & remainder to be lanscaping/open space (~1.34 acres).

Construction Phase - Phase 1 - July 2017 to July 2018 & Phase 2 - July 2018 to July 2019; however, modeled as one phase July 2017-July 2018. No demo.

Grading - Site is ~19 acres and is to be balanced.

Vehicle Trips - Per TIA 6.65 trips/DU/day. Onsite clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 424 DU/19 acres = 22.3 DU/acre. Walkways provided onsite. ~ 4.33 miles from downtown Moreno Valley & ~17 feet (~0.003 miles) from RTA Route 20 stop Moreno Beach FS Championship.

Energy Mitigation - Residential land uses are to have energy-efficient appliances.

Water Mitigation - Per Green Building Standards.

Waste Mitigation - Per AB 939 all jurisdictions are required to divert at least 50% of their waste away from landfills.

6639b Moreno Valley Golf Course - Riverside-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	300.00	192.00
tblConstructionPhase	NumDays	20.00	15.00
tblFireplaces	NumberGas	360.40	381.60
tblFireplaces	NumberWood	21.20	0.00
tblGrading	AcresOfGrading	75.00	19.00
tblLandUse	LotAcreage	4.42	6.32
tblVehicleTrips	ST_TR	6.39	6.65
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	5.86	6.65
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	21.20	0.00
tblWoodstoves	NumberNoncatalytic	21.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	12.0941	107.9414	79.5865	0.1590	12.1308	5.0049	17.1357	4.8375	4.6430	9.4805	0.0000	16,091.1329	16,091.1329	2.9912	0.0000	16,165.9137
2018	62.9659	35.7235	36.6896	0.0934	5.2135	1.6197	6.8331	1.3954	1.5235	2.9189	0.0000	9,365.1036	9,365.1036	0.9967	0.0000	9,390.0199
Maximum	**62.9659**	**107.9414**	**79.5865**	**0.1590**	**12.1308**	**5.0049**	**17.1357**	**4.8375**	**4.6430**	**9.4805**	**0.0000**	**16,091.1329**	**16,091.1329**	**2.9912**	**0.0000**	**16,165.9137**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	12.0941	107.9414	79.5865	0.1590	8.0476	5.0049	13.0525	2.7740	4.6430	7.4170	0.0000	16,091.1329	16,091.1329	2.9912	0.0000	16,165.9137
2018	62.9659	35.7235	36.6896	0.0934	5.2135	1.6197	6.8331	1.3954	1.5235	2.9189	0.0000	9,365.1036	9,365.1036	0.9967	0.0000	9,390.0199
Maximum	**62.9659**	**107.9414**	**79.5865**	**0.1590**	**8.0476**	**5.0049**	**13.0525**	**2.7740**	**4.6430**	**7.4170**	**0.0000**	**16,091.1329**	**16,091.1329**	**2.9912**	**0.0000**	**16,165.9137**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.54**	**0.00**	**17.04**	**33.11**	**0.00**	**16.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Energy	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
Mobile	6.3327	50.9738	77.8879	0.2795	20.5533	0.3393	20.8926	5.5010	0.3210	5.8220		28,451.4593	28,451.4593	1.6762		28,493.3653
Total	**17.8165**	**59.7826**	**116.7708**	**0.3349**	**20.5533**	**1.2105**	**21.7638**	**5.5010**	**1.1923**	**6.6933**	**0.0000**	**39,231.8714**	**39,231.8714**	**1.9444**	**0.1965**	**39,339.0330**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Energy	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
Mobile	5.2959	38.8725	51.5248	0.1697	11.5710	0.2039	11.7748	3.0969	0.1928	3.2898		17,304.6025	17,304.6025	1.3266		17,337.7666
Total	**16.7797**	**47.6813**	**90.4077**	**0.2252**	**11.5710**	**1.0751**	**12.6461**	**3.0969**	**1.0641**	**4.1610**	**0.0000**	**28,085.0145**	**28,085.0145**	**1.5947**	**0.1965**	**28,183.4343**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	5.82	20.24	22.58	32.77	43.70	11.18	41.89	43.70	10.75	37.83	0.00	28.41	28.41	17.98	0.00	28.36

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2017	8/12/2017	5	30	
2	Building Construction	Building Construction	8/12/2017	5/8/2018	5	192	
3	Paving	Paving	5/9/2018	5/29/2018	5	15	
4	Architectural Coating	Architectural Coating	5/30/2018	7/31/2018	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 19

Acres of Paving: 7.66

Residential Indoor: 858,600; Residential Outdoor: 286,200; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 4,000; Striped Parking Area: 15,286 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	416.00	88.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

1 Mitigation Measures Construction

ater Exposed Area

educe Vehicle Speed on Unpaved Roads

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6937	0.0000	6.6937	3.3828	0.0000	3.3828			0.0000			0.0000
Off-Road	5.7483	67.9396	38.7826	0.0620		3.0727	3.0727		2.8269	2.8269		6,344.8863	6,344.8863	1.9441		6,393.4879
Total	**5.7483**	**67.9396**	**38.7826**	**0.0620**	**6.6937**	**3.0727**	**9.7664**	**3.3828**	**2.8269**	**6.2096**		**6,344.8863**	**6,344.8863**	**1.9441**		**6,393.4879**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1305	0.0910	0.9155	2.1800e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		216.7282	216.7282	7.1000e-003		216.9056
Total	**0.1305**	**0.0910**	**0.9155**	**2.1800e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**216.7282**	**216.7282**	**7.1000e-003**		**216.9056**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.6106	0.0000	2.6106	1.3193	0.0000	1.3193			0.0000			0.0000
Off-Road	5.7483	67.9396	38.7826	0.0620		3.0727	3.0727		2.8269	2.8269	0.0000	6,344.8863	6,344.8863	1.9441		6,393.4878
Total	**5.7483**	**67.9396**	**38.7826**	**0.0620**	**2.6106**	**3.0727**	**5.6833**	**1.3193**	**2.8269**	**4.1462**	**0.0000**	**6,344.8863**	**6,344.8863**	**1.9441**		**6,393.4878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1305	0.0910	0.9155	2.1800e-003	0.2236	1.4300e-003	0.2250	0.0593	1.3200e-003	0.0606		216.7282	216.7282	7.1000e-003		216.9056
Total	**0.1305**	**0.0910**	**0.9155**	**2.1800e-003**	**0.2236**	**1.4300e-003**	**0.2250**	**0.0593**	**1.3200e-003**	**0.0606**		**216.7282**	**216.7282**	**7.1000e-003**		**216.9056**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791		2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**		**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3870	11.4637	2.6633	0.0225	0.5636	0.1131	0.6767	0.1623	0.1082	0.2705		2,370.5918	2,370.5918	0.2394		2,376.5761
Worker	2.7135	1.8925	19.0426	0.0453	4.6499	0.0298	4.6797	1.2332	0.0275	1.2607		4,507.9469	4,507.9469	0.1476		4,511.6364
Total	**3.1004**	**13.3562**	**21.7059**	**0.0678**	**5.2135**	**0.1429**	**5.3564**	**1.3955**	**0.1357**	**1.5311**		**6,878.5386**	**6,878.5386**	**0.3870**		**6,888.2124**

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1149	26.5546	18.1825	0.0269		1.7879	1.7879		1.6791	1.6791	0.0000	2,650.9797	2,650.9797	0.6531		2,667.3078
Total	**3.1149**	**26.5546**	**18.1825**	**0.0269**		**1.7879**	**1.7879**		**1.6791**	**1.6791**	**0.0000**	**2,650.9797**	**2,650.9797**	**0.6531**		**2,667.3078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3870	11.4637	2.6633	0.0225	0.5636	0.1131	0.6767	0.1623	0.1082	0.2705		2,370.5918	2,370.5918	0.2394		2,376.5761
Worker	2.7135	1.8925	19.0426	0.0453	4.6499	0.0298	4.6797	1.2332	0.0275	1.2607		4,507.9469	4,507.9469	0.1476		4,511.6364
Total	**3.1004**	**13.3562**	**21.7059**	**0.0678**	**5.2135**	**0.1429**	**5.3564**	**1.3955**	**0.1357**	**1.5311**		**6,878.5386**	**6,878.5386**	**0.3870**		**6,888.2124**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099		2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**		**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3397	10.6831	2.3858	0.0225	0.5636	0.0907	0.6543	0.1623	0.0868	0.2491		2,364.8608	2,364.8608	0.2250		2,370.4850
Worker	2.4438	1.6504	16.7235	0.0440	4.6499	0.0291	4.6790	1.2332	0.0268	1.2600		4,379.3077	4,379.3077	0.1296		4,382.5466
Total	**2.7835**	**12.3335**	**19.1092**	**0.0664**	**5.2135**	**0.1198**	**5.3333**	**1.3954**	**0.1136**	**1.5090**		**6,744.1685**	**6,744.1685**	**0.3545**		**6,753.0316**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.6795	23.3900	17.5804	0.0269		1.4999	1.4999		1.4099	1.4099	0.0000	2,620.9351	2,620.9351	0.6421		2,636.9883
Total	**2.6795**	**23.3900**	**17.5804**	**0.0269**		**1.4999**	**1.4999**		**1.4099**	**1.4099**	**0.0000**	**2,620.9351**	**2,620.9351**	**0.6421**		**2,636.9883**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3397	10.6831	2.3858	0.0225	0.5636	0.0907	0.6543	0.1623	0.0868	0.2491		2,364.8608	2,364.8608	0.2250		2,370.4850
Worker	2.4438	1.6504	16.7235	0.0440	4.6499	0.0291	4.6790	1.2332	0.0268	1.2600		4,379.3077	4,379.3077	0.1296		4,382.5466
Total	**2.7835**	**12.3335**	**19.1092**	**0.0664**	**5.2135**	**0.1198**	**5.3333**	**1.3954**	**0.1136**	**1.5090**		**6,744.1685**	**6,744.1685**	**0.3545**		**6,753.0316**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	17.5209	14.7964	0.0228		0.9561	0.9561		0.8797	0.8797		2,294.0887	2,294.0887	0.7142		2,311.9432
Paving	1.1039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7476**	**17.5209**	**14.7964**	**0.0228**		**0.9561**	**0.9561**		**0.8797**	**0.8797**		**2,294.0887**	**2,294.0887**	**0.7142**		**2,311.9432**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0881	0.0595	0.6030	1.5900e-003	0.1677	1.0500e-003	0.1687	0.0445	9.7000e-004	0.0454		157.9077	157.9077	4.6700e-003		158.0245
Total	**0.0881**	**0.0595**	**0.6030**	**1.5900e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.7000e-004**	**0.0454**		**157.9077**	**157.9077**	**4.6700e-003**		**158.0245**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6437	17.5209	14.7964	0.0228		0.9561	0.9561		0.8797	0.8797	0.0000	2,294.0887	2,294.0887	0.7142		2,311.9432
Paving	1.1039					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.7476**	**17.5209**	**14.7964**	**0.0228**		**0.9561**	**0.9561**		**0.8797**	**0.8797**	**0.0000**	**2,294.0887**	**2,294.0887**	**0.7142**		**2,311.9432**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0881	0.0595	0.6030	1.5900e-003	0.1677	1.0500e-003	0.1687	0.0445	9.7000e-004	0.0454		157.9077	157.9077	4.6700e-003		158.0245
Total	**0.0881**	**0.0595**	**0.6030**	**1.5900e-003**	**0.1677**	**1.0500e-003**	**0.1687**	**0.0445**	**9.7000e-004**	**0.0454**		**157.9077**	**157.9077**	**4.6700e-003**		**158.0245**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506		281.4485	281.4485	0.0267		282.1171
Total	**62.4783**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**		**281.4485**	**281.4485**	**0.0267**		**282.1171**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4876	0.3293	3.3367	8.7800e-003	0.9277	5.8000e-003	0.9335	0.2460	5.3400e-003	0.2514		873.7561	873.7561	0.0259		874.4023
Total	**0.4876**	**0.3293**	**3.3367**	**8.7800e-003**	**0.9277**	**5.8000e-003**	**0.9335**	**0.2460**	**5.3400e-003**	**0.2514**		**873.7561**	**873.7561**	**0.0259**		**874.4023**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.1797					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2986	2.0058	1.8542	2.9700e-003		0.1506	0.1506		0.1506	0.1506	0.0000	281.4485	281.4485	0.0267		282.1171
Total	**62.4783**	**2.0058**	**1.8542**	**2.9700e-003**		**0.1506**	**0.1506**		**0.1506**	**0.1506**	**0.0000**	**281.4485**	**281.4485**	**0.0267**		**282.1171**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4876	0.3293	3.3367	8.7800e-003	0.9277	5.8000e-003	0.9335	0.2460	5.3400e-003	0.2514		873.7561	873.7561	0.0259		874.4023
Total	**0.4876**	**0.3293**	**3.3367**	**8.7800e-003**	**0.9277**	**5.8000e-003**	**0.9335**	**0.2460**	**5.3400e-003**	**0.2514**		**873.7561**	**873.7561**	**0.0259**		**874.4023**

0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.2959	38.8725	51.5248	0.1697	11.5710	0.2039	11.7748	3.0969	0.1928	3.2898		17,304.6025	17,304.6025	1.3266		17,337.7666
Unmitigated	6.3327	50.9738	77.8879	0.2795	20.5533	0.3393	20.8926	5.5010	0.3210	5.8220		28,451.4593	28,451.4593	1.6762		28,493.3653

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,819.60	2,819.60	2819.60	9,635,002	5,424,242
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,819.60	2,819.60	2,819.60	9,635,002	5,424,242

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Parking Lot	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Health Club	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Apartments Mid Rise	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419
NaturalGas Unmitigated	0.2417	2.0694	0.9096	0.0132		0.1670	0.1670		0.1670	0.1670		2,636.3752	2,636.3752	0.0505	0.0483	2,652.0419

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	21695.5	0.2340	1.9994	0.8508	0.0128		0.1617	0.1617		0.1617	0.1617		2,552.4171	2,552.4171	0.0489	0.0468	2,567.5849
Health Club	713.644	7.7000e-003	0.0700	0.0588	4.2000e-004		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003		83.9581	83.9581	1.6100e-003	1.5400e-003	84.4570
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2417**	**2.0694**	**0.9096**	**0.0132**		**0.1670**	**0.1670**		**0.1670**	**0.1670**		**2,636.3752**	**2,636.3752**	**0.0505**	**0.0483**	**2,652.0419**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	21.6955	0.2340	1.9994	0.8508	0.0128		0.1617	0.1617		0.1617	0.1617		2,552.4171	2,552.4171	0.0489	0.0468	2,567.5849
Health Club	0.713644	7.7000e-003	0.0700	0.0588	4.2000e-004		5.3200e-003	5.3200e-003		5.3200e-003	5.3200e-003		83.9581	83.9581	1.6100e-003	1.5400e-003	84.4570
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.2417**	**2.0694**	**0.9096**	**0.0132**		**0.1670**	**0.1670**		**0.1670**	**0.1670**		**2,636.3752**	**2,636.3752**	**0.0505**	**0.0483**	**2,652.0419**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259
Unmitigated	11.2421	6.7394	37.9734	0.0423		0.7043	0.7043		0.7043	0.7043	0.0000	8,144.0369	8,144.0369	0.2176	0.1482	8,193.6259

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.6438					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7408	6.3301	2.6937	0.0404		0.5118	0.5118		0.5118	0.5118	0.0000	8,080.9412	8,080.9412	0.1549	0.1482	8,128.9622
Landscaping	1.0909	0.4094	35.2797	1.8500e-003		0.1925	0.1925		0.1925	0.1925		63.0957	63.0957	0.0627		64.6637
Total	**11.2421**	**6.7394**	**37.9734**	**0.0423**		**0.7043**	**0.7043**		**0.7043**	**0.7043**	**0.0000**	**8,144.0369**	**8,144.0369**	**0.2176**	**0.1482**	**8,193.6259**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.7666					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	8.6438					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.7408	6.3301	2.6937	0.0404		0.5118	0.5118		0.5118	0.5118	0.0000	8,080.9412	8,080.9412	0.1549	0.1482	8,128.9622
Landscaping	1.0909	0.4094	35.2797	1.8500e-003		0.1925	0.1925		0.1925	0.1925		63.0957	63.0957	0.0627		64.6637
Total	**11.2421**	**6.7394**	**37.9734**	**0.0423**		**0.7043**	**0.7043**		**0.7043**	**0.7043**	**0.0000**	**8,144.0369**	**8,144.0369**	**0.2176**	**0.1482**	**8,193.6259**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

stitute Recycling and Composting Services

0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

CalEEMod Model Annual Emissions Printouts

6639b Moreno Valley Golf Course

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1.34	Acre	1.34	58,370.40	0
Parking Lot	491.00	Space	6.32	196,400.00	0
Health Club	8.00	1000sqft	0.18	8,000.00	0
Apartments Mid Rise	424.00	Dwelling Unit	11.16	424,000.00	1213

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - .

Land Use - Site is ~19 acres w/ 424 apartment DU, 491 parking spaces, an ~8,000 sf clubhouse, ~10% of site (1.9 acres) is onsite roadways, & remainder to be lanscaping/open space (~1.34 acres).

Construction Phase - Phase 1 - July 2017 to July 2018 & Phase 2 - July 2018 to July 2019; however, modeled as one phase July 2017-July 2018. No demo.

Grading - Site is ~19 acres and is to be balanced.

Vehicle Trips - Per TIA 6.65 trips/DU/day. Onsite clubhouse, no additional trips.

Woodstoves - SCAQMD Rule 445 prohibits the installation of wood burning devices in new developments.

Energy Use -

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation - 424 DU/19 acres = 22.3 DU/acre. Walkways provided onsite. ~ 4.33 miles from downtown Moreno Valley & ~17 feet (~0.003 miles) from RTA Route 20 stop Moreno Beach FS Championship.

Energy Mitigation - Residential land uses are to have energy-efficient appliances.

Water Mitigation - Per Green Building Standards.

Waste Mitigation - Per AB 939 all jurisdictions are required to divert at least 50% of their waste away from landfills.

6639b Moreno Valley Golf Course - Riverside-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	300.00	192.00
tblConstructionPhase	NumDays	20.00	15.00
tblFireplaces	NumberGas	360.40	381.60
tblFireplaces	NumberWood	21.20	0.00
tblGrading	AcresOfGrading	75.00	19.00
tblLandUse	LotAcreage	4.42	6.32
tblVehicleTrips	ST_TR	6.39	6.65
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	5.86	6.65
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblWoodstoves	NumberCatalytic	21.20	0.00
tblWoodstoves	NumberNoncatalytic	21.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3882	3.0284	2.6325	5.7800e-003	0.3601	0.1426	0.5027	0.1203	0.1331	0.2535	0.0000	529.2108	529.2108	0.0734	0.0000	531.0453
2018	1.6795	1.8385	1.9576	4.8200e-003	0.2577	0.0852	0.3428	0.0690	0.0802	0.1492	0.0000	438.4666	438.4666	0.0472	0.0000	439.6475
Maximum	**1.6795**	**3.0284**	**2.6325**	**5.7800e-003**	**0.3601**	**0.1426**	**0.5027**	**0.1203**	**0.1331**	**0.2535**	**0.0000**	**529.2108**	**529.2108**	**0.0734**	**0.0000**	**531.0453**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.3882	3.0284	2.6325	5.7800e-003	0.2989	0.1426	0.4415	0.0894	0.1331	0.2225	0.0000	529.2105	529.2105	0.0734	0.0000	531.0450
2018	1.6795	1.8385	1.9576	4.8200e-003	0.2577	0.0852	0.3428	0.0690	0.0802	0.1492	0.0000	438.4664	438.4664	0.0472	0.0000	439.6473
Maximum	**1.6795**	**3.0284**	**2.6325**	**5.7800e-003**	**0.2989**	**0.1426**	**0.4415**	**0.0894**	**0.1331**	**0.2225**	**0.0000**	**529.2105**	**529.2105**	**0.0734**	**0.0000**	**531.0450**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**9.91**	**0.00**	**7.24**	**16.35**	**0.00**	**7.69**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2017	9-30-2017	1.9582	1.9582
2	10-1-2017	12-31-2017	1.5156	1.5156
3	1-1-2018	3-31-2018	1.3239	1.3239
4	4-1-2018	6-30-2018	1.4583	1.4583
5	7-1-2018	9-30-2018	0.7230	0.7230
		Highest	1.9582	1.9582

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8630	0.1303	4.4436	7.4000e-004		0.0305	0.0305		0.0305	0.0305	0.0000	98.7913	98.7913	8.8700e-003	1.6800e-003	99.5136
Energy	0.0441	0.3777	0.1660	2.4100e-003		0.0305	0.0305		0.0305	0.0305	0.0000	1,183.8023	1,183.8023	0.0392	0.0144	1,189.0696
Mobile	1.1522	9.4374	14.6220	0.0520	3.6796	0.0613	3.7409	0.9862	0.0580	1.0442	0.0000	4,802.4946	4,802.4946	0.2703	0.0000	4,809.2509
Waste						0.0000	0.0000		0.0000	0.0000	48.8478	0.0000	48.8478	2.8868	0.0000	121.0182
Water						0.0000	0.0000		0.0000	0.0000	8.9143	179.2510	188.1653	0.9230	0.0232	218.1388
Total	**3.0593**	**9.9454**	**19.2317**	**0.0552**	**3.6796**	**0.1222**	**3.8018**	**0.9862**	**0.1189**	**1.1051**	**57.7621**	**6,264.3391**	**6,322.1012**	**4.1282**	**0.0392**	**6,436.9912**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.8630	0.1303	4.4436	7.4000e-004		0.0305	0.0305		0.0305	0.0305	0.0000	98.7913	98.7913	8.8700e-003	1.6800e-003	99.5136
Energy	0.0441	0.3777	0.1660	2.4100e-003		0.0305	0.0305		0.0305	0.0305	0.0000	1,169.4608	1,169.4608	0.0386	0.0143	1,174.6769
Mobile	0.9599	7.2076	9.5575	0.0317	2.0715	0.0367	2.1082	0.5552	0.0347	0.5899	0.0000	2,931.7083	2,931.7083	0.2114	0.0000	2,936.9942
Waste						0.0000	0.0000		0.0000	0.0000	24.4239	0.0000	24.4239	1.4434	0.0000	60.5091
Water						0.0000	0.0000		0.0000	0.0000	7.1315	155.9362	163.0677	0.7389	0.0186	187.0913
Total	**2.8670**	**7.7155**	**14.1671**	**0.0349**	**2.0715**	**0.0976**	**2.1691**	**0.5552**	**0.0956**	**0.6508**	**31.5553**	**4,355.8966**	**4,387.4519**	**2.4413**	**0.0346**	**4,458.7851**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.28**	**22.42**	**26.33**	**36.82**	**43.70**	**20.14**	**42.95**	**43.70**	**19.60**	**41.11**	**45.37**	**30.47**	**30.60**	**40.86**	**11.86**	**30.73**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2017	8/12/2017	5	30	
2	Building Construction	Building Construction	8/12/2017	5/8/2018	5	192	
3	Paving	Paving	5/9/2018	5/29/2018	5	15	
4	Architectural Coating	Architectural Coating	5/30/2018	7/31/2018	5	45	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 19

Acres of Paving: 7.66

Residential Indoor: 858,600; Residential Outdoor: 286,200; Non-Residential Indoor: 12,000; Non-Residential Outdoor: 4,000; Striped Parking Area: 15,286 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	416.00	88.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

1 Mitigation Measures Construction

ater Exposed Area

educe Vehicle Speed on Unpaved Roads

3.2 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1004	0.0000	0.1004	0.0507	0.0000	0.0507	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0862	1.0191	0.5817	9.3000e-004		0.0461	0.0461		0.0424	0.0424	0.0000	86.3398	86.3398	0.0265	0.0000	87.0011
Total	**0.0862**	**1.0191**	**0.5817**	**9.3000e-004**	**0.1004**	**0.0461**	**0.1465**	**0.0507**	**0.0424**	**0.0931**	**0.0000**	**86.3398**	**86.3398**	**0.0265**	**0.0000**	**87.0011**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8100e-003	1.4100e-003	0.0145	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	3.0247	3.0247	1.0000e-004	0.0000	3.0272
Total	**1.8100e-003**	**1.4100e-003**	**0.0145**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**3.0247**	**3.0247**	**1.0000e-004**	**0.0000**	**3.0272**

3.2 Grading - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0392	0.0000	0.0392	0.0198	0.0000	0.0198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0862	1.0191	0.5817	9.3000e-004		0.0461	0.0461		0.0424	0.0424	0.0000	86.3397	86.3397	0.0265	0.0000	87.0010
Total	**0.0862**	**1.0191**	**0.5817**	**9.3000e-004**	**0.0392**	**0.0461**	**0.0853**	**0.0198**	**0.0424**	**0.0622**	**0.0000**	**86.3397**	**86.3397**	**0.0265**	**0.0000**	**87.0010**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.8100e-003	1.4100e-003	0.0145	3.0000e-005	3.3000e-003	2.0000e-005	3.3200e-003	8.8000e-004	2.0000e-005	9.0000e-004	0.0000	3.0247	3.0247	1.0000e-004	0.0000	3.0272
Total	**1.8100e-003**	**1.4100e-003**	**0.0145**	**3.0000e-005**	**3.3000e-003**	**2.0000e-005**	**3.3200e-003**	**8.8000e-004**	**2.0000e-005**	**9.0000e-004**	**0.0000**	**3.0247**	**3.0247**	**1.0000e-004**	**0.0000**	**3.0272**

3.3 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1558	1.3277	0.9091	1.3500e-003		0.0894	0.0894		0.0840	0.0840	0.0000	120.2464	120.2464	0.0296	0.0000	120.9871
Total	**0.1558**	**1.3277**	**0.9091**	**1.3500e-003**		**0.0894**	**0.0894**		**0.0840**	**0.0840**	**0.0000**	**120.2464**	**120.2464**	**0.0296**	**0.0000**	**120.9871**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0188	0.5824	0.1245	1.1500e-003	0.0278	5.6200e-003	0.0334	8.0200e-003	5.3700e-003	0.0134	0.0000	109.8849	109.8849	0.0103	0.0000	110.1420
Worker	0.1256	0.0978	1.0027	2.3200e-003	0.2286	1.4900e-003	0.2301	0.0607	1.3700e-003	0.0621	0.0000	209.7150	209.7150	6.9100e-003	0.0000	209.8878
Total	**0.1444**	**0.6802**	**1.1271**	**3.4700e-003**	**0.2564**	**7.1100e-003**	**0.2635**	**0.0687**	**6.7400e-003**	**0.0755**	**0.0000**	**319.5999**	**319.5999**	**0.0172**	**0.0000**	**320.0299**

3.3 Building Construction - 2017

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1558	1.3277	0.9091	1.3500e-003		0.0894	0.0894		0.0840	0.0840	0.0000	120.2463	120.2463	0.0296	0.0000	120.9869
Total	**0.1558**	**1.3277**	**0.9091**	**1.3500e-003**		**0.0894**	**0.0894**		**0.0840**	**0.0840**	**0.0000**	**120.2463**	**120.2463**	**0.0296**	**0.0000**	**120.9869**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0188	0.5824	0.1245	1.1500e-003	0.0278	5.6200e-003	0.0334	8.0200e-003	5.3700e-003	0.0134	0.0000	109.8849	109.8849	0.0103	0.0000	110.1420
Worker	0.1256	0.0978	1.0027	2.3200e-003	0.2286	1.4900e-003	0.2301	0.0607	1.3700e-003	0.0621	0.0000	209.7150	209.7150	6.9100e-003	0.0000	209.8878
Total	**0.1444**	**0.6802**	**1.1271**	**3.4700e-003**	**0.2564**	**7.1100e-003**	**0.2635**	**0.0687**	**6.7400e-003**	**0.0755**	**0.0000**	**319.5999**	**319.5999**	**0.0172**	**0.0000**	**320.0299**

3.3 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1233	1.0759	0.8087	1.2400e-003		0.0690	0.0690		0.0649	0.0649	0.0000	109.3729	109.3729	0.0268	0.0000	110.0428
Total	**0.1233**	**1.0759**	**0.8087**	**1.2400e-003**		**0.0690**	**0.0690**		**0.0649**	**0.0649**	**0.0000**	**109.3729**	**109.3729**	**0.0268**	**0.0000**	**110.0428**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0152	0.4994	0.1020	1.0600e-003	0.0256	4.1400e-003	0.0297	7.3800e-003	3.9700e-003	0.0113	0.0000	100.9014	100.9014	8.8700e-003	0.0000	101.1231
Worker	0.1039	0.0785	0.8103	2.0800e-003	0.2103	1.3400e-003	0.2117	0.0559	1.2300e-003	0.0571	0.0000	187.4439	187.4439	5.5900e-003	0.0000	187.5836
Total	**0.1191**	**0.5779**	**0.9124**	**3.1400e-003**	**0.2359**	**5.4800e-003**	**0.2414**	**0.0632**	**5.2000e-003**	**0.0684**	**0.0000**	**288.3453**	**288.3453**	**0.0145**	**0.0000**	**288.7067**

3.3 Building Construction - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1233	1.0759	0.8087	1.2400e-003		0.0690	0.0690		0.0649	0.0649	0.0000	109.3728	109.3728	0.0268	0.0000	110.0427
Total	**0.1233**	**1.0759**	**0.8087**	**1.2400e-003**		**0.0690**	**0.0690**		**0.0649**	**0.0649**	**0.0000**	**109.3728**	**109.3728**	**0.0268**	**0.0000**	**110.0427**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0152	0.4994	0.1020	1.0600e-003	0.0256	4.1400e-003	0.0297	7.3800e-003	3.9700e-003	0.0113	0.0000	100.9014	100.9014	8.8700e-003	0.0000	101.1231
Worker	0.1039	0.0785	0.8103	2.0800e-003	0.2103	1.3400e-003	0.2117	0.0559	1.2300e-003	0.0571	0.0000	187.4439	187.4439	5.5900e-003	0.0000	187.5836
Total	**0.1191**	**0.5779**	**0.9124**	**3.1400e-003**	**0.2359**	**5.4800e-003**	**0.2414**	**0.0632**	**5.2000e-003**	**0.0684**	**0.0000**	**288.3453**	**288.3453**	**0.0145**	**0.0000**	**288.7067**

3.4 Paving - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1314	0.1110	1.7000e-004		7.1700e-003	7.1700e-003		6.6000e-003	6.6000e-003	0.0000	15.6087	15.6087	4.8600e-003	0.0000	15.7302
Paving	8.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1314**	**0.1110**	**1.7000e-004**		**7.1700e-003**	**7.1700e-003**		**6.6000e-003**	**6.6000e-003**	**0.0000**	**15.6087**	**15.6087**	**4.8600e-003**	**0.0000**	**15.7302**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.6000e-004	4.7600e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1020	1.1020	3.0000e-005	0.0000	1.1028
Total	**6.1000e-004**	**4.6000e-004**	**4.7600e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1020**	**1.1020**	**3.0000e-005**	**0.0000**	**1.1028**

3.4 Paving - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0123	0.1314	0.1110	1.7000e-004		7.1700e-003	7.1700e-003		6.6000e-003	6.6000e-003	0.0000	15.6087	15.6087	4.8600e-003	0.0000	15.7302
Paving	8.2800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1314**	**0.1110**	**1.7000e-004**		**7.1700e-003**	**7.1700e-003**		**6.6000e-003**	**6.6000e-003**	**0.0000**	**15.6087**	**15.6087**	**4.8600e-003**	**0.0000**	**15.7302**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.6000e-004	4.7600e-003	1.0000e-005	1.2400e-003	1.0000e-005	1.2400e-003	3.3000e-004	1.0000e-005	3.4000e-004	0.0000	1.1020	1.1020	3.0000e-005	0.0000	1.1028
Total	**6.1000e-004**	**4.6000e-004**	**4.7600e-003**	**1.0000e-005**	**1.2400e-003**	**1.0000e-005**	**1.2400e-003**	**3.3000e-004**	**1.0000e-005**	**3.4000e-004**	**0.0000**	**1.1020**	**1.1020**	**3.0000e-005**	**0.0000**	**1.1028**

3.5 Architectural Coating - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7200e-003	0.0451	0.0417	7.0000e-005		3.3900e-003	3.3900e-003		3.3900e-003	3.3900e-003	0.0000	5.7448	5.7448	5.5000e-004	0.0000	5.7585
Total	**1.4058**	**0.0451**	**0.0417**	**7.0000e-005**		**3.3900e-003**	**3.3900e-003**		**3.3900e-003**	**3.3900e-003**	**0.0000**	**5.7448**	**5.7448**	**5.5000e-004**	**0.0000**	**5.7585**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0101	7.6600e-003	0.0791	2.0000e-004	0.0205	1.3000e-004	0.0207	5.4500e-003	1.2000e-004	5.5700e-003	0.0000	18.2928	18.2928	5.5000e-004	0.0000	18.3065
Total	**0.0101**	**7.6600e-003**	**0.0791**	**2.0000e-004**	**0.0205**	**1.3000e-004**	**0.0207**	**5.4500e-003**	**1.2000e-004**	**5.5700e-003**	**0.0000**	**18.2928**	**18.2928**	**5.5000e-004**	**0.0000**	**18.3065**

3.5 Architectural Coating - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3990					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.7200e-003	0.0451	0.0417	7.0000e-005		3.3900e-003	3.3900e-003		3.3900e-003	3.3900e-003	0.0000	5.7448	5.7448	5.5000e-004	0.0000	5.7585
Total	**1.4058**	**0.0451**	**0.0417**	**7.0000e-005**		**3.3900e-003**	**3.3900e-003**		**3.3900e-003**	**3.3900e-003**	**0.0000**	**5.7448**	**5.7448**	**5.5000e-004**	**0.0000**	**5.7585**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0101	7.6600e-003	0.0791	2.0000e-004	0.0205	1.3000e-004	0.0207	5.4500e-003	1.2000e-004	5.5700e-003	0.0000	18.2928	18.2928	5.5000e-004	0.0000	18.3065
Total	**0.0101**	**7.6600e-003**	**0.0791**	**2.0000e-004**	**0.0205**	**1.3000e-004**	**0.0207**	**5.4500e-003**	**1.2000e-004**	**5.5700e-003**	**0.0000**	**18.2928**	**18.2928**	**5.5000e-004**	**0.0000**	**18.3065**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.9599	7.2076	9.5575	0.0317	2.0715	0.0367	2.1082	0.5552	0.0347	0.5899	0.0000	2,931.7083	2,931.7083	0.2114	0.0000	2,936.9942
Unmitigated	1.1522	9.4374	14.6220	0.0520	3.6796	0.0613	3.7409	0.9862	0.0580	1.0442	0.0000	4,802.4946	4,802.4946	0.2703	0.0000	4,809.2509

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	2,819.60	2,819.60	2819.60	9,635,002	5,424,242
Health Club	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	2,819.60	2,819.60	2,819.60	9,635,002	5,424,242

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Parking Lot	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Health Club	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311
Apartments Mid Rise	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	732.9793	732.9793	0.0303	6.2600e-003	735.6016
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	747.3208	747.3208	0.0309	6.3800e-003	749.9944
NaturalGas Mitigated	0.0441	0.3777	0.1660	2.4100e-003		0.0305	0.0305		0.0305	0.0305	0.0000	436.4815	436.4815	8.3700e-003	8.0000e-003	439.0753
NaturalGas Unmitigated	0.0441	0.3777	0.1660	2.4100e-003		0.0305	0.0305		0.0305	0.0305	0.0000	436.4815	436.4815	8.3700e-003	8.0000e-003	439.0753

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	7.91887e+006	0.0427	0.3649	0.1553	2.3300e-003		0.0295	0.0295		0.0295	0.0295	0.0000	422.5813	422.5813	8.1000e-003	7.7500e-003	425.0925
Health Club	260480	1.4000e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9002	13.9002	2.7000e-004	2.5000e-004	13.9828
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0441**	**0.3777**	**0.1660**	**2.4100e-003**		**0.0305**	**0.0305**		**0.0305**	**0.0305**	**0.0000**	**436.4815**	**436.4815**	**8.3700e-003**	**8.0000e-003**	**439.0753**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	7.91887e+006	0.0427	0.3649	0.1553	2.3300e-003		0.0295	0.0295		0.0295	0.0295	0.0000	422.5813	422.5813	8.1000e-003	7.7500e-003	425.0925
Health Club	260480	1.4000e-003	0.0128	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.9002	13.9002	2.7000e-004	2.5000e-004	13.9828
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0441**	**0.3777**	**0.1660**	**2.4100e-003**		**0.0305**	**0.0305**		**0.0305**	**0.0305**	**0.0000**	**436.4815**	**436.4815**	**8.3700e-003**	**8.0000e-003**	**439.0753**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.08993e+006	665.8965	0.0275	5.6900e-003	668.2787
Health Club	82720	26.3564	1.0900e-003	2.3000e-004	26.4507
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	172832	55.0680	2.2700e-003	4.7000e-004	55.2650
Total		**747.3208**	**0.0309**	**6.3900e-003**	**749.9944**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.04492e+006	651.5550	0.0269	5.5700e-003	653.8859
Health Club	82720	26.3564	1.0900e-003	2.3000e-004	26.4507
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	172832	55.0680	2.2700e-003	4.7000e-004	55.2650
Total		**732.9793**	**0.0303**	**6.2700e-003**	**735.6016**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.8630	0.1303	4.4436	7.4000e-004		0.0305	0.0305		0.0305	0.0305	0.0000	98.7913	98.7913	8.8700e-003	1.6800e-003	99.5136
Unmitigated	1.8630	0.1303	4.4436	7.4000e-004		0.0305	0.0305		0.0305	0.0305	0.0000	98.7913	98.7913	8.8700e-003	1.6800e-003	99.5136

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1399					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5775					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.2600e-003	0.0791	0.0337	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003	0.0000	91.6363	91.6363	1.7600e-003	1.6800e-003	92.1809
Landscaping	0.1364	0.0512	4.4100	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1549	7.1549	7.1100e-003	0.0000	7.3327
Total	**1.8630**	**0.1303**	**4.4436**	**7.4000e-004**		**0.0305**	**0.0305**		**0.0305**	**0.0305**	**0.0000**	**98.7913**	**98.7913**	**8.8700e-003**	**1.6800e-003**	**99.5136**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1399					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.5775					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	9.2600e-003	0.0791	0.0337	5.1000e-004		6.4000e-003	6.4000e-003		6.4000e-003	6.4000e-003	0.0000	91.6363	91.6363	1.7600e-003	1.6800e-003	92.1809
Landscaping	0.1364	0.0512	4.4100	2.3000e-004		0.0241	0.0241		0.0241	0.0241	0.0000	7.1549	7.1549	7.1100e-003	0.0000	7.3327
Total	**1.8630**	**0.1303**	**4.4436**	**7.4000e-004**		**0.0305**	**0.0305**		**0.0305**	**0.0305**	**0.0000**	**98.7913**	**98.7913**	**8.8700e-003**	**1.6800e-003**	**99.5136**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	163.0677	0.7389	0.0186	187.0913
Unmitigated	188.1653	0.9230	0.0232	218.1388

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	27.6253 / 17.416	185.0257	0.9075	0.0228	214.4946
Health Club	0.473145 / 0.289992	3.1396	0.0155	3.9000e-004	3.6442
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**188.1654**	**0.9230**	**0.0232**	**218.1388**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	22.1002 / 17.416	160.3507	0.7265	0.0183	183.9699
Health Club	0.378516 / 0.289992	2.7170	0.0124	3.1000e-004	3.1214
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**163.0677**	**0.7389**	**0.0186**	**187.0913**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	24.4239	1.4434	0.0000	60.5091
Unmitigated	48.8478	2.8868	0.0000	121.0182

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	195.04	39.5914	2.3398	0.0000	98.0859
Health Club	45.6	9.2564	0.5470	0.0000	22.9323
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**48.8478**	**2.8868**	**0.0000**	**121.0182**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	97.52	19.7957	1.1699	0.0000	49.0430
Health Club	22.8	4.6282	0.2735	0.0000	11.4662
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**24.4239**	**1.4434**	**0.0000**	**60.5091**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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APPENDIX B

Cultural and Paleontological Resources Assessment

Moreno Valley Golf Course Project

City Of Moreno Valley, Riverside County, California

Prepared for:

ROC III CA Belago, LLC
c/o Bridge Investment Group Holdings
2521 State Street
Carlsbad, CA 92008

Prepared by:

Matthew Stever, M.A., R.P.A., Benjamin Scherzer, M.S., and Curt Duke, M.A., R.P.A. (Principal Investigator)
Duke Cultural Resources Management, LLC
20371 Lake Forest Drive, A-2
Lake Forest, CA 92630
(949)356-6660
www.DukeCRM.com

Duke CRM Project Number: C-0244

November 22 2017

Per California Government Code 6254.10 archaeological site location information is exempt from the California Public Records Act. Therefore archaeological site location information should be kept confidential and not be made available for public view.

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Figures

Tables:

Appendix (Public)

Appendix (Confidential)

MANAGEMENT SUMMARY

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to ROC III CA Belago, LLC to provide cultural and paleontological resources services for the Moreno Valley Golf Course Project (Project), located at 28095 John F Kennedy Drive, in the City of Moreno Valley, Riverside County, California. The Project boundaries encompass approximately 169 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

ROC III CA Belago, LLC proposes the redesign and reconfiguration of the existing Moreno Valley Ranch Golf Club. The Project effectively surrounds the Reserve at Rancho Belago Project (Rancho Belago), and utilizes a portion of that project's record search material as background for this report.

The cultural and paleontological resources assessment includes background research and a field survey to identify cultural and paleontological resources. The record search and field survey did not identify any cultural or paleontological resources within the Project boundaries. The records search revealed that two previously recorded archaeological sites are adjacent to the project; however, these sites could not be relocated during the field survey and are presumed destroyed.

Assessing the potential for impacts is made difficult by the fact that the project was previously developed as a golf course; however, the level of prior ground disturbance is not known. DUKE CRM recommends that no archaeological and/or historical resources are likely to be impacted by the Project. However, multiple fossils localities were found nearby in similar deposits to those underlying the Project. The project has a high potential to impact paleontological resources (fossils) at depth during ground disturbing activities associated with the Project. As a result, we recommend that paleontological construction monitoring occur during ground disturbance in native soils associated with development of the Project.

If archaeological resources are discovered during construction, a qualified archaeologist shall be retained to assess the nature and significance of the discovery. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

INTRODUCTION

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to ROC III CA Belago, LLC to provide cultural and paleontological resources services for The Moreno Valley Golf Course Project (Project), located at 28095 John F Kennedy Drive, in the City of Moreno Valley, Riverside County, California. The Project boundaries encompass approximately 169 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

Project Description

The Applicant, ROC III CA Belago, LLC, proposes to redesign and rebuild the Moreno Valley Ranch Golf Course on the approximate 169 acre property to reestablish an enjoyable and sustainable golf course suitable for non-professional players, according to the *Moreno Valley Ranch Golf Course Master Improvement Plan*, dated August 7th, 2017. The existing course was designed to be a professional-level course and was abandoned. The former facility had three, nine-hole courses, the Valley (north), the Mountain (south), and the Lake (west). The course names will be used in this report only as spatial references. The Lake Course is omitted from the Project. The Project will entail reshaping some landscape features of the Valley and Mountain Courses to reduce the severity of the terrain, redesign of bunkers and sand traps, removal of railroad tie landscape elements, repair of golf cart paths and irrigation systems, and rebuilding the clubhouse.

Project Location

The Project is located in the southwestern portion of the City of Moreno Valley, situated against the foothills of Mt. Russell along the southern boundary. The Project is bounded on the north by Cactus Avenue, on the west by Moreno Beach Drive and Via Del Lago Drive, and on the east by John F. Kennedy Drive and Championship Drive, both of which curve west and transect the Project, Figure 1. The property is depicted within the *Sunnymead, Calif.,* USGS 7.5-minute quadrangle. Specifically, the Project is located in Township 3 South, and Range 3 West, in Sections 14, 22, and unsectioned land of the *San Jacinto Nueveo y Potrero Rancho* of what would be Section 23, Figure 2. The Project boundaries encompass approximately 169 acres upon an abandoned golf course, Figure 3. The Project is within Riverside County Assessor Parcels 304-030-005, -100-007, and -008 and is within the Moreno Valley Ranch Specific Plan No. 193, designated as Golf Course.

SETTING

Natural

California is divided into 11 geomorphic provinces, each naturally defined by unique geologic and geomorphic characteristics. The Project is located in the northeast portion of the Peninsular Ranges geomorphic province which is distinguished by northwest trending mountain ranges and valleys following branches of the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north to the San Bernardino Mountains, west into the submarine continental shelf, and south to the California state line.

The Project is located in the northern portion of the Perris Block, a tectonically stable package of Cretaceous and older granitic and metasedimentary basement rocks from the Peninsular Ranges Batholith (Morton and Matti 2001, Springer et al. 2009). Locally, the Project is situated at the base of local highlands composed of plutonic rocks from the Perris Block (Morton and Matti 2001), on alluvial deposits that can reach up to 2,000 feet in thickness (City of Moreno Valley 2006). The Project is located on Greenfield, Cieneba and Hanford Series (NRCS 2017a, 2017b, 2017c) soils. Cieneba Series soils are shallow to very shallow and formed in residuum weathered from granite. Hanford Series are very deep and formed in moderately-coarse alluvium dominantly from granite.

The Project is predominantly located three different formations, Figure 4. Late Pleistocene to Holocene valley deposits (Qyva) are composed of fluvially-deposited, unconsolidated sand, silt, and clay in the north and dominated by sand-sized (arenaceous) sediment. South of these are early Pleistocene alluvial fan deposits ($Qvof_a$) composed of slightly- to well-consolidated to indurated sediments, capped by moderately- to well-

developed pedogenic soils dominated by arenaceous sediments. Heterogeneous granitic rocks (Khg) compose the highland surrounding the Perris Reservoir with exposure in the southwest corner.

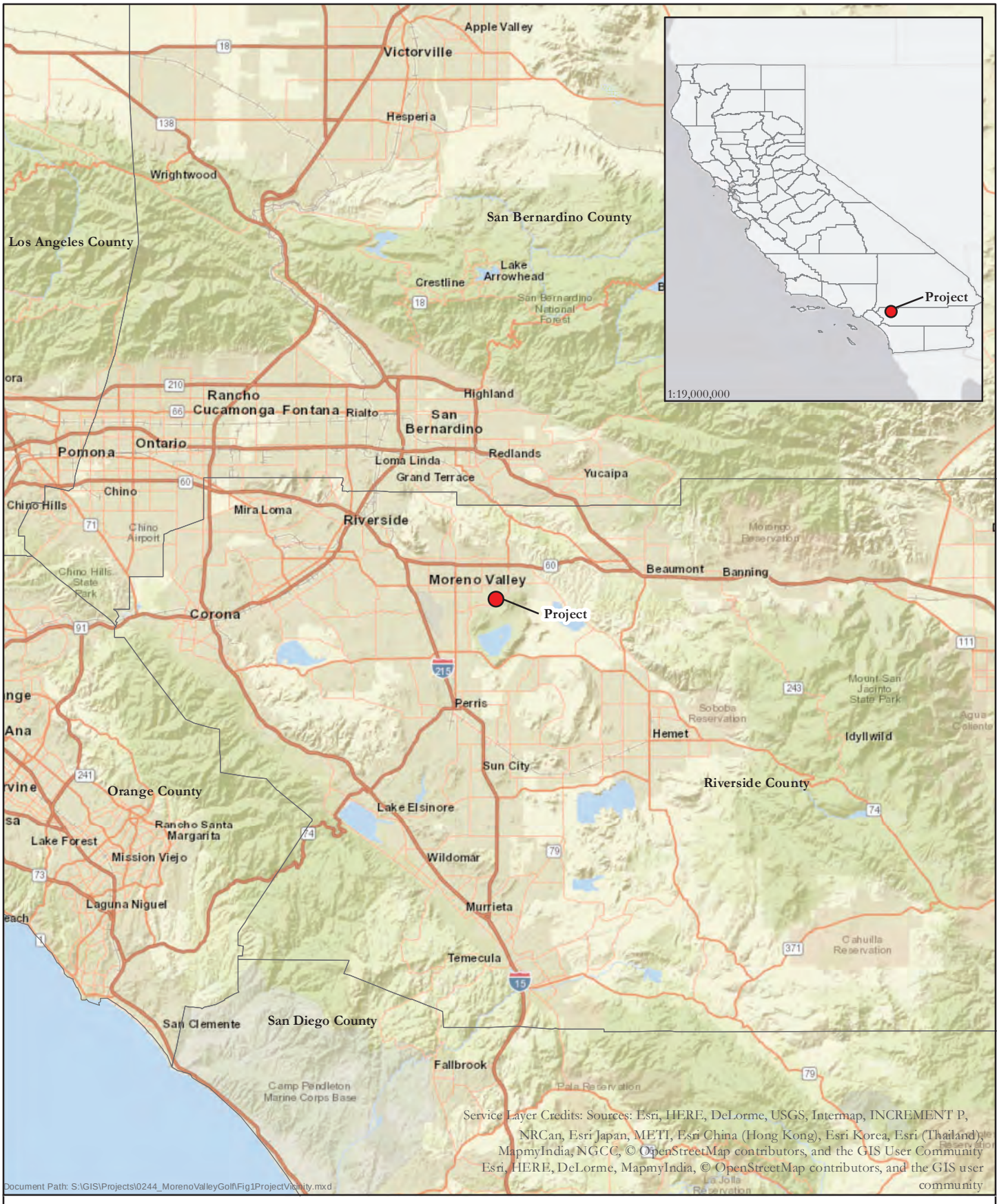

Figure 1- Project Vicinity
Moreno Valley Golf Course
City of Moreno Valley, County of Riverside

DUKE CRM

0 10 20 Miles
1 inch = 10 miles 1:633,600
N

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

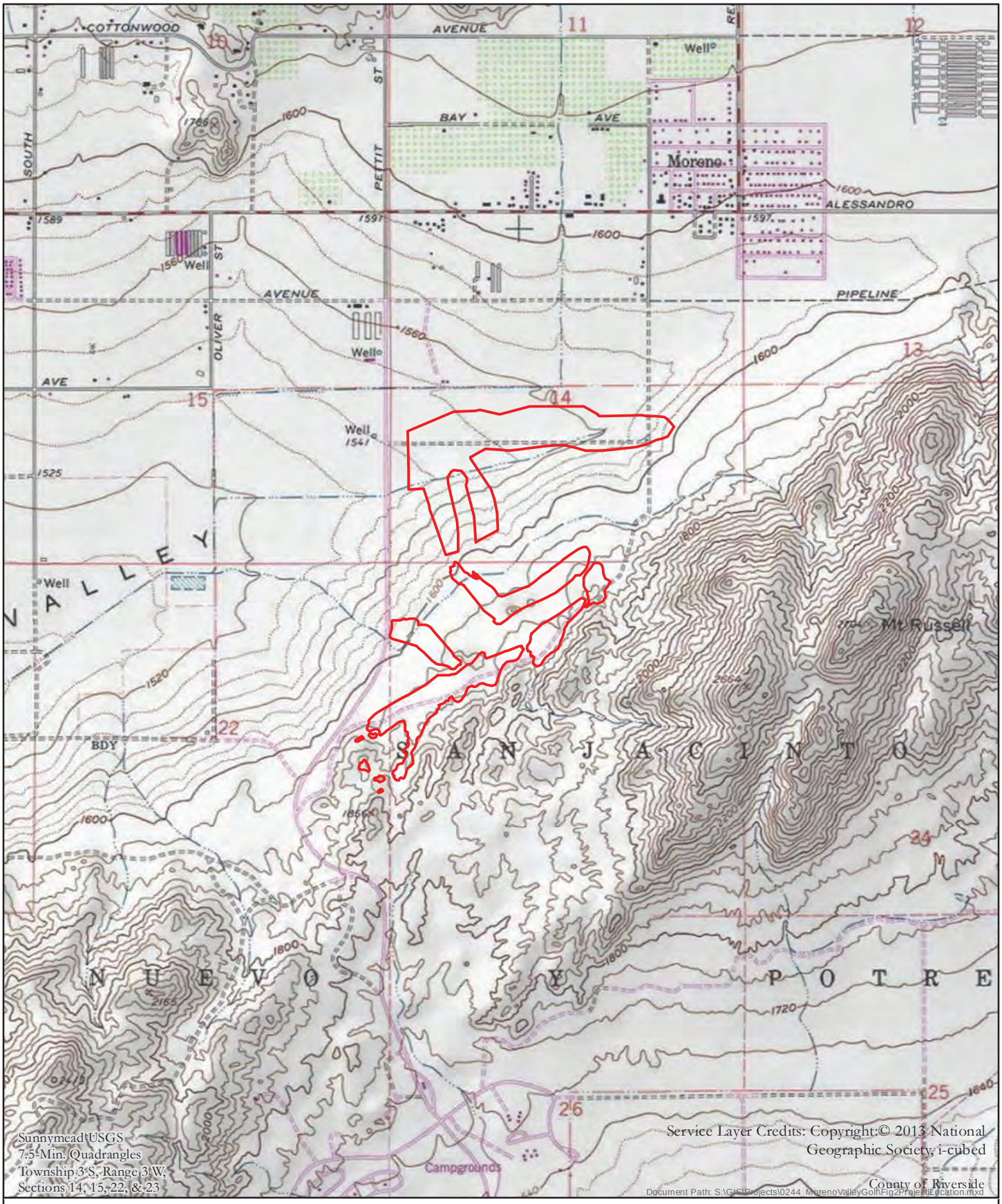

Figure 2- Project Location
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

Project

0 2,000 4,000 Feet

1 inch = 2,000 feet 1:24,000

N

DUKE CRM

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Figure 3 (Index)- Project Aerial
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

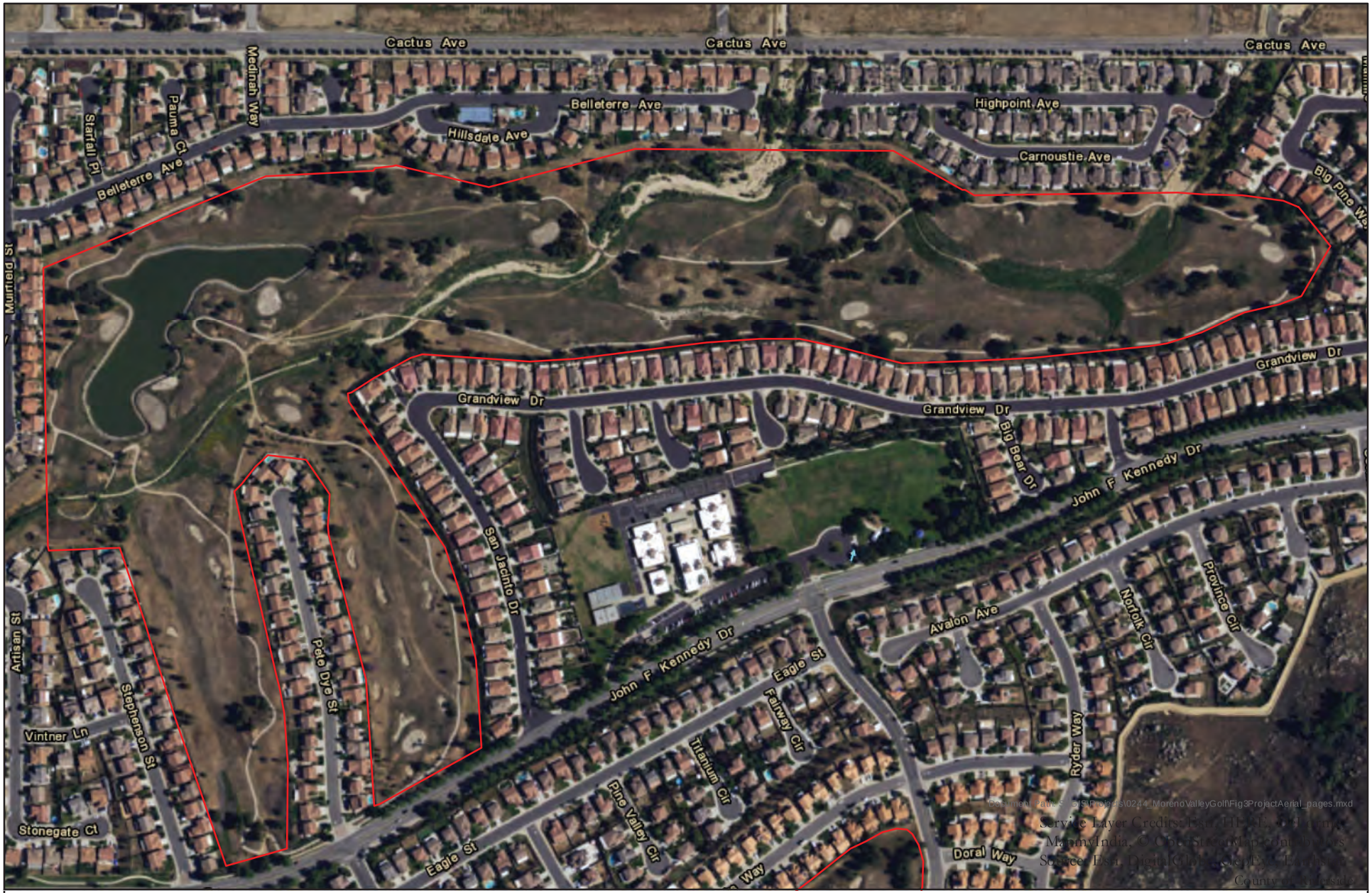

Figure 3a- Project Aerial
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Project Boundaries

0 425 850 Feet

N

1 inch = 425 feet 1:5,100

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Figure 3b- Project Aerial
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Figure 3c- Project Aerial
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Project Boundaries

0 425 850 Feet

N

1 inch = 425 feet 1:5,100

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

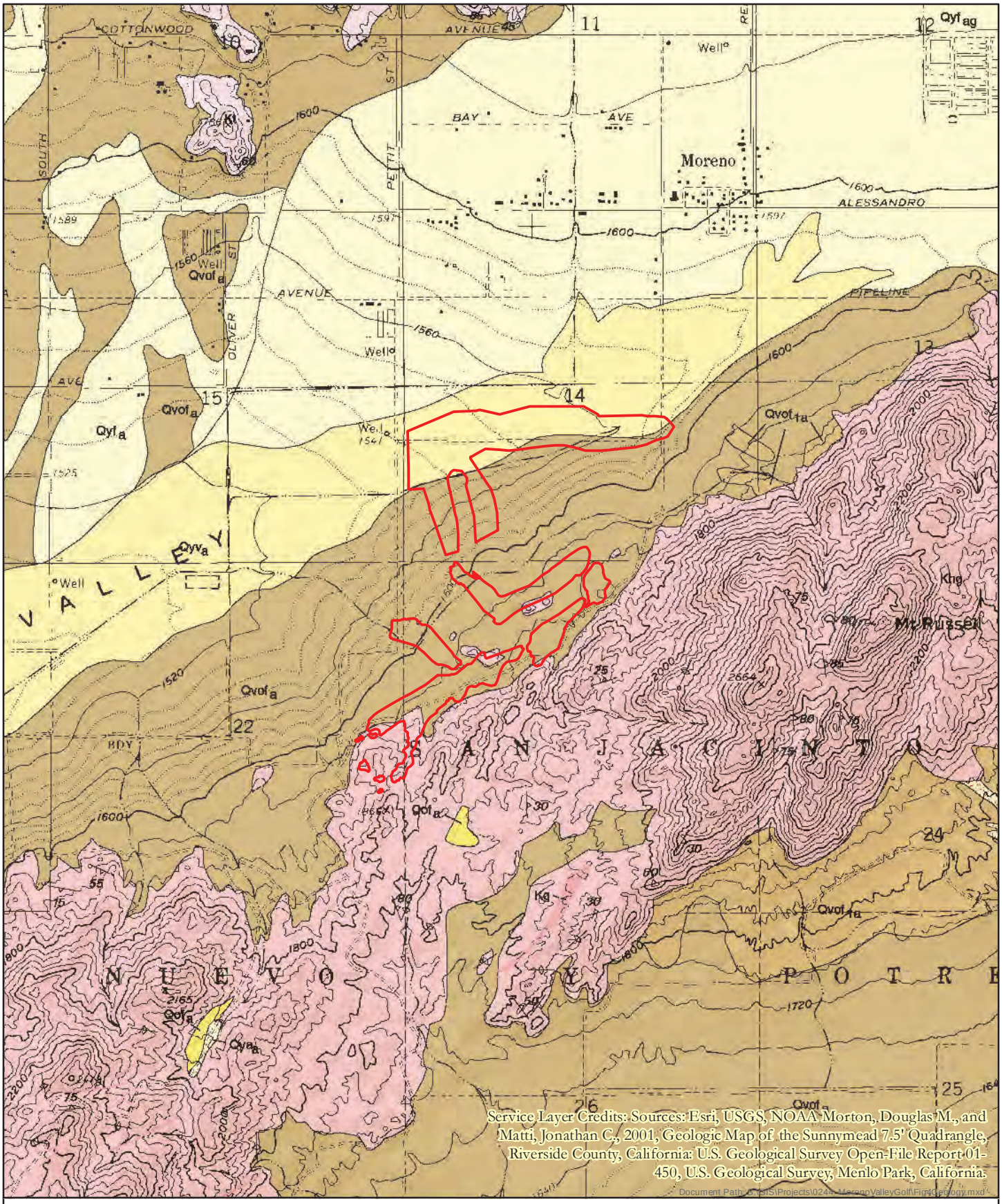

Figure 4- Geology
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Project

0 2,000 4,000 Feet

1 inch = 2,000 feet 1:24,000

N

Cultural

Prehistory

Two primary regional schemas are commonly cited in the archaeological literature for western Riverside County where the Project is located. These schemas or syntheses generalize the presence or absence of certain artifact types into explanatory frameworks of temporal chronologies and/or subsistence practices. Schemas are necessary because many archaeological sites lack absolute datable material (ex. Carbon for radiometric ^{14}C dating) and so researchers need to cross-date sites by comparison to either coastal or desert chronologies with established chronological sequences backed by absolute dates. In western Riverside County, it is thought to be the meeting ground of both coastal and inland desert schemas and neither exclusively explains prehistoric finds.

The first schema, advanced by Wallace (1955), defines four cultural horizons for the southern California coastal province, each with characteristic local variations:

I. Early Man (~9000–8500 B.P.) is a hunting culture based on almost exclusive evidence of chipped-stone hunting materials: dart points, scrapers, choppers, and bifaces.
II. Milling Stone (8500–4000 B.P.) reflects a change to a more sedentary, plant-collecting lifestyle as evidenced by the introduction and dominance of milling stone artifacts and a decrease in well-made projectile points.
III. Intermediate (4000–1500 B.P.) is characterized by a larger dependency on hunting, use of the dart and atlatl, and the shift from using the mano/metate to mortar/pestle. However, knowledge of this horizon suffers from lack of knowledge about what occurred during this time, not a lack of inhabitants along the southern California coast.
IV. Late Prehistoric (1500~200 B.P.) contains a more nuanced artifact assemblage indicative of a more complex lifestyle and an increase of population. This horizon is characterized by an increase in bow and arrow use, steatite containers, pottery, circular fish hooks, perforated stones, asphaltum, diversified bone tools, ample shell ornaments, and elaborate mortuary customs.

Warren and Crabtree (1986) employ a more ecological approach to the deserts of southern California, defining five traditions in prehistory:

I. Lake Mojave (12000–7000 B.P.)
II. Pinto (7000–4000 B.P.)
III. Gypsum (4000–1500 B.P.)
IV. Saratoga Springs (1500–800 B.P.)
V. Shoshonean (800~200 B.P.)

Warren and Crabtree (1986) viewed cultural continuity and change in terms of various significant environmental shifts, defining the cultural ecological approach for archaeological research of the California deserts. The authors viewed changes in settlement pattern and subsistence as cultural adaptations to a changing environment, beginning with the gradual environmental warming in the late Pleistocene, the desiccation of the desert lakes during the early Holocene, the short return to pluvial conditions during the middle Holocene, and the general warming and drying trend, with periodic reversals, that continues to this day. The work by Warren and Crabtree (1986) is built upon, in part, by Warren (1980) in which he argued for a chronology based on projectile points as period markers backed by radiocarbon assays providing absolute dates.

The two schemas contrast in important ways. The units employed by Warren are "traditions," and in contrast to Wallace (1955), traditions may be spatially restricted but display temporal continuity. For Wallace, "horizons" or "periods," are extensive through space but restricted in time. More recent schema have been attempted to reconcile these differences. More recently, Koerper and Drover (1983) synthesized chronologies for coastal southern California and employed Wallace's (1955) horizon terminology but use radiometric data

to sequence stylistic changes observed in the artifact assemblages, which they interpreted as material indication of cultural change through time. Regardless of the overall schema to best explain the prehistory of western Riverside County, the region can be understood within broad chronological frameworks and as the meeting ground of the coastal and desert subsistence patterns.

Early Holocene (11,600 – 7,600 BP)

Traditional models of the prehistory of California hypothesize that its first inhabitants were the big game hunting Paleoindians who lived at the close of the last ice-age (~11,000 years before present [BP]). As the environment warmed and dried, large Ice Age fauna died out, requiring adaption by groups to survive. The western Great Basin and deserts of southern California were characterized by large pluvial (rainfall-fed) lakes, streams, marshes, and grasslands. The human response to this environment is known as the Western Pluvial Lakes Tradition (WPLT) (Moratto 1984). The WPLT is generally identified by an advanced flaked-stone industry of foliate knives/points, Silver Lake and Lake Mojave points, lanceolate bifaces, and long-stemmed points. Other flaked-stone tools include crescents, scrapers, choppers, scraper-planes, hammer stones, cores, drills, and gravers. People of this period hunted diverse populations of smaller animals and collected a wide number of plants from diverse eco-zones. Importantly, this period lacks widespread evidence of milling stones, and, therefore, hard seed processing was likely not widely practiced. Sites are generally found along the shores of former pluvial lakes, marshes, and streams (Moratto 1984). The desert manifestation of the WPLT is the Lake Mojave Complex, while along the coast the WPLT is seen in the San Dieguito Complex. Along the coast, rising sea levels created bays and estuaries. Following initial settlement along the coast, groups adopted marine subsistence including fish and shellfish. These shell middens contain flaked cobble tools, metates, manos, discoidals, and flexed burials and allowed for a semi sedentary life style (Byrd and Raab 2007). Eventually, shellfish became the primary source of food, while plant gathering, hunting and fishing were less important.

The Paleocoastal Tradition (PCT) has many similarities to the WPLT but it reflects a coastal adaptation (Davis et al. 1969). PCT sites are located along bays and estuaries. Subsistence patterns indicate the eating of mollusks, sea mammals, sea birds, and fish in addition to land plants and animals. The argument for a PCT has gained momentum. This is based on a vast amount of recent research that has been conducted along the California coast and the Channel Islands (Byrd and Raab 2007). A recent study dates habitation on San Miguel Island back to ~11,300 BP (Daisy Cave), while a site on San Clemente (Eel Point) shows that a Paleocoastal Tradition was entrenched at Eel point in the early Holocene, with the hunting of seals, sea lions, and dolphins, as well as the gathering of shellfish.

Middle Holocene (7,600 – 3,650 BP)

The middle Holocene is a time of change and transition. As conditions continued to warm and dry, lakes and streams in the desert disappeared. This resulted in a shift in subsistence strategies, namely a shift to the gathering of plant seeds, grasses and shellfish along the coast as the primary dietary staple. Fishing and the hunting of smaller animals played a less important role in day to day activity. This shift in subsistence is what Wallace named the Millingstone Horizon (Wallace 1955) and this name has continued among archaeologists working on the coastal province of southern California. Large habitations are seen in the inland areas and considerable variability is seen along coastal occupation of southern California. Occupation revolved around seasonal and semi-sedentary movements in coastal Orange and San Diego counties. Trade networks are postulated by researchers that have dated Ollivella grooved rectangle shell beads as far north as central Oregon dating to 4900-3500 BP (Byrd and Raab 2007). Characteristics of the middle Holocene sites include ground stone artifacts (manos and metates) used for processing plant material and shellfish, flexed burial beneath rock or milling stone cairns, flaked core or cobble tools, dart points, cogstones, discoidals, and crescentics.

Late Holocene (3,650 – 233 BP)

During the late Holocene there was a migration of Takic speakers from the Great Basin into southern California. This intrusion is known as the "Takic Wedge." Characteristics of the late Holocene include the introduction of the bow and arrow, mortar and pestle, use of ceramics, and a change in mortuary behavior from inhumations to cremations in southern California. This was also a period of climatic fluctuation.

Paleoenvironmental data show that periods of drought alternated with cooler and moister periods (Vellanoweth and Grenda 2002; Byrd and Raab 2007; Jones et al. 2004). This resulted in dynamic regional cultural patterns with considerable local variation. Byrd and Raab (2007) suggest that foragers in southern California over-exploited high-ranked food, such as shellfish, fish, marine and land mammals, and plant remains. This led to resource depression, causing people to forage more costly resources that were more abundant.

Ethnography

The Project is located within two tribal territories, the Cahuilla and the Luiseño Indians. Both are Takic speakers and descended from Late Prehistoric populations of the region. Takic is part of the larger Uto-Aztecan language stock which migrated west from the Great Basin (Bean and Smith 1978).

Cahuilla territory included the Coachella Valley, the San Jacinto and Santa Rosa Mountain ranges. Bean and Shipek (1978) estimated that the Cahuilla numbered between 6,000 and 10,000 people at the time of Spanish Contact. Politically and ceremonially Cahuilla clans were led by a Chief or *Net*. The *Net* had charge of the sacred dance house and the sacred bundle, *masut*, which consisted of matting which was wrapped around items sacred to the clan such as ritual paraphernalia. Importantly, the *masut* was the sacred expression of each clan. A *Paha*, ritual assistant, is also found among other Takic speaking groups. The office of *Paha* varied however, as it was not always present within some of the southern-most Desert Cahuilla clans (Bean and Saubel 1972, Bean and Shipeck1978; Hooper 1920). As other Takic speaking groups did, the Cahuilla would publically gather for the naming of children, marriage, female and male initiation ceremonies, for the ascendency of a *Net*, for an Eagle-Killing Ceremony and the mourning ceremony. The mourning ceremony took place as a way to collectively mourn all those that died since the previous mourning ceremony. Each person was cremated along with his or her individual possessions in a ceremony separate from the mourning ceremony. Mourning ceremonies were one of the most important ceremonies for clan in that sacred songs were sung, sacred dances were danced, and moieties exchanged food and valued goods.

Cahuilla diet emphasized acorn, *Salvia islay*, yucca, agave and pinyon gathering, or the gathering of mesquite, cactus, and hard seeds such as screwbean, juniper and mesquite depending upon the local environment (Bean and Saubel 1972). The Cahuilla were also observed to cultivate small quantities of corn, beans, squashes, pumpkins, melons and wheat as early as 1824 by the Romero expedition. These crops and the cultivation of them potentially made their way from the Colorado River area to the Coachella Valley. The inhabitants of the Coachella did not practice flood recessional agriculture of the Colorado River groups (Bean and Lawton 1993).

The territory of the Luiseño extended along the coast south to Agua Hedionda Lagoon, northwestward to Aliso Creek just north of San Juan Capistrano, and eastward to the Elsinore Valley and Palomar Mountain. Like other Native American groups in southern California, the Luiseño caught and collected seasonally available food resources and led a semi-sedentary lifestyle with the majority of individuals residing at the village for the entire year (Oxendine 1983:57). Luiseño villages were generally located in valley bottoms near to water. The Luiseño had a well-developed sense of ownership (White 1963:122), and their concept of property rights included the idea of private property. Property rights covered items and land owned by the village as well as items such as houses, gardens, ritual equipment, trade beads, eagle nests, and songs that were owned by individuals. Luiseño villages were politically independent and were administered by a chief, who inherited his position from his father (Bean and Shipek 1978).

Subsistence was based primarily on seeds from local grasses, manzanita, sunflower, sage, chía, and pine nuts, as well as acorns. Seeds were dried, ground, and cooked into a mush. Seasonal camps were also established along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971). Game animals such as deer, rabbit, jackrabbit, wood rat, mice, antelope, and many types of birds were regularly hunted (Bean and Shipek 1978). In addition, the Luiseño utilized fire for crop management and communal rabbit drives (Bean and Shipek 1978). Small seasonal habitation sites in the area would contain quantities of fire affected rock (FAR), some burned bone, and small amounts of ground and flaked stone tools. They

might be found as open sites atop knolls or ridges, or in protected areas near streams, or even in rock shelters.

History

The first Europeans to explore what would become the state of California belonged to the 1542 expedition of Juan Rodriguez Cabrillo, who sailed along and occasionally landed on the coast. Europeans are thought to have first visited portions of the interior in 1769, when Gaspar de Portola (Brown 2001) led a 62-person overland expedition from San Diego to Monterey (Cramer 1988). Two later expeditions, led by Juan Bautista de Anza in 1774 and 1775 from Sonora through southwestern Arizona and southern California, crossed the Santa Ana River at Anza Narrows in today's Santa Ana River Regional Park.

The Spanish government subsequently established missions and military outposts in San Diego in 1769 to facilitate colonization of the area and to keep rival European nations out of the area. After Mexico won independence from Spain in 1822, colonization efforts in Alta California decreased. The Spanish mission system was largely abandoned and the Mexican government bestowed land grants or ranchos to those loyal to the Mexican government including some Anglo settlers. The Mexican period (1822-1848) is largely identified with the ranchos acquired by individuals through the land grant system as well as the secularization of the missions. Mission secularization began on July 25, 1826 with a decree by Governor Jose Maria Echeandfa and was completed by 1836 after an additional decree in 1831 (Engstrand and Ward 1995).

The end of the Mexican period in California began on June 14, 1846 when a band of American settlers supported by the American explorer John C. Fremont and his team captured Mexican General Mariano Guadalupe Vallejo in a dawn raid in Sonoma (Ide 1967, Rolle 2003). The Americans raised a flag for the "California Republic" and their actions became known as the "Bear Flag Revolt." The so-called California Republic was short-lived however, as on July 7, 1846, U.S. Navy forces captured Monterey, California, where the U.S. flag was raised (Rolle 2003). On February 2, 1848, the war between the U.S. and Mexico ended with the signing of the Treaty of Guadalupe Hidalgo, which greatly expanded U.S. territory (including California) and resulted in Mexico being paid $15 million for the land (Rolle 2003).

Although gold had been found prior to this in various parts of California, the well-publicized discovery of gold near Sutter's fort in 1848 dramatically increased the Anglo settlement of California. Despite property rights of rancho owners being secured by provisions in the Treaty of Guadalupe Hidalgo, California in the early American period experienced the transfer and subdivision of many of the ranchos as well as a shift from ranching to agriculture as the primary means of subsistence.

The Anza Expedition moved through the City of Moreno Valley in the late 1770's about a half-mile north of present-day March Air Reserve Base. U.S. settlement began in the 1850's and was an open landscape used for farming. The land was supported by Frank E. Brown's Bear Valley Land and Water Company. The City of Moreno Valley was named after Frank E. Brown, in that "*Moreno*" in Spanish, means, "brown" (Gudde 1998). The Bear Valley Land and Water Company closed in 1899 when the City of Redlands claimed eminent domain; therefore most of the population in Moreno Valley soon diminished until March Field was built in 1918. This helped to create residences within the area and by 1950's the population grew even more when the Riverside International Raceway was built.

METHODS

Research materials, including historic maps, previous surveys, planning documents, ordinances, and published local and regional historical accounts were collected and reviewed. The recent report, *Cultural and Paleontological Resources Assessment, The Reserve at Rancho Belago, City of Moreno Valley, Riverside County, California* (Duke et al. 2017) is also used as a partial basis for this report.

Record Search

An expanded record search based on the Reserve at Rancho Belago Project (Duke et al. 2017) records search for archaeological and historical resources was conducted at the Eastern Information Center (EIC). The EIC is part of the California Historical Resources Information System (CHRIS) and is located at University of

California, Riverside. The records search included a review of the original record search materials, as well as review of all recorded historic and prehistoric archaeological sites within the expanded one-mile radius of the Project, as well as a review of cultural resource survey and excavation reports. In addition, the California State Historic Property Data File (HPD) was reviewed, which includes the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). The paleontological research conducted for the Reserve at Rancho Belago Project was utilized for the current Project. This included a paleontological records search though the Western Science Center (WSC) in Hemet. In addition, Mr. Scherzer performed a search of the University of California Museum of Paleontology (UCMP) online collections, the online Paleobiology Database (PBDB), and other published literature for fossil localities from similar deposits near the Project.

Field Survey

The goal of the pedestrian survey was to identify all historic built environment resources, and prehistoric/ historic period archaeological resources within the Project boundaries. Due to the disturbed nature of the Project property, the field survey used both reconnaissance and intensive pedestrian survey. Reconnaissance survey using a four-wheel drive vehicle efficiently assessed the amount of prior ground disturbance within the Project, identified areas of possible high sensitivity for cultural resources, and identified areas with prior ground disturbance that were likely to have exposures of subsurface deposits. Intensive pedestrian survey on transects between 10 to 40 meters with the narrower transects focused on those areas of minimal disturbance, areas that had a moderate to high sensitivity for cultural resources, as well as various areas of prior disturbance that had good ground visibility and soil exposures.

Digital photographs of the Project were taken on a Fuji Finepix XP120 digital camera. Potential resources were GPS mapped using the GeoCam Pro app for Android on a Samsung Galaxy S5 smartphone. Field notes were taken, and updates to existing archaeological sites were recorded on State of California DPR 523 forms to be filed at the EIC upon completion.

Personnel

Mr. Duke is the Principal Archaeologist of DUKE C R M . Mr. Duke meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology; he is also a Registered Professional Archaeologist (RPA) who has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring) since 1994. Mr. Duke holds a Master of Arts degree in Anthropology with an emphasis in archaeology from California State University, Fullerton and a Bachelor of Arts degree in Anthropology from the University of California, Santa Cruz. Mr. Duke has worked throughout southern and Northern California and parts of Arizona and Nevada. He is included on the County's list of qualified archaeologists.

Matthew Stever, M.A. RPA is the primary author of the report under the direct supervision of Mr. Duke. Paleontologist Benjamin Scherzer, M.S., prepared the paleontology and geology sections. Mr. Scherzer and Sara Nava conducted the field survey. Please see Appendix B for the resume of Mr. Duke, Mr. Scherzer, and Mr. Stever.

RESULTS

Records Search

Cultural Resources

On April 7th, 2016, Sarah Nava conducted a records search at the EIC (for the Reserve at Rancho Belago Project). On November 15, 2017, Matthew Stever M.A., RPA conducted an updated records search at the EIC. There are eleven cultural resource reports on file within one mile of the Project, one of those is within the Project. Table 1 summarizes seven of the relevant cultural resource studies within one mile of the Project. Studies not listed in the table were small in area and/or with negative results. Approximately 10 percent of

the surrounding one-mile radius has been surveyed for cultural resources. Including all cultural resources surveys, most have been between 10 and 100 acres in size though three are larger than 100 acres.

Table 1- Sample of Prior Cultural Resource Studies within One Mile of the Project

Report No.	Year	Author	Affiliation	Title	Resources reported on in current proposed Project
RI-00414	1978	Thomas Holcomb	Archaeological Research Unit, UC Riverside	Environmental Impact Evaluation: Archaeological Assessment of Two Portions of Land in Moreno Valley, Riverside County, California	None
RI-01843	1984	Scientific Resource Surveys, Inc.	Author	Cultural Resource Survey Report On Wolfskill Ranch	33-000011, 33-000012, 33000021, 33-000202, 33-000419, 33-000420, 33-000421, 33-000464, 33-000530, 33-000531, 33-000532, 33-000533, 33-000534, 33-000535, 33-000536, 33-000537, 33-000538, 33-000539, 33-000540, 33-000541, 33-000542, 33-000543, 33-000544, 33-000608, 33-000609, 33-000610, 33-000715, 33-002829, 33-002867, 33-002950, 33-002951, 33-002952, 33-002953, 33-002954, 33-002955, 33-002956, 33-002957, 33-002958, 33-002959, 33-002960, 33-002961, 33-002962, 33-002963, 33-002964, 33-002965, 33-002966, 33-002967, 33-002968, 33-002969, 33-002993, 33-002994, 33-002995, 33-002996
RI-02105	1987	Drover, C.E.	Author	An Archaeological Assessment of the A.L.T.A. Specific Plan, Moreno Valley, California	None
RI-02160	1987	Drover, C.E.	Author	Letter Report: Archaeological Evaluation of Potential Hospital Site In Moreno Valley	None
RI-05288	2000	Laurie White	Michael Brandman and Associates	Letter Report: Records Search Results For Sprint PCS Facility RV35XC093D (Golf Course Maintenance), City of Moreno Valley, Riverside County, CA	None
RI-08802 (within Project)	2012	Bai "Tom" Tang, Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	CRM Tech,	Phase I archaeological Assessment: Moreno Master Drainage Plan Revision	None
RI-09652	2014	Heather R. Puckett	TetraTech, Inc.	Cultural Resources Summary for the Proposed Verizon Wireless, Inc., Property Site, 27905 John F Kennedy Drive, Moreno Valley, Riverside County, California 92555	None

Records from the EIC indicate that there are 39 cultural resources mapped within one mile of the Project boundary and none are recorded within the Project. Two sites are mapped within the Reserve at Rancho Belago Project portion of the existing golf course, sites 33-002963 and 33-002964. Each site was recorded as a single milling slick on a single boulder with no associated surface artifacts (SRS 1984). They are summarized in Table 2 below.

Table 2- Cultural Resources within One Mile of the Project

Primary #	Description	Distance
33-000419	Prehistoric camp site with milling features and rock art	~1/2-mile, northeast
33-000420	Prehistoric Milling slicks, bedrock mortars, and outcrops	~1/2-mile, northeast
33-000482	Prehistoric Milling slicks and outcrops	~3/4-mile, south
33-000483	Prehistoric Milling slicks and outcrops	~1/2-mile, south
33-000484	Prehistoric Milling slicks and outcrops	~1 mile, south
33-000485	Prehistoric Milling slicks and mortars on outcrops	~1/2 mile, south
33-000492	Prehistoric Milling slicks and outcrops	~1 mile, south
33-000537	Prehistoric Milling slicks on boulder	~1 mile, southwest
33-000539	Prehistoric Milling slicks on boulder	~1 mile, southwest
33-000540	Prehistoric Milling slicks on boulders	~3/4 mile, southwest
33-000541	Prehistoric Milling slicks and mortar on boulders	~3/4 mile, southwest
33-000543	Prehistoric Milling slicks and outcrops	~1 mile, southwest
33-000544	Prehistoric Rock shelter, and milling slick	~1 mile, southwest
33-000611	Prehistoric Milling slicks, one biface, and outcrops	~3/4 mile, south
33-002867	Prehistoric Milling slicks and outcrops	~1/4-mile, south
33-002952	Prehistoric Milling slick	~1 mile, east
33-002953	Prehistoric Milling slick and outcrop	~1 mile, east
33-002954	Prehistoric Milling slick and outcrop	~1 mile, east
33-002955	Prehistoric Milling slick and outcrop	~1 mile, east
33-002956	Prehistoric Milling slick and outcrop	~1 mile, east
33-002957	Prehistoric Milling slick and outcrop	~1 mile, east
33-002958	Prehistoric Milling slick and outcrop	~1 mile, east
33-002959	Prehistoric Milling slick and outcrop	~1 mile, east
33-002960	Prehistoric Milling slick and outcrop	~1 mile, east
33-002961	Prehistoric Milling slick and outcrop	~1 mile, east
33-002962	Prehistoric Milling slick and outcrop	~1/4-mile, east
33-002963	Prehistoric Milling slick and outcrop	Adjacent
33-002964	Prehistoric Milling slick and outcrop	Adjacent
33-002965	Prehistoric Milling slicks and outcrops	~1/2-mile, south
33-002967	Prehistoric Milling slick and outcrop	~1 mile, east
33-002968	Prehistoric Milling slick and outcrop	~1/4-mile, south
33-003233	Prehistoric Milling slick and outcrop	~1 mile, northeast
33-003234	Prehistoric Milling slick and outcrop	~1 mile, northeast
33-003235	Prehistoric Milling slicks and outcrops	~1 mile, northeast
33-003323	Prehistoric Milling slicks	~1/4-mile, east
33-004218	Prehistoric Milling slicks	~3/4-mile, south
33-005296	Prehistoric campsite and quarry consisting of lithic tools, lithic debitage, and a fire hearth	~1/2-mile, south
33-011606	Prehistoric Milling slick	~1/4-mile, east
33-013110	Prehistoric Milling slick	~1/4-mile, south

Paleontological Resources

On March 27, 2017 the Western Science Center performed a paleontological records search to locate fossil localities within and in the vicinity of the proposed Project. No fossil localities were documented within the Project, but numerous fossil localities were documented within 10 miles of the Project (Radford 2017). This includes the fossil material recovered from the El Casco Project, 6 miles northeast of the Project, which produced over 15,000 Pleistocene-age specimens, including ground sloth, sabre-tooth cat, deer, horse, panther, llama, rodent, frog, salamander, and plant (The Press-Enterprise 2010). Multiple fossil localities (400+) are documented in Pleistocene-age deposits in Riverside County (UCMP, PBDB), but few are indicated to occur near the Project. Two fossil localities in the city of Beaumont (~12 miles away) have produced remains of bison and horse, while a nearer locality in Lakeview Hot Springs only three miles away produced remains of mammoth, horse, and other artiodactyls (Jefferson 1991).

Paleontological Sensitivity

Based upon the results from the paleontological records searches and the pedological processes that formed the deposits, the various deposits were ranked according to how sensitive each is to contain significant fossil localities. Holocene-age alluvial valley deposits are too young to have accumulated or fossilized biologic material, and are assigned a low sensitivity. However, these alluvial valley deposits transition with depth into older Pleistocene-age deposits of higher sensitivity, and are assigned a high sensitivity at depth. Due to their potential to contain significant fossils, very old alluvial fan deposits are assigned a high paleontological sensitivity (Table 3 below) Heterogeneous granitic rocks, being igneous in origin, have no potential to contain fossil resources, and are assigned low paleontological sensitivity, see Figure 5.

Table 3: Paleontological Sensitivity by Age and Geologic Unit

Age	Geologic Unit	Fossils Present	Paleontological Sensitivity
Holocene	Young alluvial valley deposits (Qyv_a)	None	Low to High
Pleistocene	Very old alluvial fan deposits ($Qvof_a$)	Ground sloth, sabre-tooth cat, deer, horse, panther, llama, rodent, frog, salamander, plant[1]	High
Cretaceous	Heterogeneous granitic rocks (Khg)	None	None

Additional Research

Historic and Modern Aerial Photograph Analysis

A historic aerial photograph research (NETR 2017) indicates the southernmost boundary of the Project adjacent to Mt. Russell likely has a high sensitivity for cultural resources due to the presence of undisturbed granite outcrops and drainages. A comparison with aerial photographs from 1978 show that this area has received little, if any, modification by earth moving activity (NETR 2017). Aerial photographs from later in time show that the areas surrounding the Project have been affected by construction between 1978 and 1996. In 1978 there are more bedrock outcrops present as well as hills, but by 1996, most of these areas were graded and modified by construction. Google Earth (2017) was used to view the present golf course and surrounding topography identify areas of high sensitivity for cultural resources. The southern edge of the Mountain course where it abuts the foothills of Mt. Russell, a granite outcrop in the extreme southwest end of the Mountain Course, and a granite outcrop in the approximate center of the Valley Course were identified as areas of high sensitivity for cultural resources.

Soils Analysis

The majority of soils in the project area are either alluvium derived from granite or derived from residuum. The most prevalent soils (n=26.4%) are Hanford Series and these are very deep soils that formed in moderately coarse textured alluvium dominantly from granite. Hanford soils are on stream bottoms, floodplains and alluvial fans (NRCS 2017b). The Greenfield Series (n=22.5%) consists of deep, well drained soils that formed in moderately coarse and coarse textured alluvium derived from granitic and mixed rock sources. Greenfield soils are on alluvial fans and terraces and have slopes of 0 to 30 percent (NRCS 2017c). Also present are Cieneba Series (n=8.1%) which is shallow to very shallow and formed in residuum weathered from granitic rock. These soils characterize the higher elevation areas found in the southern and portions of the central area of the project (NRCS 2017a). Lesser amounts of various other soil series are present but not significant. The overall soils discussion has been limited due to the heavily disturbed nature of the Project, and these disturbances have likely compromised the contextual integrity of the Project soils.

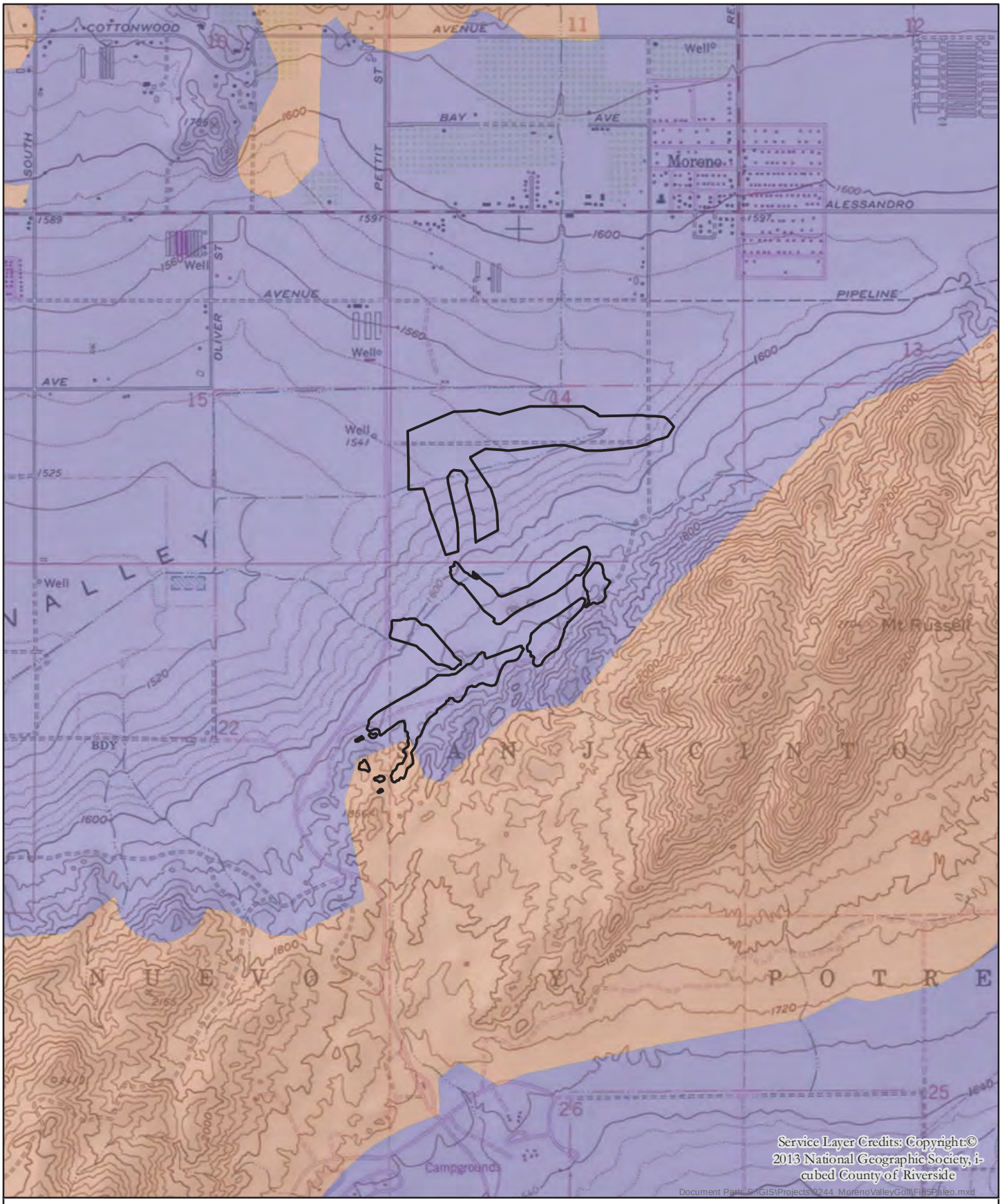

Figure 5- Paleontological Sensitivity
Moreno Valley Golf Course,
City of Moreno Valley, County of Riverside

DUKE CRM

Project

Classification

High B

Low

0 2,000 4,000 Feet

1 inch = 2,000 feet 1:24,000

N

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Field Survey

The Phase I archaeological field survey of the Project area was conducted on November 13th and 14th, 2017 by Matthew Stever, M.A., R.P.A., and Sarah Nava, B.A. of DUKE CRM. The Project is an abandoned golf course and due to this previous disturbance, reconnaissance survey was conducted using a four wheel drive vehicle to assess this level of disturbance and surface visibility across the Project. Intensive pedestrian survey transects varied from 10 to 40 meters depending on topography and surface visibility within the portions of the Project that appeared only minimally disturbed. Granite outcrops and a 20 meter buffer around them were subjected to 10 meter transects, while heavily disturbed areas such as fairways with good surface visibility were subjected to 40 meter transects.

Intensive pedestrian survey focused on areas that had comparatively minimal disturbance and reasonable surface visibility. Ground visibility within the Mountain Course varied but averaged around 50%, see Figure 6. Ground visibility within the Valley Course was less on average with only 30%, Figure 7. Areas with no ground surface visibility due to vegetative cover were excluded from pedestrian survey. All areas surveyed contained surficial modern refuse as well as fill soils due to previous construction. Two locations within the Valley Course had erosional damage that allowed for observation of soils profiles to approximately four feet deep, see Figures 8 and 9. Observed soils within these erosional features appeared homogenous in color and texture, with modern inclusions of cement, tile, and metal cans, indicating they are fill soils. Overall, approximately 95% of the Project area appears to be heavily disturbed by prior earth moving activity. Extensive grading and other earth moving activity related to golf course construction has likely removed or mixed these soils and their potential to contain cultural resources has been heavily compromised. No previously unrecorded cultural or paleontological resources were observed during the survey efforts.

Figure 6: Mountain Course overview , view east.

Figure 7: Valley Course overview, view west.

Figure 8: Valley Course overview, erosion and soil profile, view east.

Figure 9: Valley Course, erosion and soil profile, view west. Note cement roofing tile in the soil profile.

The field crew attempted to relocate previously recorded sites P-33-002963 and P-33-002964 within the Reserve at Rancho Belago Project boundary, see Figures 10 and 11. Each site was recorded as a single milling slick on a boulder, and although there are boulders in the respective site locations, none had milling slicks visible and the sites could not be relocated. The sites were destroyed by earth moving activity during golf course construction, or the host boulders were moved from their original locations, or the slicks were turned to the bottom of the boulders, out of view.

Figure 10: Site 33-002963 overview east, trees in center are approximate site location.

Figure 11: Site 33-002964, overview northeast, boulder in center is approximate site location.

IMPACTS ANALYSIS AND RECOMMENDATIONS

This section addresses the Project's potential to impact cultural and paleontological resources. The impacts are based on our review of the Project *Moreno Valley Ranch Golf Course Master Improvement Plan*, dated August 7th, 2017. If changes are made to the Project or if the level of planned disturbance changes, the recommendations herein may be subject to change. Assessing the potential for impacts is made difficult by the fact that the project was previously developed as a golf course; however, the level of prior ground disturbance is not known.

Cultural Resources

Impacts to cultural resources are generally considered to be direct (e.g. destruction or demolition of a resource) or indirect (e.g. visual, audible, or cumulative changes to the setting). Under CEQA cultural resources are evaluated for significance and eligibility for the California Register. If a resource is considered eligible for the California Register it is considered a historical resource under CEQA. For the purposes of CEQA, impacts are only considered significant for historical resources.

DUKE CRM conducted a records search field survey and supplemental research for archaeological and historical resources. The results of the record search indicate there are no previously recorded cultural resources within the project boundary. Sites 33-002963 and 33-002694 were located within the Reserve at Rancho Belago Project, which is effectively surrounded by the current effort. Each was recorded as a single milling slick on a single boulder, and the current effort attempted to relocate them due to their proximity to the Project. Neither site could be relocated during the field survey, and both are assumed destroyed by prior earth moving activity. Based on the lack of recorded cultural resources within the Project, and the amount of prior earth moving activity related to the original construction of the golf course, DUKE CRM recommends that no archaeological and/or historical resources are likely to be impacted by the Project.

Due to the low potential to impact cultural resources, DUKE CRM does not recommend archaeological monitoring of the Project. If previously unidentified cultural materials are un-earthed during ground

disturbing activity, work shall be halted in that area until a qualified archaeologist can assess the significance of the find.

Paleontological Resources

Our research indicates that there is a high sensitivity for paleontological resources at depth in the Pleistocene-age deposits that underlie almost the entire Project. Therefore, significant and unique paleontological resources may be impacted by the Project during deep earth disturbing activities. These impacts would be considered potentially significant. In order to reduce the potential for impacts to paleontological resources to a level that is less than significant under CEQA paleontological monitoring is recommended during ground disturbance associated with the Project.

Paleontological Monitoring- A paleontological monitor shall be present to observe ground disturbing activities within the Project property. The monitor shall work under the direct supervision of a qualified paleontologist (B.S. /B.A. in geology, or related discipline with an emphasis in paleontology and demonstrated experience and competence in paleontological research, fieldwork, reporting, and curation).

1. The qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.
2. Paleontological monitoring shall start at part-time. If no paleontological resources are discovered after half of the ground disturbance has occurred, monitoring can be reduced to spot-checking.
3. The monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of a paleontological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.
5. In consultation with the qualified paleontologist the monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly removed and the area cleared.
6. If the discovery is significant the qualified paleontologist shall notify the applicant and the City immediately.
7. In consultation with the applicant, the qualified paleontologist shall develop a plan of mitigation which will likely include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

If archaeological resources are discovered during construction, a qualified archaeologist shall be retained to assess the nature and significance of the discovery. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. In addition, according to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and unauthorized disturbance of Native American cemeteries is a felony (Section 7052).

If the proposed Project changes additional efforts may be necessary.

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Appendix A

Resumes

DUKE CRM
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Curt Duke

President/Archaeologist

Expertise

Cultural Resources Management
California Prehistory
Section 106 Compliance
CEQA Compliance
Native American Consultation

Education

CSU, Fullerton, M.A., Anth, 2006
SDSU, Grad Studies, Anth, 1996/97
UC Santa Cruz, B.A., Anth, 1994

Professional Registrations

RPA, No. 15969
County of Riverside (No. 151)
County of Orange

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Pacific Coast Archaeological Society
Assoc. of Environmental Professionals

Professional Experience

President/Archaeologist, DUKE CRM, April 2011 to present.
Archaeologist/Principal, LSA Associates, 1997-2011.
Archaeological Technician, SRI, 1997.
Archaeological Technician, Petra Resources, 1997.
Archaeological Technician, KEA Environmental, 1997.
Archaeological Technician, Keith Companies, 1997.
Archaeological Technician, KEA Environmental, 1997.
Archaeological/Paleontological Tech., LSA Associates, 1996.
Archaeological/Paleontological Tech., Petra Resources, 1996.
Archaeological Technician, Affinis Environmental Services, 1996.
Archaeological Technician, KEA Environmental, 1996.
Archaeological Tech., Macko Archaeological Inc., 1995 to 1996.
Archaeological Technician, Heritage Resource Consultants, 1995.
Archaeological Technician, Chambers Group, 1995.
Archaeological Tech./Teachers Assistant, Cabrillo College, 1994
Anthropological Laboratory Technician, UC Santa Cruz, 1994.

Selected Project Experience

Skyridge Residential, Mission Viejo, 2011-present. Role: Project Manager/Principal Investigator. Mr. Duke conducted a Phase II test excavation of prehistoric archaeological site CA-ORA-507. This work included research, preparation of a research design/work plan, excavation, lab analysis, Native American consultation, and preparing a detailed technical report. The report was reviewed by the City, ACOE, and SHPO. Archaeological and paleontological monitoring is on-going. Employer: DUKE CRM.

Vila Borba, Chino Hills, 2013-present. Role: Project Manager/Principal Investigator. DUKE CRM conducted a Phase II excavation of archaeological sites CA-SBR-5285 and SBR-7972/H. This work included research, preparation of a research design/work plan, excavation, lab analysis, Native American consultation, and preparing a detailed technical report. The report was reviewed by the City, ACOE, and SHPO. DUKE CRM also provided archaeological and paleontological monitoring working with Native Americans, the City and the applicant. Employer: DUKE CRM.

Lago Los Serranos, Chino Hills, 2014. Role: Project Manager/ Principal Investigator. DUKE CRM provided archaeological and paleontological monitoring. DUKE CRM found limited and non-significant fossil resources per CEQA. DUKE CRM complied with the mitigation monitoring conditions. Employer: DUKE CRM.

Olive View Medical Center, San Fernando, 2012-present. Mr. Duke's role on this project was Principal Investigator. Under contract to the City of Los Angeles and Chattel Architecture, Planning, and Preservation, Inc. DUKE CRM prepared a Phase I Archaeological Survey Report and conducted archaeological monitoring. For the Phase I Mr. Duke conducted the records search, field survey and report preparation. He also led the consultation efforts with Native Americans on behalf of the County and FEMA. The results of the survey were negative, meaning that no archaeological resources were identified and there were no delays to the project. However, SHPO recommended archaeological monitoring due to a perceived high potential for historical archaeological resources. Employer: DUKECRM.

6th Street Viaduct Replacement Project, City of Los Angeles, 2013. DUKE CRM is under contract to GPA Environmental, Inc. and the City to provide archaeological and paleontological support for the construction phase of this project. The viaduct is comprised of two bridges: 1) a bridge over the Los Angeles River and the UPRR, BNSF, Metrolink, and Metro Railroads; and 2) a bridge over U.S. Highway 101. Mr. Duke's role on this project is Project Manager and Principal Investigator for archaeology. DUKE CRM prepared an Environmentally Sensitive Area (ESA) Action Plan for archaeology and worked with Bruce Lander who prepared a Paleontological Mitigation Plan (PMP). These documents will be used to specify how archaeological and paleontological resources shall be treated during construction of this multi-year, multi-phase project. DUKE CRM will be responsible for overseeing the implementation of the archaeological and paleontological monitoring program on behalf of the City to ensure that mitigation measures are adhered to. Employer: DUKECRM.

AT&T Mobility, On-Call, 2011-present. Role: Project Manager/ Principal Investigator. Mr. Duke conducts records searches, field surveys and prepares reports for various wireless facilities throughout southern and central California. Employer: DUKECRM.

Sepulveda Boulevard Bridge Widening, Manhattan Beach, 2012-13. Mr. Duke's role on this project is Project Manager/Principal Investigator. Under contract to the City of Manhattan Beach and GPA Environmental, Inc. Mr. Duke is preparing a Phase I Archaeological Survey Report. He conducted the field survey, records search, and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Caltrans is the lead agency for NEPA; the City is the lead agency for CEQA. Employer: DUKECRM.

Lamb School Residential Subdivision, Huntington Beach, 2013. Mr. Duke is the Project Manager/Principal Archaeologist for this project. DUKE CRM is conducting the cultural resources mitigation measures required by the City. This includes historical documentation of the school building and site, and archaeological and paleontological construction monitoring. This work is on-going. The DPR site record will be submitted to the South Central Coastal Information Center and the monitoring report will be submitted to the City upon completion of construction. Employer: DUKECRM.

Wardlow School Residential Subdivision, Huntington Beach, 2013. Mr. Duke is the Project Manager/Principal Archaeologist for this project. DUKE CRM is conducting the cultural resources mitigation measures required by the City. This includes historical documentation of the school building and site, and archaeological and paleontological construction monitoring. This work is on-going. The DPR site record will be submitted to the South Central Coastal Information Center and the monitoring report will be submitted to the City upon completion of construction. Employer: DUKECRM.

Scalzo Property, San Juan Capistrano, 2012. Role: Project Manager/Principal Investigator. Mr. Duke conducted a due diligence study for this 16-acre property. This work included research, site visit, and brief letter report. Employer: DUKECRM.

1st Street over Glendale Boulevard, Los Angeles, 2012. Mr. Duke's role on this project was Project Manager/Principal Investigator. Under contract to the City of Los Angeles and GPA Environmental, Inc. Mr. Duke prepared a Phase I Archaeological Survey Report and Historic Property Survey Report. Mr. Duke was the project manager for this project. He conducted the field survey and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: DUKECRM.

San Fernando Road Widening at Balboa Road, Los Angeles, 2012. Role: Project Manager/Principal Investigator. Under contract to the City of Los Angeles and GPA Environmental, Inc. Mr. Duke prepared a Phase I Archaeological Survey Report and Historic Property Survey Report. Mr. Duke was the project manager for this project. He conducted the research, field survey, and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. DUKE CRM will be preparing the Paleontological Identification Report. Employer: DUKE CRM.

Mobilitie, On-Call, 2011-12. Role: Project Manager/Principal Investigator. Mr. Duke conducts records searches, field surveys and prepares reports for various wireless facilities throughout southern and central California. Employer: DUKECRM.

California Avenue Widening, Long Beach, 2011. Role: Project Manager/Principal Investigator. Under contract to the City of Long Beach and GPA Mr. Duke prepared a Phase I Archaeological Survey Report. Mr. Duke was the project manager for this project. He conducted the research, field survey, and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: DUKECRM.

Palomar Mountain Fuels Modification, 2011. Role: Project Manager/ Principal Investigator. Under contract to the Palomar Mountain Fire Safe Council, Mr. Duke conducted a Phase I archaeological survey of 11.5 acres. The survey report was completed quickly and was accepted by the Palomar Mountain Fire Safe Council and the BLM without any comments. Employer: DUKE CRM.

Mid County Parkway, Riverside County, CA, 2004-2011. Role: Task Manager/ Principal Investigator. The studies for the Mid County Parkway project included a 32-mile corridor (from Interstate 15 to State Route 79) in western Riverside County. The archaeological survey covered 3,680 acres and identified 91 archaeological sites. An extended Phase I survey (limited excavation) was conducted at 79 of the sites. Ultimately Phase II excavations were conducted at eight of the sites. Four archaeological sites were determined eligible for the National Register. A built environment historic resources survey was conducted and one historic dairy was determined eligible for the National Register. This project included extensive consultation with Indian Tribes. All work was conducted in compliance with Section 106 of the NHPA, NEPA, and CEQA. FHWA, Caltrans, and RCTC were the lead agencies and Jacobs Engineering was the lead engineering firm under contract to RCTC. Employer: LSA Associates.

Colton Crossing Rail-to-Rail Grade Separation, Colton, CA, 2008-2011. Role: Project Manager/ Principal Investigator. The Colton Crossing project involved the separation of the at-grade crossing of the UP and BNSF railroads. The Colton Crossing is a historically significant railroad crossing where a stand-off between the SP and California Southern railroads took place. Despite SP's efforts the California Southern railroad was granted access across SP's right-of-way. Research showed that the project's APE contained

numerous historic buildings and was very active in historic times. Under Mr. Duke's direction an archaeological survey and an extended Phase I survey (limited excavation) were conducted. Sixteen historical archaeological sites were discovered; these included building remnants and refuse deposits. None of the archaeological sites were determined eligible for the National Register. A built environment historic resources survey evaluated the UP and BNSF railroads, the SP passenger depot, the American Railway Express Company building, and the historic South Colton neighborhood; none of which were determined eligible for the National Register. All work was conducted in compliance with Section 106 of the NHPA, NEPA, and CEQA. FHWA and Caltrans were the lead agencies working in cooperation with SANBAG, FRA, UP, and BNSF. HDR was the lead engineering firm under contract to SANBAG. Employer: LSA Associates.

I-15/I-215 Interchange Project, Devore, San Bernardino County, 2008-11. Role: Task Manager. Mr. Duke was the cultural resources task manager. Under Mr. Duke's direction an ASR, HRER, and HPSR were prepared. An archaeological site was recorded immediately adjacent to the project boundaries, within the APE. Mr. Duke and his staff worked closely with the Caltrans archaeologist to record and evaluate this site for the National Register without conducting a Phase II excavation. In doing this, the client saved thousands of dollars and almost one year on their schedule. His staff also evaluated a portion of historic Route 66 and several related historic buildings. Employer: LSA Associates.

24th Street Improvements, City of Bakersfield, 2008-2011. Mr. Duke's role on this project was Cultural Resources Task Manager/Principal Investigator. Under contract to the City of Bakersfield and Parsons Brinckerhoff, Inc. Mr. Duke prepared the Historic Property Survey Report. He managed a team of archaeologists, paleontologists, and historians to complete the HRER, ASR, PIR/PER, and APE map. He conducted the archaeological field survey. His team identified 93 historic period buildings/structures, including two historic districts. Employer: LSA Associates.

Alta East Wind Project, Mojave, Kern County, CA 2010-11. CH2M HILL, Inc., requested a paleontological resources assessment for the Alta East Wind Project northwest of the City of Mojave in southeastern Kern County, California. The project includes developing pads for wind generation turbines, turbine access and service roads, management facilities, and a transmission line running from the center of the project south to connect with an existing distribution grid. The study area includes five sections of land that contain sediments that have potential for paleontological resources. The early Pliocene Horned Toad Formation contains the late Hemphillian Warren Local Fauna, with 24 fossil mammalian taxa. The literature review identified 34 fossil localities in the Horned Toad Formation, 12 of which were verified within project boundaries. The field survey located an additional 69 localities within project boundaries. Because of the potential for direct impacts to all paleontological resource localities, mitigation procedures are summarized. A project-specific paleontological resources impact mitigation program (PRIMP), including fossil salvage by qualified paleontologists, was recommended to accompany development of this project. Employer: LSA Associates.

I-215/SR-74 Interchange Improvements Project, Perris: Paleontological Mitigation Monitoring, 2010-11. Mr. Duke was the Task Manager for this project. The scope of work included paleontological monitoring during grading operations and environmental awareness (paleontological focus) training. He was responsible for working with the qualified paleontologist and coordinating field assignments for this project. Mr. Duke and his staff worked a communication system with the grading contractor that allowed for minimal field effort while achieving compliance. This allowed for savings to the overall budget. Employer: LSA Associates.

Aliso Canyon Park Improvements, Los Angeles, 2010. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke prepared a Phase I Archaeological Survey Report. Mr. Duke was the project manager and principal-in-charge for this project. He oversaw the research, field survey, and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: LSA Associates.

Five Winds Ranch Conservation/Mitigation Bank, Yucaipa, San Bernardino County, 2010. Mr. Duke served as the Principal-in-Charge for this project. He coordinated with staff biologists and archaeologists to complete a general biological survey, a waters/wetland delineation, a cultural resources survey, a Mitigation Banking Feasibility Study, a draft and final Mitigation Banking Prospectus, and a Bank Enabling Instrument. Several cultural resources were identified, both historic and prehistoric in nature. These resources were not impacted and therefore no additional work was necessary. Employer: LSA Associates.

Mammoth Lakes Parks and Recreation and Trail System Master Plan, 2010. Mr. Duke prepared a cultural resources assessment for the Draft Parks and Recreation Master Plan (PRMP) and the Draft Trail System Master Plan (TSMP) EIRs. He conducted a records search, site visits, and prepared a report documenting the effort and making management recommendations. The cultural resource assessment was completed pursuant to California Environmental Quality Act (CEQA). Employer: LSA Associates.

Rancho Vista Boulevard (Ave. P) Grade Separation Project, Palmdale, 2007-10. Mr. Duke's role was Principal Archaeologist, providing project supervision and regulatory expertise. Under contract to the City of Palmdale and LAN Engineering, Mr. Duke's team conducted a records search and field survey, and prepared an Archaeological Survey Report and Historic Properties Survey Report which was reviewed and approved by Caltrans. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: LSA Associates.

California Valley Solar Ranch, California Valley, San Luis Obispo County, 2009-10. Role: Principal-in-Charge. California Valley Solar Ranch is a 4,000-acre project located on the Carrizo Plain in eastern San Luis Obispo County. Mr. Duke was the Principal-in-Charge for this project. His team conducted a records search, field survey, Native American scoping, and prepared an archaeological survey report. His team identified, recorded, and evaluated several historical archaeological sites. Employer: LSA Associates.

Melrose Triangle, West Hollywood, 2009-10. Under contract to the City of West Hollywood Mr. Duke oversaw the preparation of a historic resources survey which included research, field surveys, and preparation of a historic context and survey report. Mr. Duke acted as the principal-in-charge for this project. Employer: LSA Associates.

Hollyhock House, Barnsdall Park, Los Angeles, 2009-10. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke oversaw the preparation of a supplemental historic structure report which included research, field inspection, and preparation of a report. Mr. Duke acted as the principal-in-charge for this project. Employer: LSA Associates.

Delano-Alpaugh Water Reclamation Pipeline, Kern and Tulare Counties, 2006-2009. Mr. Duke prepared a cultural resources assessment study for the Delano-Alpaugh Water Reclamation Pipeline (DAWRP) while working for a previous employer. His role was cultural resources task manager and principal investigator. The project was approximately 11 miles Long. The research and field survey were conducted to determine whether the DAWRP project would result in impacts to any historical resources and/or unique archaeological resources. The cultural resources assessment was completed pursuant to CEQA and Section 106 of the NHPA. His team completed a cultural resources records search and a field survey. The project was immediately adjacent to Allensworth State Historic Park and National Register Historic District. The field survey identified two historical archaeological sites adjacent to the project alignment. Employer: LSA Associates.

Professional Hospital Supply, Temecula, 2008. Mr. Duke and his staff were retained by the Garrett Group to conduct an Archaeological and Paleontological Monitoring Program for the 32-acre Professional Hospital Supply Project in the City of Temecula. The construction monitoring program is the result of an agreement between the City of Temecula and the Pechanga Band of Mission Indians due to the presence of a portion of an archaeological site near the project boundaries. No cultural or paleontological resources were identified. Employer: LSA Associates.

Lancaster Highlands Project, Meridian Land Development Company, 2007. Mr. Duke oversaw the completion of a cultural resource assessment for the 1,891-acre project. All work was completed for Meridian Land Development Company. Tasks included a records search and field survey for archaeology and paleontology. Employer: LSA Associates.

Temecula 32, Archaeological Phase II Testing, 2007. Mr. Duke and his staff were retained by the Garrett Group to conduct an intensive pedestrian survey and test excavation in and around the reported location of a prehistoric lithic scatter. However, no remnants associated with the site were identified on or beneath the surface. Therefore, Mr. Duke recommended that this site should not be considered "a unique archaeological resource" or "historical resource" under CEQA. LSA worked with the Pechanga Band of Luiseño Indians and they monitored all field activities. Employer: LSA Associates.

I-15/SR-79 Interchange Project, Riverside County, 2006-10. Role: Task Manager. Mr. Duke was the cultural resources task manager. This project is located on top of a significant, National Register-listed archaeological site that is also very sacred to the Luiseño Band of Indians. Under Mr. Duke's direction an ASR, ESA Action Plan, and HPSR were prepared. Due to the sensitivity surrounding the sacred site Mr. Duke and his staff consulted regularly with the Caltrans archaeologist, Native American Coordinator, and Native Americans. Employer: LSA Associates.

Residence "A," Barnsdall Park, Los Angeles, 2009. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke oversaw the preparation of a historic structure report which included research, field inspection, and preparation of a report. Mr. Duke acted as the principal-in-charge for this project**.** Employer: LSA Associates**.**

Westlake Historic Resources Survey, Los Angeles, 2008-09. Under contract to the Community Redevelopment Agency of Los Angeles (CRA LA) and Chattel Architecture Planning and Preservation, Inc. Mr. Duke oversaw the preparation of a historic resources survey which included research, field surveys, and preparation of a historic context and survey report. Mr. Duke acted as the principal-in-charge for this project. Employer: LSA Associates.

Needles Highway Improvement Projects, County of San Bernardino, 2004-08. Role: Cultural Resources Task Manager. To complete this project Mr. Duke oversaw the completion of archaeological and paleontological research and field surveys along Needles Highway between the City of Needles and Aha Macav Parkway. During the study a total of 45 cultural resources identified; 14 were previously recorded and 31 were newly recorded. These resources include 33 prehistoric cultural resources, four historic cultural resources, two cultural resources with historic and prehistoric components, and six cultural resources of unknown age. All work was completed in compliance with CEQA, NEPA, and NHPA. Employer: LSA Associates

Superstition Solar I Project, Salton Sea, Imperial County, 2008. Role: Principal-in-Charge. Superstition Solar I is a 5,600-acre project located on BLM Land. Mr. Duke was the Principal-in-Charge for this project. His team conducted a records search, reconnaissance survey, Native American scoping, and prepared a Class III Intensive Survey Research Design. Employer: LSA Associates.

Thomas Mountain Fuels Reduction Project, near Idyllwild, CA, 2008. Mr. Duke and his colleague Virginia Austermann worked with the San Bernardino National Forest (SBNF) to complete a cultural resources assessment of the proposed 10,465-acre Thomas Mountain Fuels Reduction project located in the San Jacinto Ranger District of the San Bernardino National Forest, Riverside County, California. The proposed project was an undertaking that could have affected heritage resources, and the archaeological survey of the area of potential affect (APE) was conducted in compliance with Section 36 CFR Part 800 of Section 106 of the NHPA. The report presented the results of the records search, numerous field surveys completed by others from 1980 through 2007, and Native American consultation. In total nineteen cultural resources were documented and considered for planning purposes. Working with the SBNF archaeologist,

our team applied the 1996 *Programmatic Agreement for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region.* Mr. Duke's role was Principal-in-Charge overseeing all contract negotiations and providing quality control. Employer: LSA Associates

Magnolia Boulevard Widening, Los Angeles, 2008. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke prepared a Phase I Archaeological Survey Report. Mr. Duke was the project manager and principal-in-charge for this project. He oversaw the research, field survey, and report preparation. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: LSA Associates

South District Maintenance Yard, Los Angeles, 2008. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke oversaw the preparation of a historic resources survey which included research, field surveys, and preparation of a historic context and survey report. Mr. Duke acted as the principal-in-charge for this project. Employer: LSA Associates

Fire Station 82, Los Angeles, 2008. Under contract to the City of Los Angeles, Bureau of Engineering Mr. Duke oversaw the preparation prepared of a historic resources survey which included research, field surveys, and preparation of a historic context and survey report. Mr. Duke acted as the principal-in-charge for this project. Employer: LSA Associates

Chuckwalla Solar I Project, Desert Center, Riverside County, 2007-08. Chuckwalla Solar I is a 4,000-acre project located on BLM Land. Mr. Duke was the Principal-in-Charge for this project. His team conducted a records search, intensive field survey, Native American scoping, and prepared a Class III Intensive Survey Report. Employer: LSA Associates

McSweeny Farms, Hemet, CA, 2004-2008. Mr. Duke directed all cultural resources efforts for the McSweeny Farms project. He conducted third-party review of prior Phase I archaeological survey and extended Phase I survey. His team conducted Phase II and geoarchaeological excavations at several sites throughout the project, one of which is a large, regional prehistoric village site. Mr. Duke worked with SunCal, the City of Hemet, the Army Corps of Engineers (ACOE), and local Indian Tribes to balance the needs of each party. In addition, his team provided archaeological and paleontological monitoring for the project. He worked with Tribal monitors to document important archaeological sites, while maintaining the overall project schedule. Employer: LSA Associates

Hacienda at Fairview Valley Specific Plan, Apple Valley, Mojave Desert, CA, 2007-08. The Fairview Valley Specific Plan project is located near the Town of Apple Valley in the high desert. Under Mr. Duke's direction a team of archaeologists conducted a records search, field survey, and prepared a technical report for the County of San Bernardino. The team identified 73 cultural resources and determined that only 15 of these resources are considered significant under CEQA. The team worked with the project applicant and design team to avoid or mitigate impacts to all of the significant cultural resources. Employer: LSA Associates.

Majestic Hills Specific Plan, Hesperia, Mojave Desert, CA, 2006-07. The Majestic Hills Specific Plan project is located in the City of Hesperia in the high desert. Under Mr. Duke's direction a team of archaeologists conducted a records search, field survey, and prepared a technical report for the City. The team identified 32 cultural resources and determined that 11 of these resources are considered significant under CEQA. The team worked with the project applicant and design team to avoid or mitigate impacts to all of the significant cultural resources. Employer: LSA Associates.

Temecula Education Center, 2006. Mr. Duke and his staff were retained by the City of Temecula to conduct an Archaeological Monitoring Program for the Temecula Education Center Project. The construction monitoring program for the 40-acre site is the result of an agreement between the City of

Temecula and the Pechanga Band of Mission Indians due to the presence of a portion of site CA-RIV-237 within the project boundaries. Minimal archaeological data were recovered.

Mesquite Regional Landfill, Imperial County, CA, 2004-2006. Under contract to the Sanitary Districts of Los Angeles County, Mr. Duke conducted a Class III Data Recovery project for ten Native American cultural resources within the boundaries of the proposed Mesquite Regional Landfill (MRL) Project, located in Imperial County, California. This effort was combined with a supplementary cultural resource reconnaissance of adjacent Bureau of Land Management (BLM) land to identify the extension of these resources beyond the project boundaries. Employer: LSA Associates.

20th Street West Extension, Palmdale, 2006. Mr. Duke's role was Principal Archaeologist, providing project supervision and regulatory expertise. Dr. Lange led the field survey and prepared the report. Under contract to the City of Palmdale and LAN Engineering, Mr. Duke and his team conducted a records search and field survey, and prepared an Archaeological Survey Report. The results of the assessment were negative, meaning that no archaeological resources were identified and there were no delays to the project. Employer: LSA Associates.

Southern California Edison, Southern and Central, CA, 2003-2005. Mr. Duke worked with SCE on its deteriorating poles program. As poles are deteriorating, SCE replaces them with new poles. Prior to pole replacement archaeological surveys were conducted of each pole location. The majority of this work has been conducted on federal lands. Under his direction archaeologists have surveyed over 2,000 pole locations in the Inyo National Forest, Angeles National Forest, San Bernardino National Forest, Sequoia National Forest, and under the jurisdiction of California and Arizona offices of the Bureau of Land Management (5 different field offices). In this process, his team recorded more than 35 archaeological resources ranging from isolated chipped stone to historic mining sites. His historian evaluated the Catalina Tile Company manufacturing plant on Catalina Island for the California Register of Historical Resources. Mr. Duke worked closely with SCE staff and various Federal agencies to ensure a quick review and approval of the cultural resources efforts. Employer: LSA Associates

Community and Environmental Transportation Acceptability Process (CETAP), Riverside, CA, 1999-2001. Mr. Duke participated in a reconnaissance survey that recorded over 500 prehistoric and historic resources. The results of the cultural resource efforts were reported in a HPSR, HRER and an ASR. Mr. Duke assisted in preparing the reports and provided management for the cultural resources aspect of this project. Employer: LSA Associates

Los Coches Creek Elementary School, near Alpine, CA, 2003–2006. Mr. Duke conducted a Phase I archaeological survey and oversaw subsequent Phase II test excavations. All work was conducted under the authority of the U.S. Army Corps of Engineers (ACOE). Mr. Duke worked with the El Cajon Union School District and the ACOE to avoid impacts to a majority of the cultural resources on site. Employer: LSA Associates

Whipple-Havasu Circuit, SCE, near Lake Havasu, CA, 2003. Role: Project Manager/Principal Investigator. Mr. Duke's team conducted an archaeological survey of 249 poles along 25 miles of land located on the Chemehuevi Indian Reservation and BLM lands. The project was located within the boundaries of the Desert Training Center (DTC); however, no DTC cultural resources were observed. Seven cultural resources were identified: four prehistoric sites, two prehistoric isolates, and one 1920s historic camp. All work was completed in compliance with NHPA and NEPA. Employer: LSA Associates

McCoy Circuit, SCE, Near Blythe, CA, 2003. Role: Project Manager/Principal Investigator. Mr. Duke's team conducted an archaeological survey of 388 poles along 19 miles of land located on BLM lands. The project was located within the boundaries of the Desert Training Center (DTC); however, no DTC cultural resources were observed. Four cultural resources were identified within or adjacent to the project boundaries:

one historic/prehistoric site with an intaglio, two historic sites, and one prehistoric site. All work was completed in compliance with NHPA and NEPA. Employer: LSA Associates.

Orchard Hills (Planning Area 1), Irvine, 2002. Under contract to the Irvine Company, Mr. Duke conducted Phase II archaeological excavation on several sites. Mr. Duke served as the field director and co-Principal Investigator. This work was completed by Mr. Duke while with another employer.

Muddy Canyon Archaeological Project (Crystal Cove-Phase IV), Newport Coast, Orange County, 1999-02. Mr. Duke served as field crew and cartographer for the Phase II test excavations and field director and cartographer for Phase III data recovery excavations. Mr. Duke supervised up to 15 archaeologists excavating at eight prehistoric archaeological sites.

Fort Irwin, National Training Center, CA, 1999. Role: Crew Chief/Teaching Assistant. Mr. Duke assisted in a Field School for CSU, Fullerton. He instructed students in proper survey techniques, artifact identification, and site record preparation. In addition, Mr. Duke co-authored the survey report.

San Nicolas Island, Naval Base Ventura County, CA, 1997. Role: Field crew. Mr. Duke was part of an excavation and lab crew conducting test excavations at various archaeological sites. Laboratory sorting was conducted in the evenings. Employer: Petra Resources

Salton Sea Navy Test Base, CA, 1996-97. Role: Field crew. Mr. Duke was part of a survey crew conducting intensive surveys on the west shore of the Salton Sea. Excavation was conducted at sites that appeared to be significant. Employer: KEA Environmental

Chocolate Mountains Gunnery Range, CA, 1996. Role: Field crew. Mr. Duke was part of a survey crew conducting intensive surveys in the Chocolate Mountains. Employer: KEA Environmental

Other Projects

Stadium Arco Station, San Diego, 2003-04
Cingular/PBMS, ~2,000 Facilities, Southern Calif., Nevada, and Arizona, 1997-2001
AT&T Wireless, ~1,000 Facilities, Southern California, 1998-2001
Bonita Canyon Sports Park, Newport Beach, 1997
Hicks Canyon Retention Basin, Irvine, CA, 1996
Testing of Phase III, Las Trancas Canyon, Newport Coast, 1995
Data Recovery of Site CA-ORA-64, Newport Beach, 1995

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

DUKE CRM
20371 Lake Forest Drive, A-
Lake Forest
California 92630
949-356-6660
www.dukecrm.com#

Benjamin Scherzer

Paleontologist

Expertise

Paleontological Resources Management
Fossil excavation
Fossil preparation
Stratigraphy
Natural gas mudlogging
Directional drilling

Education

M.S., Earth Science, 2008, MSU, Bozeman, MT
B.A., Geology/Math, 2002, Earlham College, IN

Professional Registrations

Paleontologist, County of Orange
Paleontologist, County of Riverside

Professional Memberships

Society of Vertebrate Paleontology
Geological Society of America
Society for Sedimentary Geology
American Association of Petroleum Geologists, Pacific Section

Publications and Professional Papers

Scherzer, B. 2017. A possible physeteroid (cetacea: odontoceti) from the Yorba member of the Puente Formation, Orange County, California: Western Association of Vertebrate Paleontology Annual Meeting: Program with Abstracts, PaleoBios, v. 34 (supplemental), p. 11.

Scherzer, B. 2016. An archaic baleen whale (Cetacea: Mysticeti) from the Vaqueros Formation, and other fossil material from the Skyridge Project, Orange County, California: 76th Annual Meeting, Society of Vertebrate Paleontology, abstracts of papers, Journal of Vertebrate Paleontology.

Scherzer, B. 2015. Miocene teleost fish from Chino Hills: preliminary results from the Vila Borba Project, San Bernardino County, California: Western Association of Vertebrate Paleontology Annual Meeting, PaleoBios, v. 32, no. 1, p. 4.

Scherzer, B., and R. Benton. 2011. An evaluation of sixteen years of paleontological visitor site reports in Badlands National Park, South Dakota: Proceedings of the 9th Conference on Fossil Resources, Brigham Young University Geology Studies, v. 49(A), p. 31.

Professional Experience

Stratigrapher, Archeological Resource Management Corporation, November 2015 to present.
Paleontologist, DUKE CRM, February 2014 to present.
Paleontological Specialist II, San Diego Natural History Museum, October 2013 to present.
Paleontological Specialist II, SWCA Environmental Consultants (Pasadena), March 2012 to present.
Paleontologist, SWCA Environmental Consultants (Vernal, UT), 2011 to 2012.
Fossil Preparator, Carter County Museum, 2010 to 2011.
Physical Science Technician, Badlands National Park, 2010.
Mudlogger/Geologist, Pason Systems USA, 2006 to 2009.
Paleontological Field Assistant, ARCADIS US, 2006 to 2007.

Selected Project Experience

I-15 TEL, Riverside and San Bernardino Counties, 2017
Lewis Street, Anaheim, 2017
The Crossings, Chino Hills, 2016-present
Reata Glen, Mission Viejo, 2016 - present
Greenville-Banning Channel, Costa Mesa, 2016
Fairfield Ranch, Chino Hills, 2016
Diamond Valley, Hemet, 2017
Marywood Residential, Orange, 2016-present
Rancho Mission Viejo, Mission Viejo, 2015-present
Santa Margarita Water District Tesoro Reservoirs, Mission Viejo, 2015
Evanston Inn, Pasadena, 2015
Village of Terrasa, Corona, 2015
Sycamore to Peñasquitos 230 kV Tranmission Line, San Diego, 2015-present
Lakeside Temescal Valley, Temescal Valley, 2015-present
Vila Borba, Chino Hills, CA, 2013-present
Proposed State Route 60/Interstate 605 (SR-60/I-605) Interchange Improvement Project, Los Angeles County, 2014
RP-Outfall Relocation, Ontario, 2014
Serrano Ridge, Temesca Valley, 2014
Lago Los Serranos, Chino Hills, 2014
Vila Borba, Chino Hills, 2014-present
California Street/Highway 101, Ventura, 2014-present
Baker WTP, Lake Forest, 2014
Skyridge Residential, Mission Viejo, 2014-present
Rialto Unified CNG, Rialto, 2014
Willow Heights, Diamond Bar, 2014
Thomas Ranch, Corona, 2014
Wyle Lab Property, Norco, 2014
Pacific Highlands, San Diego, 2014
SDCWA Pipeline, San Marcos, 2014
SDG&E On-call, Carlsbad, 2014
TL694A, Vista, 2014
Sol y Mar, Ranchos Palos Verdes, 2013-2014
Mojave Solar Power, Hinkley, 2013
Rio Grande and Columbia 3, Rosamond, 2013
Genesis Solar Energy, Blythe, 2012-13

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

DUKE CRM

20371 Lake Forest Dr. #A2
Lake Forest, CA 92630
949-356-6660 Ext. 1006
www.dukecrm.com

Matthew Stever, M.A., RPA

Archaeologist

Area of Study

Archaeology of California and the Southwest.

Education

CSU, San Bernardino, M.A./Applied Archaeology 2017
CSU, San Bernardino, B.A./Anthropology 2014
CSU/NFS Field School, San Bernardino, 2014
Archaeologist, DUKE CRM, 2014 to present.

Professional Memberships and Certifications

Registered Professional Archaeologist (RPA No. 49570975)
Society for American Archaeology, Member no. 67603580

Certificate no. 1510172152184

Internship

2013-2014. *San Bernardino National Forest Cultural Resources Department.* Mr. Stever served two internships under the supervision of Bill Sapp, PhD and Gena Griffith, M.S., Mr. Stever participated in archaeological field surveys, site recording and implementation of a historic photograph digital curation program.

Other Projects

Mr. Stever has also conducted numerous IC records searches and field surveys for various cellular communications installations projects.

Selected Project Experience

Diamond Valley Estates Project, Hemet, 2017-present.
Role: Field Director/ Archaeologist. Mr. Stever acted as field director during Phase I survey as well as conducting background research for the project.

Lakeside Temescal Valley Project, Corona, 2015-present.
Role: Field Archaeologist/ Lab assistant. Mr. Stever assisted in the Phase II test excavations at six archaeological sites in the project area as well as assisting the lab director in the processing and cataloging of artifacts from the excavations. Research and analysis is ongoing. Employer: DUKE CRM

Rice Avenue and 5th Street Grade Separation Project, Ventura, 2015-present
Role: Researcher/Field Archaeologist. Mr. Stever conducted the IC records search and pedestrian field survey for the project as well as preparing the Native American communications materials. Mr. Stever also authored the Cal-Trans PEAR report under the direct supervision of Mr. Curt Duke, M.A., R.P.A. The project is ongoing. Employer: DUKE CRM

Evanston Inn, Pasadena, 2015
Role: Field Archaeologist. Mr. Stever monitored grading, recorded, collected, cataloged and analyzed historic artifacts, as well as authoring the final monitoring report letter under the supervision of Mr. Curt Duke, M.A., R.P.A.. Employer: DUKE CRM

Skyridge Residential, Mission Viejo, 2014-present
Role: Field Archaeologist. Mr. Stever assisted in the Phase III Data Recovery of prehistoric archaeological site CA-ORA-507. This work included excavation of prehistoric features, artifact recordation, artifact cataloging, paleontological recovery of specimens, as well as archaeological and paleontological monitoring. Archaeological and paleontological monitoring is on-going. Employer: DUKE CRM.

Vila Borba, Chino Hills, 2014-present
Role: Field Archaeologist, Archaeological and Paleontological monitor/Researcher. DUKE CRM is responsible for ongoing archaeological and paleontological monitoring of the project as well as Phase II testing and Data Recovery of site C-0116-001/H. Mr. Stever also created the artifact catalog for the project and researched and wrote a detailed history of the project area. Employer: DUKE CRM.

VA Loma Linda, Loma Linda, 2014
Role: Archaeological Monitor. Mr. Stever monitored ground disturbing construction activity for cultural resources. Employer: DUKE CRM.

Appendix G

California DPR 523 Forms

Confidential Appendix:
Not for Public Review

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-33-002963
HRI #
Trinomial CA-RIV-2963

Page 1 **of** 1 **Resource Name or #** P-33-002963
Recorded by: Matthew Stever and Sarah Nava, DUKE CRM **Date** 11/13/17 □ **Continuation** ☒ **Update**

This is an update to, but does not replace, the original recording by Banks (1984)

Described as one milling slick on a bedrock outcrop, P-33-002963 was originally recorded prior to the construction of the Moreno Valley Ranch Golf Club.

DUKE CRM performed a site visit during the current effort and could not relocate the site. The site was likely destroyed during earth moving activity related to the construction of the golf course. No natural topography remains intact in the vicinity of the site.

Report Citation (Provide full citation or enter "none"): Stever, Matthew et al. (2017) *Cultural and Paleontological Resources Assessment Moreno Valley Golf Couse Project, City of Moreno Valley, Riverside County, California*. Duke CRM, Lake Forest.

Site 33-002963 overview east, trees in center are approximate site location

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: CA-RIV-2963 Supplement ☐

Temporary Number: #14

RECEIVED IN ARU

OCT 01 1984

Page 1 of 3 .

Agency Designation:

1. County: Riverside
2. USGS Quad: Sunnymead (7.5') 1967 (15') Photorevised 1973
3. UTM Coordinates: Zone 11 / 484288 (290') Easting / 3751020 Northing ( )
4. Township 3S Range 3W ; NW ¼ of SE ¼ of SE ¼ of NW ¼ of Section 23 Base (Mer.) SBM ( )
5. Map Coordinates: 450 mmS 315 mmN (from NW corner of map) 6. Elevation 1600 feet
7. Location: In rocky area in middle of plowed field. Rocks are all low to the ground. About 350 meters east of Moreno Beach Boulevard. ( )
8. Prehistoric X Historic Protohistoric 9. Site Description: 1 slick on bedrock outcrop. ( )
10. Area: m(length)x m(width) m^2. Method of Determination: ( )
11. Depth: None cm Method of Determination: ( )
12. Features: 1 slick ( )
13. Artifacts: None ( )
14. Non-Artifactual Constituents: None ( )
15. Date Recorded: 10/27/83 16. Recorded By: Thomas J. Banks ( )
17. Affiliation and Address: SCIENTIFIC RESOURCE SURVEYS, INC.,5232 Bolsa Ave., Suite 5 Huntington Beach, California 92647 ( )

DPR 422A (Rev. 8/82)

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: RIV-2963 / ____ (mo. / yr.)

Temporary Number: #14

Agency Designation: ____

18. Human Remains: None

19. Site Integrity: Good

20. Nearest Water (type, distance and direction): There was a drainage just north of the site, but plow has rechanneled it away from the site.

21. Largest Body of Water within 1 km (type, distance and direction): None

22. Vegetation Community (site vicinity): Was Coastal Sage Scrub, now potatoes dominate. [Plant List ( )]

23. Vegetation Community (on site): Same [Plant List ( )]

References for above: Munz

24. Site Soil: sandy loam ( ) 25. Surrounding Soil: same

26. Geology: Granite boulders in alluvium 27. Landform: slope

28. Slope: 1° ( ) 29. Exposure: Open

30. Landowner(s) (and/or tenants) and Address: Robert P. Warmington Co.
3090 Pullman Street, Costa Mesa, CA 92626

31. Remarks: Within one meter of slick there appears to be 4 discolored areas on same boulder that could be starts of slicks, but they do not yet have a high sh

32. References: Cultural Resource Survey on Wolfskill Ranch, SRS 1984.

33. Name of Project: Wolfskill Ranch

34. Type of Investigation: Survey

35. Site Accession Number: ____ Curated At: ____

36. Photos: 110 color Taken By: T. Banks

37. Photo Accession Number: ____ On File At: SRS

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

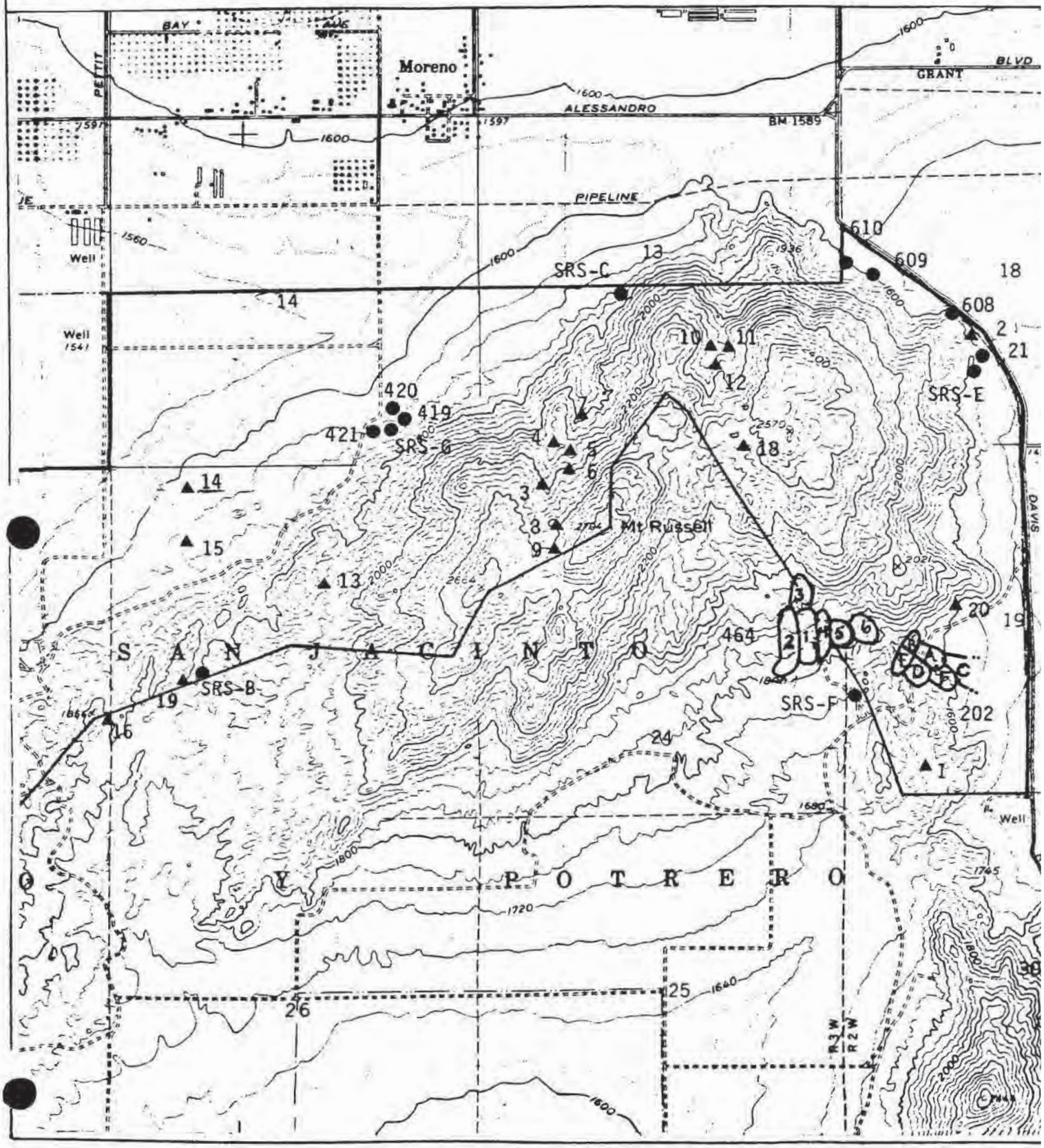
ARCHEOLOGICAL SITE LOCATION MAP

Permanent Trinomial: RIV-2963 / _____ (mo. / yr.)

Temporary Number: # 1-1

Agency Designation: _____

Page 2 of 2.



DPR 422F (Rev. 8/82)

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

State of California--The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary # P-33-002964
HRI #
Trinomial CA-RIV-2964

Page 1 **of** 1 **Resource Name or #** P-33-002964
Recorded by: Matthew Stever and Sarah Nava, DUKE CRM **Date** 11/13/17 □ **Continuation** ☒ **Update**

This is an update to, but does not replace, the original recording by Banks (1984)

Described as one milling slick on a bedrock outcrop, P-33-002964 was originally recorded prior to the construction of the Moreno Valley Ranch Golf Club.

DUKE CRM performed a site visit during the current effort and could not relocate the site. The site was likely destroyed during earth moving activity related to the construction of the golf course No natural topography remains intact in the vicinity of the site.

Report Citation (Provide full citation or enter "none"): Stever, Matthew et al. (2017) *Cultural and Paleontological Resources Assessment Moreno Valley Golf Couse Project, City of Moreno Valley, Riverside County, California*. Duke CRM, Lake Forest.

Site 33-002964, overview northeast, boulder in center is approximate site location

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: CA-RIV-2964 Supplement ☐

Temporary Number: #15

RECEIVED IN ARU

OCT 01 1984

Agency Designation:

1. County: Riverside
2. USGS Quad: Sunnymead (7.5') 1967 (15') Photorevised 1973
3. UTM Coordinates: Zone 11 / 484290 Easting / 3750790 Northing
4. Township 3S Range 3W : NE ¼ of NE ¼ of SW ¼ of NW ¼ of Section 23 Base (Mer.) SBM
5. Map Coordinates: 464 mmE 310 mmN (from NW corner of map) 6. Elevation 1650 feet
7. Location: On west side on northern point of saddleback-like hill in middle of plowed field. 350 meters east of Moreno Beach Boulevard on lower slope of Mt. Russell Hills.
8. Prehistoric X Historic Protohistoric 9. Site Description: 1 slick on bedrock outcrop.
10. Area: m(length)x m(width) m^2. Method of Determination:
11. Depth: None cm Method of Determination:
12. Features: 1 feature
13. Artifacts: None
14. Non-Artifactual Constitutients: None
15. Date Recorded: 10/27/84 16. Recorded By: Thomas J. Banks
17. Affiliation and Address: SCIENTIFIC RESOURCE SURVEYS, INC.,5232 Bolsa Ave., Suite 5 Huntington Beach, California 92647

DPR 422A (Rev. 8/82)

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

ARCHEOLOGICAL SITE RECORD

Permanent Trinomial: RIV-2964 / ____ (mo. / yr.)

Temporary Number: #15

Agency Designation: ____

18. Human Remains: None

19. Site Integrity: Good

20. Nearest Water (type, distance and direction): Spring 800 feet south up ravine

21. Largest Body of Water within 1 km (type, distance and direction): None

22. Vegetation Community (site vicinity): Was Coastal Sage Scrub [Plant List ( )]

23. Vegetation Community (on site): Same [Plant List ( )]

References for above: Munz

24. Site Soil: sandy loam ( ) 25. Surrounding Soil: same

26. Geology: Granite boulder in alluvium 27. Landform: slope

28. Slope: 1° ( ) 29. Exposure: Open

30. Landowner(s) (and/or tenants) and Address: Robert P. Warmington Co.
3090 Pullman Street, Costa Mesa, CA 92626

31. Remarks: None

32. References: Cultural Resource Survey on Wolfskill Ranch, SRS 1984.

33. Name of Project: Wolfskill Ranch

34. Type of Investigation: Survey

35. Site Accession Number: ____ Curated At: ____

36. Photos: 110 color Taken By: T. Banks

37. Photo Accession Number: ____ On File At: SRS

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

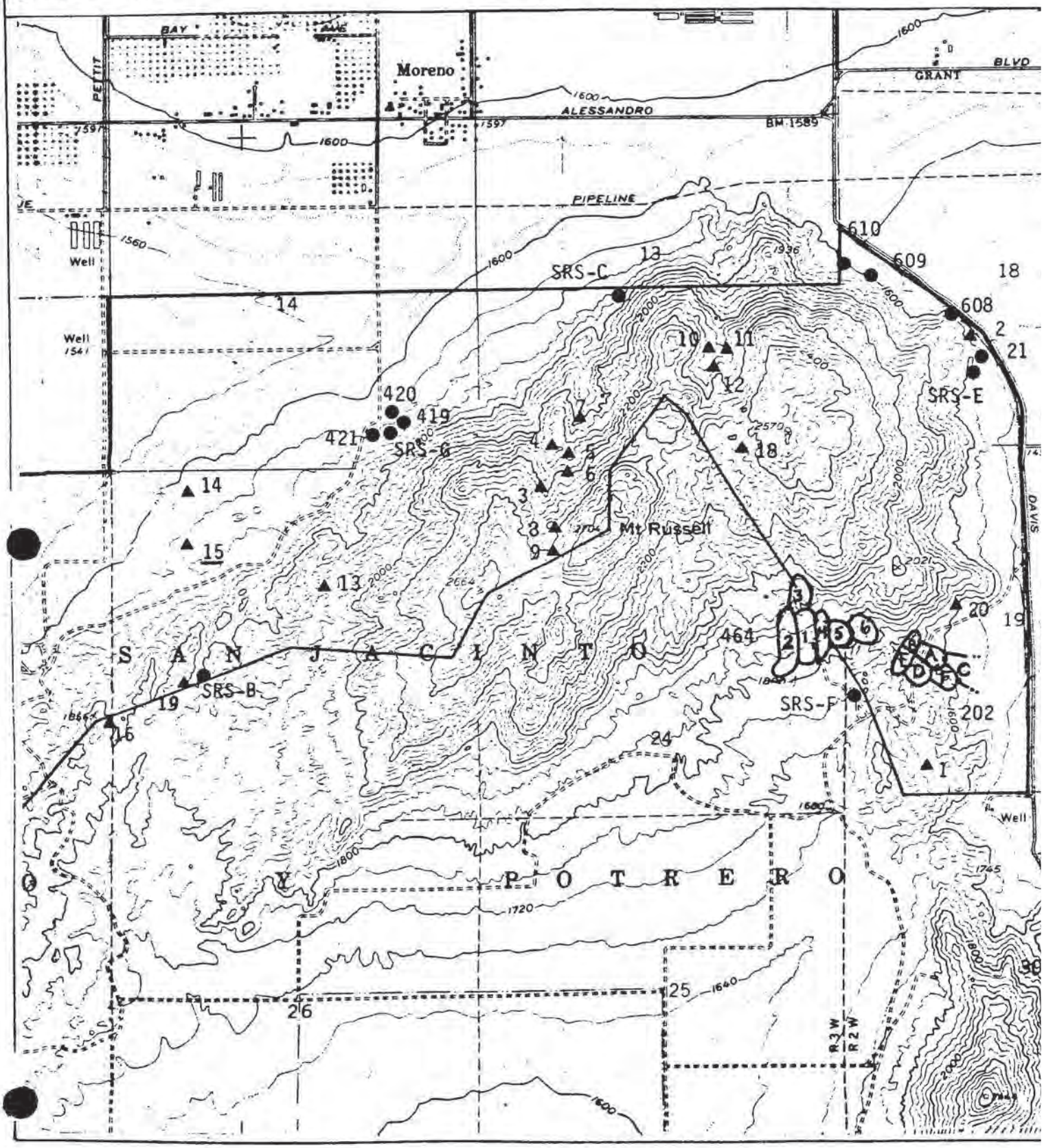
ARCHEOLOGICAL SITE LOCATION MAP

Permanent Trinomial: RIV-2964 / ____ (mo. / yr.)

Temporary Number: ____

Agency Designation: ____

Page 2 of 2.



DPR 422F (Rev. 8/82)

APPENDIX C

Cultural and Paleontological Resources Assessment

The Reserve at Rancho Belago

City Of Moreno Valley, Riverside County, California

Prepared for:

ROC III CA Belago, LLC
c/o Bridge Investment Group Holdings
2521 State Street
Carlsbad, CA 92008

Prepared by:

Curt Duke, Benjamin Scherzer, and Sarah Nava
Duke Cultural Resources Management, LLC
20371 Lake Forest Drive, A-2
Lake Forest, CA 92630
(949)356-6660
www.DukeCRM.com

Duke CRM Project Number: C-0217

June 2017

Per California Government Code 6254.10 archaeological site location information is exempt from the California Public Records Act. Therefore archaeological site location information should be kept confidential and not be made available for public view.

TABLE OF CONTENTS

Figures

Tables:

Appendices

MANAGEMENT SUMMARY

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to ROC III CA Belago, LLC to provide cultural and paleontological resources services for The Reserve at Rancho Belago (Project), located in the City of Moreno Valley, Riverside County, California. The Project boundaries encompass approximately 21 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

ROC III CA Belago, LLC proposes the development and construction of 414 multi-family residential dwelling units on the 49.99-gross acre property. The 414 apartments will be built within 15 structures ranging from 2 to 4 stories. The approximately 21- acre site will result in a density of less than twenty dwelling units per acre.

The cultural and paleontological resources assessment included background research and a field survey to identify cultural and paleontological resources. The research and field survey did not identify any cultural or paleontological resources within the project boundaries. However, multiple fossils localities were found nearby in similar deposits to those underlying the Project. As a result, we recommend that paleontological construction monitoring occur during ground disturbance associated with development of the project.

If archaeological resources are discovered during construction, a qualified archaeologist shall be retained to assess the nature and significance of the discovery. If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

INTRODUCTION

Duke Cultural Resources Management, LLC (DUKE CRM) is under contract to ROC III CA Belago, LLC to provide cultural and paleontological resources services for The Reserve at Rancho Belago project, located in the City of Moreno Valley, Riverside County, California. The Project boundaries encompass approximately 21 acres. The purpose of this report is to document efforts made to comply with the California Environmental Quality Act (CEQA).

Project Description

The Applicant, ROC III CA Belago, LLC, proposes the development and construction of 414 multi-family residential dwelling units on the 49.99-gross acre property. The 414 apartments will be built within 15 structures ranging from 2 to 4 stories. The approximately 21-net acre site will result in a density of less than twenty dwelling units per acre.

The project site is located off the southeast corner of Moreno Beach Drive and John F. Kennedy Drive. It lies within the Moreno Valley Ranch Specific Plan No. 193 and is currently designated as Golf Course. The proposed Specific Plan Amendment will change the zoning to R-30, High Density Residential. The project site is located on the former driving range for the vacated golf course, Moreno Valley Ranch Golf Club. Approximately 87 existing single-family residences about the project site on the southwest, south and northeast. An existing apartment complex abuts the northern boundary of the project site, west of and adjacent to the existing clubhouse for the former golf club.

In addition to the proposed residential buildings, proposed amenities include a swimming pool, outdoor basketball court, clubhouse, dog-park, parking, and landscaping. A water quality/detention basin area is proposed in the western portion of the project site. Vehicular access will be provided off of Moreno Beach Drive and John F. Kennedy Drive. Emergency access will be provided to Championship Drive to the south of the complex.

Project Location

The property is depicted within the *Sunnymead* USGS 7.5-minute quadrangle, and is located east of Moreno Beach Drive, and northwest of the San Jacinto mountain range. The Project boundaries encompass approximately 21 acres.. Specifically the project is located in Township 3 South, and Range 3 West, in Section 23. The project is shown on Figures 1, 2, and 3.

SETTING

Natural

California is divided into 11 geomorphic provinces, each naturally defined by unique geologic and geomorphic characteristics. The project is located in the northeast portion of the Peninsular Ranges geomorphic province. The Peninsular Ranges province is distinguished by northwest trending mountain ranges and valleys following faults branching from the San Andreas Fault. The Peninsular Ranges are bound to the east by the Colorado Desert and extend north by the San Bernardino Mountains, west into the submarine continental shelf, and south to the California state line.

The project is located in the northern portion of the Perris Block, a tectonically stable package of Cretaceous and older granitic and metasedimentary basement rocks from the Peninsular Ranges Batholith (Morton and Matti, 2001; Springer, et al. 2009). Locally, the Project is situated at the base of local highlands composed of plutonic rocks from the Perris Block (Morton and Matti, 2001), on alluvial deposits that can reach up to 2,000 feet in thickness (City of Moreno Valley, 2006).

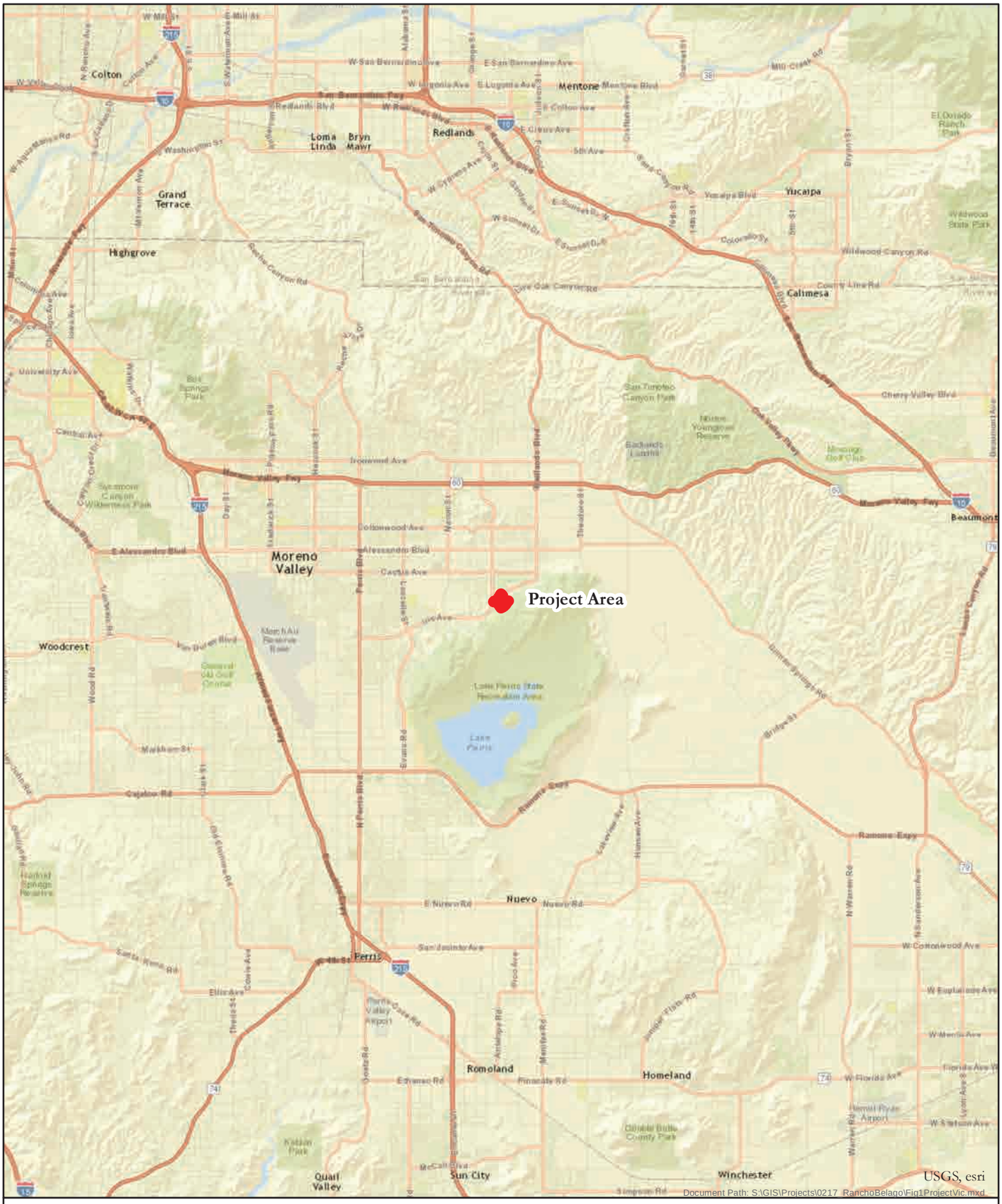


Figure 1
Project Vicinity Map

DUKE CRM

Project Area

0 3 6 Miles

1 inch = 3 miles 1:190,080

N

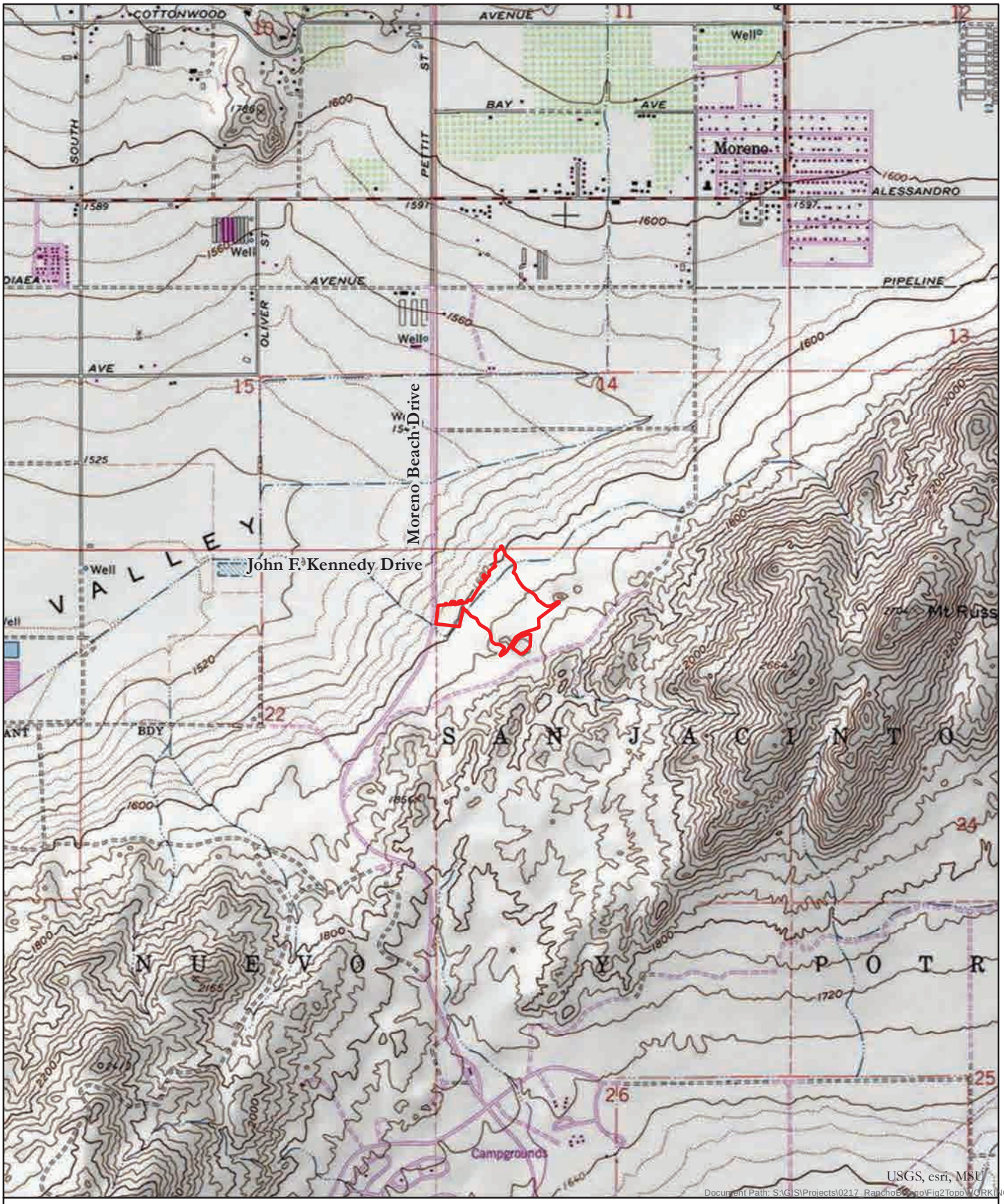


Figure 2
Project Location Map

Project Area

Sunnymead USGS 7.5 Min. Quadrangle
T 3 S, R 3 W, S 23

0 2,000 4,000 Feet
1 inch = 2,000 feet 1:24,000
N

Figure 3
Project Aerial Map

Project Area

0 300 600 Feet

1 inch = 300 feet 1:3,600

N

DUKE CRM

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Paleontological Resources

The geology in the vicinity of the project has been mapped by Morton and Matti (2001) at a scale of 1:24,000. A review of this map indicated that the Project is predominantly located on very old alluvial fan deposits ($Qvof_a$), with minor exposure of heterogeneous granitic rocks (Khg) (Figure 4, Geology Map).

Very old alluvial fan deposits ($Qvof_a$) (early Pleistocene)

Very old alluvial fan deposits in this area are composed of slightly to well consolidated to indurated sediments, capped by moderately- to well-developed pedogenic soils (Morton and Matti, 2001). In the Project, these deposits are dominated by sand-sized sediment (arenaceous), and are sourced by the adjoining highlands to the south (Morton and Matti, 2001). These deposits underlie almost the entire Project.

Heterogeneous granitic rocks (Khg)

Granitic rocks, mostly tonalite and granodiorite, but also minor monzogranite and gabbro, (Morton and Matti, 2001) compose the highland surrounding the Perris Reservoir, and are occasionally exposed in the southwestern corner of the Project.

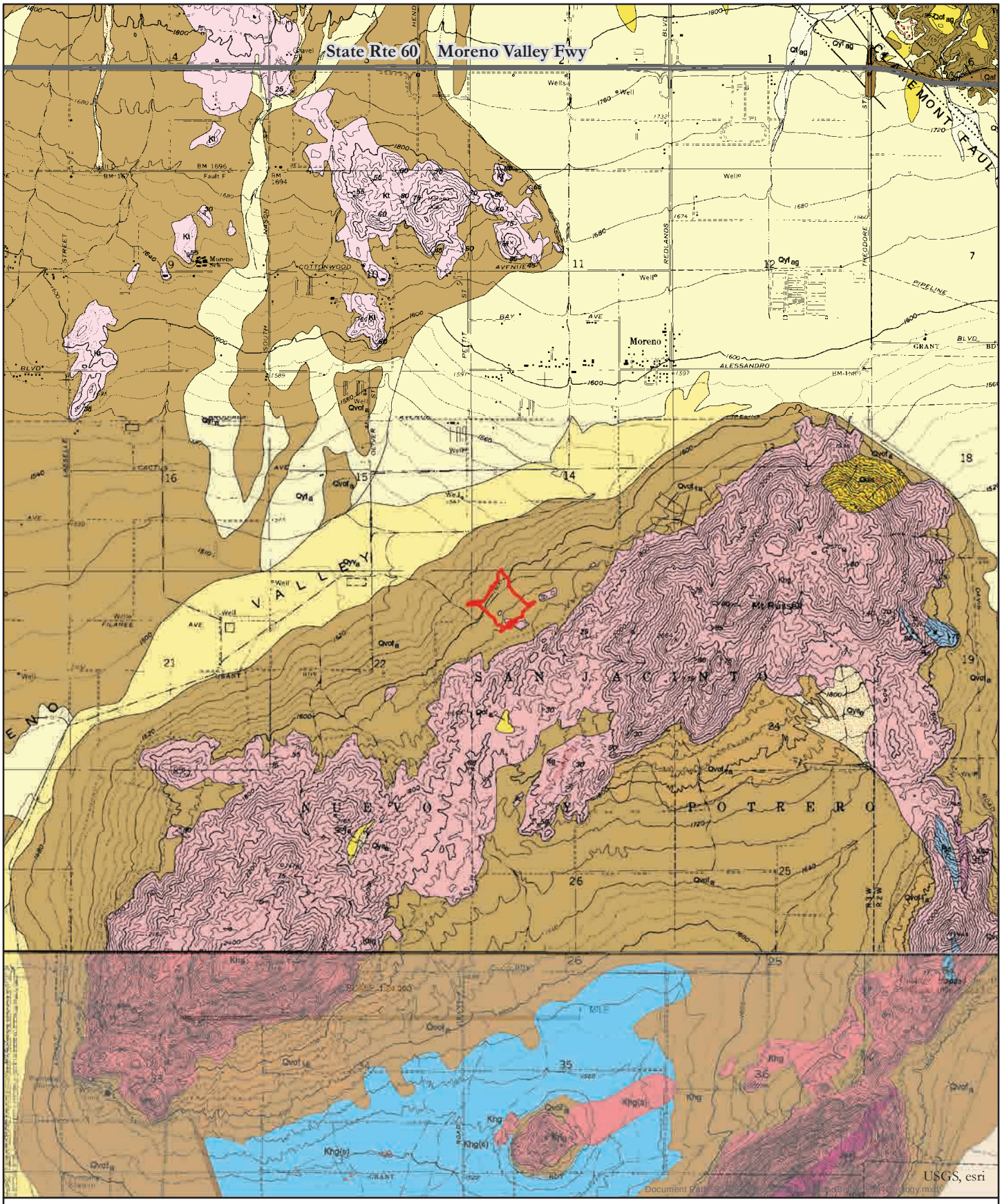


Figure 4
Geology Map

DUKE CRM

Project Area

0 3,500 7,000 Feet

1 inch = 3,500 feet 1:42,000

N

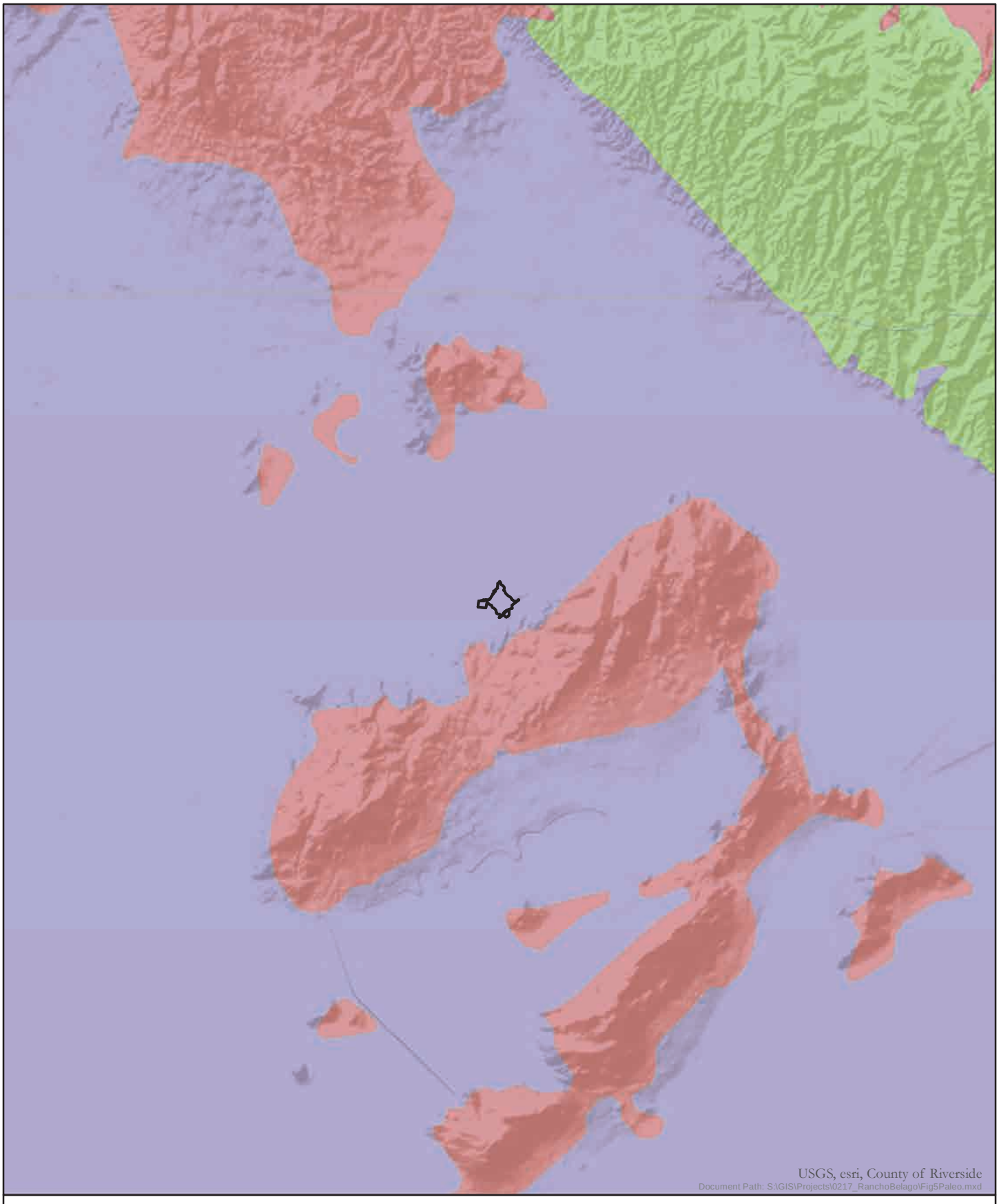


Figure 5
Paleontological Sensitive Areas Map

DUKE CRM

Project Area
Ha
Hb
L

0 6,000 12,000 Feet
1 inch = 6,000 feet 1:72,000
N

Cultural

Prehistory

Claude Warren proposed the widely cited prehistoric cultural chronology for the desert regions of Southern California (1984):

- Lake Mojave (12000–7000 B.P.)
- Pinto (7000–4000 B.P.)
- Gypsum (4000–1500 B.P.)
- Saratoga Springs (1500–800 B.P.)
- Shoshonean (800~200 B.P.)

More recent synthetic and chronological work by Sutton et al. (2007) explored the relationship between chronological sequences as defined by environmental shifts, and the cultural complexes of artifact assemblages evident within these chronological periods:

- Early Holocene (10,000-8,500 B.P.), Lake Mojave Complex
- Middle Holocene (8,500-4,000 B.P.), Pinto Complex and Dead Man Lake Complex
- Late Holocene (4,000-1,800 B.P.), Gypsum Complex
- Late Holocene (Cal. 1750-850 B.P.) Rose Spring Complex
- Late Holocene (850 B.P. to Contact) Late Prehistoric Complex

Early Holocene

The early Holocene period has little occupation of the Mojave Desert. During this period, the climate became warmer and the climatic event is called the Altithermal Climatic Phase. Documented archaeological habitation of southern California tends to be focused on the coasts. Recovered archaeological assemblages indicate a low frequency of small seed processing and wide spheres of economic interaction or the long distance travel to resource locales. Sutton et al. (2007:237) interpreted these data and others as indicating small, foraging, social units with undefined hunting and foraging boundaries. Lake Mojave Complex sites are rare in the Mojave Desert and generally occur around Pleistocene lakes.

Lake Mojave Complex assemblages were first identified at Pleistocene age Lake Mojave (Campbell et al. 1937; Warren and Crabtree 1986). The type artifact of the complex is the Lake Mojave type projectile point which is highly variable in its morphology but generally is a stemmed lancelet point with an elongated and slender design, with weak shoulders which have heavy lateral grinding and a biconvex cross section (Justice 2002: 86). Silverlake type points are similar to Lake Mojave points but are generally shorter with a wider and thicker hafting element and the shoulders are more clearly demarcated (Justice 2002:98). Other diagnostic items include well-made gravers, scrapers, perforators, and stone crescents.

This time period also compasses the Playa cultures as documented by Rogers (1939) and the San Dieguito Complex which did have stemmed points of similar morphology to Lake Mojave and/or Silverlake points (Warren 1967). In general, Lake Mojave Complex, San Dieguito Complex and the Playa cultures are considered ancestral to the Pinto Complex with an approximate 1,000 year overlap of the two complexes.

Middle Holocene

The middle Holocene is a time of change and transition with population contraction across the inland deserts of southern California. As conditions continued to warm and dry, some lakes and streams in the desert disappeared, which concentrated populations to locations which retained potable water. The pluvial lakes and fossil stream channels as well as some upland regions remained areas of high productivity of resources. Consequently, many sites from this period possess deep midden deposits which likely represent either larger groups and/or prolonged occupation (Sutton et al 2007:238).

One and maybe two cultural complexes are present in this time period. The Pinto Complex continues out of and maybe continues in concert with the preceding Lake Mojave Complex. Evidence supporting this includes

low reliance on obsidian and other fine-grained cryptocrystalline silicates for tool-stone. Groundstone implements are much more frequent (Sutton et al. 2007:238) as well as a change in projectile point styles to the Pinto point. Warren (1984) argued the Pinto Complex, which gradually replaced the Lake Mojave Complex constituted a cultural adaptation to the changing desert environment between 7,500 and 5,000 B.P. As Sutton et al. (2007:238) note, however, Pinto Complex assemblages at Fort Irwin and at Twenty Nine Palms produced radiocarbon dates as early as 8820 B.P. which date Pinto and Lake Mojave Complexes as concurrent.

The second possible complex is the Dead Man Lake complex of small to medium-sized contracting stemmed or lozenge-shaped projectile points, battered cobbles, bifaces, flake-tools, millstone equipment and shell beads (Sutton 2007:239). This complex might only be a variation of the Pinto Complex as the geographic range of the Dead Man Lake Complex is currently not well understood and is limited to the Twentynine Palms area.

Late Holocene

Three cultural complexes, the Gypsum, Rose Spring and Late Prehistoric, become evident in the Late Holocene (4000 B.P. to present), each with different inception, fluorescence and termination time periods.

The Gypsum Complex (4000 B.P. to 1800 B.P.) is based upon findings at Gypsum Cave, Nevada and consists of triangular-shaped, contracting stem projectile points with the haft expanding to meet the margins of the biface such that the maximum width of the stem is at the juncture of the shoulder of the point and the haft (Justice 2002:291). Though contracting stem points are common in many parts of the western U.S. during this time, but each is geographically restricted and therefore treated as separate complexes. Projectile point style points in the Gypsum Complex include the Elko series, Humboldt concave base and Gypsum. The mortar and pestle first appear in this complex. Bifacial knives with rectangular bases, scrapers made on flakes, scraper/core planes, choppers, manos, hammerstones and milling tools complete the assemblage. Technologically, Gypsum Complex assemblages likely evolved out of preceding Pinto Complex assemblages with the addition of in situ technological innovations or as part of cultural contact with other technological traditions.

Ritual activities likely arose in cultural importance as split-twig figures, hunting scenes depicted in petroglyphs, other rock art, the use of crystals, and paint become evident (Sutton et al 2007:241). The depiction of hunting of mountain sheep might be also related to the social importance of this activity (Grant et al 1968). Though it is depicted in rock art, the economic importance of large-game hunting likely decreased through this period as both exchange of storable plant foodstuffs likely increased as evidenced by an increase in groundstone artifacts. Conversely, small game hunting likely increased during this period. Evidence also exists for the exchange of obsidian and other cryptocrystalline silicate rocks for flake-stone tools also is associated with Gypsum Complex. In general, populations increased and economic exchange evolved and increased as an adaptation to living in desert environment despite an increase in aridity after 2500 B.P. (Gilreath and Hildebrandt 1991; Hall and Basgall 1994; Sutton 1988, Warren 1984, Warren and Crabtree 1986).

The Rose Spring Complex (ca. cal 1750-850 B.P.) marks a period of cultural diversification through strong regional developments and long distance contact between the people in the California deserts and the geographic limits of the influence of Ancestral Pueblo people in the Four Corner region of the Southwest. Ancestral Puebloan peoples might not have controlled but at least influenced a large portion of the northeastern Mojave Desert by ca. 1250 B.P. (Sutton et al. 2007:242; Warren 1984:420-424). These two regions exchanged turquoise from the desert and crops like corn, beans and squash from the Ancestral Puebloan homeland.

Technologically, the Rose Spring Complex is marked by smaller projectile point styles than the Gypsum Complex, such as Eastgate and Rose Spring series, likely signaling the introduction and use of bow and arrow over atlatl and dart (Sutton 1996:235; Sutton et al. 2007:241). Stone knives, drills, pipes, bone awls, milling

equipment of various forms, marine shell ornaments and beads, an increase in obsidian use are also part of the Rose Spring Complex (Sutton et al. 2007:241).

The importance of big game hunting continued to decline with the Rose Spring Complex as hunting of small game such as rodents, rabbits and hares became more important. Plant resources likely were important foodstuffs as evidenced by bedrock milling features like mortar cups and slicks are often in direct association with Rose Spring Complex midden deposits and potential permanent habitation sites (Sutton 2007:241) and these sites are both common in the Mojave Desert and are found near both intermittent and permanent sources of water like washes, springs and lakes (Sutton 1996).

The Late Prehistoric Complex (850 B.P to European-American Contact) includes Desert Side-Notched and Cottonwood Triangular projectile points, continued use of the bow and arrow, ceramics (brownware and Lower Colorado River buffware varieties), unshaped manos and portable metates, mortars, pestles and shell beads (Warren and Crabtree 1986). In comparison to the Rose Spring Complex, obsidian use in flaked-stone technologies decreased but small game continues to be primary food resource. Additionally, the cultivation of domesticated plants continues to develop in the Mojave Desert and the Coachella Valley. Semi-permanent and permanent villages are present in the Coachella Valley.

During this time period, the Numa (Shoshonean) migrated throughout the Great Basin from Death Valley (Lamb 1958) or from Owens Valley (Bettinger and Baumhoff 1982). Though researchers do not agree over the mechanics and timing of the Numic Spread (Madsen and Rhode 1994), it likely occurred around 1000 B.P. and represents one of the most important regional developments of the Late Prehistoric Complex. European-American contact marks the end of the Late Prehistoric and provides the first, if not sparse, recorded historical documentation of the Native Americans in the Coachella Valley.

Ethnography

The project is located within two tribal territories, the Cahuilla and the Luiseño Indians.

The project is located within the ethnographic boundaries of Cahuilla Indians, a Takic language group within the Uto-Aztecan family of languages. In their own dialect, *ivia*, they called themselves the *Iviatim*. The word Cahuilla is likely derived from the *ivia* word for master, *kawi'a*. Their territory included the Coachella Valley, the San Jacinto and Santa Rosa Mountain ranges. Bean (1978) estimated that the Cahuilla numbered between 6,000 and 10,000 people at the time of Spanish Contact. Ethnographers have divided this population by habitation locale (Mountain, Pass, and Desert) whereas the Cahuilla divided themselves by patrilineal descent clans and one of two moieties (Wildcat and Coyote). Further distinctions were made within clans of politically important and independent subsidiary lineages. These lineages occupied their own villages as documented by Cahuilla ethnographic consultants in the early 20th century and from Franciscan Mission records (Earle 2004).

Politically and ceremonially Cahuilla clans were led by a Chief or Net. The Net had charge of the sacred dance house and the sacred bundle, *masut*, which consisted of matting which was wrapped around items sacred to the clan such as ritual paraphernalia. Importantly, the *masut* was the sacred expression of each clan. A *Paha*, ritual assistant, is also found among other Takic speaking groups. The office of *Paha* varied however, as it was not always present within some of the southern-most Desert Cahuilla clans (Bean 1972, 1978; Hooper 1920). As other Takic speaking groups did, the Cahuilla would publically gather for the naming of children, marriage, female and male initiation ceremonies, for the ascendency of a Net, for an Eagle-Killing Ceremony and the mourning ceremony. The mourning ceremony took place as a way to collectively mourn all those that died since the previous mourning ceremony. Each person was cremated along with his or her individual possessions in a ceremony separate from the mourning ceremony. Mourning ceremonies were one of the most important ceremonies for clan in that sacred songs were sung, sacred dances were danced, and moieties exchanged food and valued goods.

The three ethnographically documented zones of Cahuilla habitation (Pass, Mountain, and Desert) serve as general guidelines for understanding their subsistence practices. In general Mountain and Pass Cahuilla diet emphasized acorn, *Salvia islay*, yucca, agave and pinyon gathering in the mountain and foothill regions. In contrast Desert Cahuilla focused on the gathering of mesquite, cactus, and hard seeds such as screwbean, juniper and mesquite (Bean and Saubel 1972). These generalizations can only be broadly applied as the Cahuilla inhabiting different zones however were not mutually exclusive to each other. Desert Cahuilla in the Coachella Valley retained gathering areas in the Santa Rosa Mountains or other upland regions. Desert Cahuilla also utilized the resources in the foothills. The eastern foothills of the Coachella Valley produced agave and hard seeds. Also, the foothills on the western side of the Coachella Valley produced cactus, agave and hard seeds and higher upslope, pinyon, for the Desert Cahuilla. Further divisions can be made for the biotic sub regions of the Coachella Valley. Kelly (1977) distinguished the "agave desert" located in the Coachella Valley, the west side of the Salton Sea and in Imperial Valley and the "severe desert" located east and south of these regions. In his estimation, the Cahuilla and others adapted to the agave desert but not the severe desert. This adaptation involved the seasonal movement from desert floors up into the mountain foothills. The Cahuilla were also observed to cultivate small quantities of corn, beans, squashes, pumpkins, melons and wheat as early as 1824 by the Romero expedition. These crops and the cultivation of them potentially made their way from the Colorado River area to the Coachella Valley. The inhabitants of the Coachella did not practice flood recessional agriculture of the Colorado River groups (Bean and Lawton 1973). Based upon ethnographic interviews, Strong (1929:38) noted that he had been told by Francisco Nombre that his grandfather told him that the cultivation of corn and other crops by the Cahuilla was a recent practice and that the Cahuilla used to obtain corn from the "Yumas". Corn would likely have been available to the Cahuilla via exchange systems between foraging groups who have access to resources outside of the Colorado River and horticulturalists along the river. Regardless of the timing of cultivation of these crops, by the 1850s oasis gardens and to a lesser extent, canyon gardens were important sources of foodstuffs (Bean et al. 1995).

The territory of the Luiseño extended along the coast south to Agua Hedionda Lagoon, northwestward to Aliso Creek just north of San Juan Capistrano, and eastward to the Elsinore Valley and Palomar Mountain. Like other Native American groups in southern California, the Luiseño caught and collected seasonally available food resources and led a semi-sedentary lifestyle. Luiseño villages were generally located in valley bottoms near to water. The Luiseño took advantage of the various available resources. Village location is an indication that they subsisted on a variety of foods, plant and animal. Village populations were completely sedentary, with the majority of individuals residing at the village for the entire year (Oxendine 1983:57). At any given time, however, some individuals may have been away procuring food. Subsistence was based primarily on seeds from local grasses, manzanita, sunflower, sage, chía, and pine nuts, as well as acorns. Seeds were dried, ground, and cooked into a mush.

Seasonal camps were also established along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971). Game animals such as deer, rabbit, jackrabbit, wood rat, mice, antelope, and many types of birds were regularly hunted (Bean and Shipek 1978). In addition, the Luiseño utilized fire for crop management and communal rabbit drives (Bean and Shipek 1978). Small seasonal habitation sites in the area would contain quantities of fire affected rock (FAR), some burned bone, and small amounts of ground and flaked stone tools. They might be found as open sites atop knolls or ridges, or in protected areas near streams, or even in rock shelters.

The Luiseño community was the focus of family life. The Luiseño had a well-developed sense of ownership (White 1963:122), and their concept of property rights included the idea of private property. Property rights covered items and land owned by the village as well as items such as houses, gardens, ritual equipment, trade beads, eagle nests, and songs that were owned by individuals. Luiseño villages were politically independent and were administered by a chief, who inherited his position from his father. (Duke 2014)

History

The first Europeans to explore what would become the state of California belonged to the 1542 expedition of Juan Rodriguez Cabrillo, who sailed along and occasionally landed on the coast. Europeans are thought to

have first visited portions of the interior in 1769, when Gaspar de Portola (Brown 2001) led a 62-person overland expedition from San Diego to Monterey (Cramer 1988). Two later expeditions, led by Juan Bautista de Anza in 1774 and 1775 from Sonora through southwestern Arizona and southern California, crossed the Santa Ana River at Anza Narrows in today's Santa Ana River Regional Park.

The Spanish government subsequently established missions and military outposts in San Diego in 1769 to facilitate colonization of the area and to keep rival European nations out of the area. After Mexico won independence from Spain in 1822, colonization efforts in Alta California decreased. The Spanish mission system was largely abandoned and the Mexican government bestowed land grants or ranchos to those loyal to the Mexican government including some Anglo settlers. The Mexican period (1822-1848) is largely identified with the ranchos acquired by individuals through the land grant system as well as the secularization of the missions. Mission secularization began on July 25, 1826 with a decree by Governor Jose Maria Echeandfa and was completed by 1836 after an additional decree in 1831 (Engstrand and Ward 1995).

The end of the Mexican period in California began on June 14, 1846 when a band of American settlers supported by the American explorer John C. Fremont and his team captured Mexican General Mariano Guadalupe Vallejo in a dawn raid in Sonoma (Ide 1880, Rolle 2003). The Americans raised a flag for the "California Republic" and their actions became known as the "Bear Flag Revolt." The so-called California Republic was short-lived however, as on July 7, 1846, U.S. Navy forces captured Monterey, California, where the U.S. flag was raised (Rolle 2003). On February 2, 1848, the war between the U.S. and Mexico ended with the signing of the Treaty of Guadalupe Hidalgo, which greatly expanded U.S. territory (including California) and resulted in Mexico being paid $15 million for the land (Rolle 2003).

Although gold had been found prior to this in various parts of California, the well-publicized discovery of gold near Sutter's fort in 1848 dramatically increased the Anglo settlement of California. Despite property rights of rancho owners being secured by provisions in the Treaty of Guadalupe Hidalgo, California in the early American period experienced the transfer and subdivision of many of the ranchos as well as a shift from ranching to agriculture as the primary means of subsistence.

The Anza Expedition moved through the City of Moreno Valley in the late 1770's about a half-mile north of present-day March Air Reserve Base. U.S. settlement began in the 1850's and was an open landscape used for farming. The land was supported by Frank E. Brown's Bear Valley Land and Water Company. The City of Moreno Valley was named after Frank E. Brown, in that "Moreno" in Spanish, means, "brown" (Gudde 1998). The Bear Valley Land and Water Company closed in 1899 when the City of Redlands claimed eminent domain; therefore most of the population in Moreno Valley soon diminished until March Field was built in 1918. This helped to create residences within the area and by 1950's the population grew even more when the Riverside International Raceway was built.

PERSONNEL

The project manager for this project is Curt Duke. Mr. Duke is the Principal Archaeologist of DUKE CRM. Mr. Duke meets the professional qualifications of the Secretary of the Interior for prehistoric and historical archaeology; he is also a Registered Professional Archaeologist (RPA) who has worked in all phases of archaeology (archival research, field survey, testing and data recovery excavation, laboratory analysis, construction monitoring) since 1994. Mr. Duke holds a Master of Arts degree in Anthropology with an emphasis in archaeology from California State University, Fullerton and a Bachelor of Arts degree in Anthropology from the University of California, Santa Cruz. Mr. Duke has worked throughout southern and Northern California and parts of Arizona and Nevada.

Benjamin Scherzer, holds an M.S. in Earth Sciences from Montana State University, Bozeman. He has more than 10 years of experience in paleontological research, field surveys, fossil salvage, laboratory identification, report preparation, and curatorial experience. Mr. Scherzer is a member of the Society for Vertebrate Paleontology, Geological Society of America, Society for Sedimentary Geology, and the Paleontological Society.

Sarah Nava is an Archaeologist and GIS Specialist for DUKE CRM. She received her B.A. in Anthropology from California State University, Long Beach in 2008 and a GIS certification in 2014. Ms. Nava specializes in using geographic information systems for archaeological and environmental spatial analysis. Her area of expertise is in data collection in the field and statistical and cartographic post-processing. She has over 6 years of lab and field experience in archaeology and GIS, and is also cross-trained in paleontology. Her involvement in cultural resource management spans all of California with concentrations on the coast, Channel Islands, and southern California desert regions.

Please see Appendix A for Mr. Duke's, Mr. Scherzer's, and Ms. Nava's resumes.

METHODS

Research materials, including historic maps, previous surveys, planning documents, ordinances, and published local and regional historical accounts were collected and reviewed.

Research

A records search for archaeological and historical resources was conducted at the Eastern Information Center (EIC). The EIC is part of the California Historical Resources Information System (CHRIS) and is located at University of California, Riverside. The records search included a review of all recorded historic and prehistoric archaeological sites within a one-mile radius of the Project, as well as a review of known cultural resource survey and excavation reports. In addition, the California State Historic Property Data File (HPD) was reviewed, which includes the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Historical Landmarks (CHL), and California Points of Historical Interest (CPHI). A paleontological records search was conducted though the Western Science Center (WSC) in Hemet. In addition, , Mr. Scherzer performed a search of the University of California Museum of Paleontology (UCMP) online collections, the online Paleobiology Database (PBDB), and other published literature for fossil localities from similar deposits near the Project.

Field Survey

An intensive field survey was conducted on April 18th, 2017 by the DUKE CRM field crew (Dawn Fulkerson, M.A., Sarah Nava, B.A., and Zack Duke). The Project lies on the driving range of an unused golf course. The field crew surveyed 10-meter transects along both the interior of the Project boundary. Digital photos were taken to document the Project Moreno Beach Drive is located on the west side of the project boundary and Championship Drive runs through two portions of the Project from east to west. There are tracts of homes that surround the Project on all sides and portions of the golf course that will not be disturbed on the northeast and southwest sides.

RESULTS

Records Search

Cultural Resources

On April 7th, 2016, Sarah Nava conducted a records search at the EIC. Seven cultural resource reports are on file within one mile of the project, one of those is within the Project. Twenty-six cultural resources are mapped within one mile of the project boundary and two are recorded within the Project. If resources within Project are still present, impacts to these resources are expected. Table 1 summarizes cultural resource studies within one mile of the Project, and Table 2 summarizes cultural resources found within one mile of the Project.

Table 1- Prior Cultural Resource Studies Located within One Mile of the Project

Report No.	Report Title	Author and Year
RI-00414	Environmental Impact Evaluation: Archaeological Assessment of Two Portions of Land in Moreno Valley, Riverside County, California	Thomas Holcomb, 1978
RI-01843	Cultural Resource Survey Report On Wolfskill Ranch	Scientific Resource Surveys, Inc.
RI-02105	An Archaeological Assessment of the A.L.T.A. Specific Plan, Moreno Valley, California	Drover, C.E.
RI-02160	Letter Report: Archaeological Evaluation of Potential Hospital Site In Moreno Valley	Drover, C.E.
RI-05288	Letter Report: Records Search Results For Sprint PCS Facility RV35XC093D (Golf Course Maintenance), City of Moreno Valley, Riverside County, CA	Laurie White
RI-08802 (within Project)	Phase I archaeological Assessment: Moreno Master Drainage Plan Revision	Bai "Tom" Tang, Michael Hogan, Deirdre Encarnacion, and Daniel Ballester
RI-09652	Cultural Resources Summary for the Proposed Verizon Wireless, Inc., Property Site, 27905 John F Kennedy Drive, Moreno Valley, Riverside County, California 92555	Heather R. Puckett

Twenty-seven cultural resources are recorded in the one mile radius of the Project and two were recorded within the project boundaries. They are summarized in Table 2 below. Resource P-33-002963 and P-33-002964 are described as milling slick features on a bedrock outcrop. They were recorded during the Wolfskill Ranch Project by Thomas J. Banks in 1983 with Scientific Resource Surveys, Inc. and were shown to be within the current Project. The Department of Parks and Recreation 523 Forms (DPR forms) recorded for P-33-002963 and P-33-002964 list UTM coordinates and show the isolated features within the Project. However, the UTM coordinate locations and the locations depicted on the USGS Topographic map are approximately 100 meters apart. Therefore the spatial locations for both of these isolated features are debatable. A historic aerial search (NETRonline) shows that the areas surrounding the Project have been greatly affected by construction in from 1978 and 1996. In 1978 there are more bedrock outcrops present as well as hills, and by 1996, most of these areas were graded and modified by construction. The DPR forms were filed for these two isolates in 1984 and the survey was performed prior to this year, therefore it is determined that the probability of these sites being currently undisturbed is low. Site P-33-002964 was more than likely removed during construction following the Wolfskill Ranch Survey.

Table 2, Cultural Resources within One Mile of the Project

Primary No.	Description	Distance
33-000419	Prehistoric camp site with milling features and rock art	~1/2-mile, northeast
33-000420	Milling slicks, bedrock mortars, and outcrops	~1/2-mile, northeast
33-000482	Milling slicks and outcrops	~3/4-mile, south
33-000483	Milling slicks and outcrops	~1/2-mile, south
33-000484	Milling slicks and outcrops	~1 mile, south
33-000543	Milling slicks and outcrops	~1 mile, southwest
33-000544	Prehistoric rock shelter, and milling slick	~1 mile, southwest
33-000611	Milling slicks, one biface, and outcrops	~3/4 mile, south
33-002867	Milling slicks and outcrops	~1/4-mile, south
33-002952	Milling slick	~1 mile, east
33-002953	Milling slick and outcrop	~1 mile, east
33-002954	Milling slick and outcrop	~1 mile, east
33-002955	Milling slick and outcrop	~1 mile, east
33-002956	Milling slick and outcrop (unable to relocate)	~1 mile, east
33-002957	Milling slick and outcrop (unable to relocate)	~1 mile, east
33-002958	Milling slick and outcrop (unable to relocate)	~1 mile, east

33-002962	Milling slick and outcrop	~1/4-mile, east
33-002963	Milling slick and outcrop	Within Project
33-002964	Milling slick and outcrop	Within Project
33-002965	Milling slicks and outcrops	~1/2-mile, south
33-002968	Milling slick and outcrop	~1/4-mile, south
33-003223	Milling slicks	~1/4-mile, east
33-004218	Milling slicks	~3/4-mile, south
33-005296	Prehistoric campsite and quarry consisting of lithic tools, lithic debitage, and a fire hearth	~1/2-mile, south
33-011606	Milling slick	~1/4-mile, east
33-013110	Milling slick	~1/4-mile, south

Paleontological Resources

On March 27, 2017 the Western Science Center performed a paleontological records search to locate fossil localities within and in the vicinity of the proposed Project. No fossil localities were documented within the Project, but numerous fossil localities were documented within 10 miles of the Project (Radford, 2017). This includes the fossil material recovered from the El Casco Project, 6 miles northeast of the project, which produced over 15,000 Pleistocene-age specimens, including ground sloth, sabre-tooth cat, deer, horse, panther, llama, rodent, frog, salamander, and plant (The Press-Enterprise, 2010). Multiple fossil localities (400+) are documented in Pleistocene-age deposits in Riverside County (UCMP, PBDB), but few are indicated to occur near the Project. Two fossil localities in Beaumont (~12 miles away) have produced remains of bison and horse, while a locality in Lakeview Hot Springs (3 miles away) produced remains of mammoth, horse, and other artiodactyls (Jefferson, 1991). Due to their potential to contain significant fossils, very old alluvial fan deposits are assigned a high paleontological sensitivity. Heterogeneous granitic rocks, being igneous in origin, have no potential to contain fossil resources, and are assigned no paleontological sensitivity (Figure 5, Paleontological Sensitivity Map).

Table 3 - Geologic Units and Their Paleontological Potential

Age	Geologic Unit	Fossils Present	Paleontological Sensitivity
Pleistocene	Very old alluvial fan deposits ($Qvof_a$)	Ground sloth, sabre-tooth cat, deer, horse, panther, llama, rodent, frog, salamander, plant[1]	High
Cretaceous	Heterogeneous granitic rocks (Khg)	None	None

[1] The Press-Enterprise, 2010; Radford, 2017

Field Survey

An intensive field survey was conducted on April 18th, 2017 by the DUKE CRM field crew. The Project lies on a vacated golf course driving range. Digital photos were taken to document the Project. Moreno Beach Drive is located on the west side of the project boundary and Championship Drive runs through two portions of the Project from east to west. There are tracts of homes that surround the Project on all sides and portions of the golf course that will not be disturbed on the northeast and southwest sides. The field crew observed only modern disturbances including; golf balls and golfing equipment, golfing greens, cement paths, and animal burrows. The field crew attempted to relocate previously recorded site P-33-002963 and P-33-002964, which were recorded as milling slick isolates. However, the sites were not relocated. Although there were a few rock outcrops and boulders on the property, no cultural or paleontological material was found. Previously recorded sites were more than likely removed by grading associated with development of the golf course, streets, and adjacent development.

Figure 6: Project Overview Photograph, View Southeast

Figure 7: Project Overview Photograph, View Northwest

Figure 8: Project Overview Photograph, View North

Figure 9: Project Overview Photograph, View East

IMPACTS ANALYSIS AND RECOMMENDATIONS

This section addresses the project's potential to impact cultural and paleontological resources.

Cultural Resources

Impacts to cultural resources are generally considered to be direct (e.g. destruction or demolition of a resource) or indirect (e.g. visual, audible, or cumulative changes to the setting). Under CEQA cultural resources are evaluated for significance and eligibility for the California Register. If a resource is considered eligible for the California Register it is considered a historical resource under CEQA. For the purposes of CEQA, impacts are only considered significant for historical resources.

DUKE CRM conducted a records search and field survey for archaeological and historical resources. The results indicate that there were two known archaeological resources recorded within the project in 1983, 33-002963 and 33-002694. Both were recorded as isolated grinding slick. However, our field survey determined that neither of these sites is present within the project boundaries. Further research indicates that during the development of the golf course, adjacent streets, and residential development significant grading would have destroyed these cultural resources. Therefore, we recommend that this project has a low potential to impact any cultural resources.

Paleontological Resources

Our research indicates that there is a high sensitivity for paleontological resources in the Pleistocene-age deposits that underlie almost the entire Project. Therefore, significant and unique paleontological resources may be impacted by the project during earth disturbing activities. These impacts would be considered potentially significant. In order to reduce the potential for impacts to paleontological resources to a level that is less than significant under CEQA paleontological monitoring is recommended during ground disturbance associated with the project.

Paleontological Monitoring- A paleontological monitor shall be present to observe ground disturbing activities within the project property. The monitor shall work under the direct supervision of a qualified paleontologist (B.S./B.A. in geology, or related discipline with an emphasis in paleontology and demonstrated experience and competence in paleontological research, fieldwork, reporting, and curation).

1. The qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.
2. Paleontological monitoring shall start at full-time. If no paleontological resources are discovered after half of the ground disturbance has occurred, monitoring can be reduced to part-time.
3. The monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of a paleontological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.
5. In consultation with the qualified paleontologist the monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly removed and the area cleared.
6. If the discovery is significant the qualified paleontologist shall notify the applicant and the City immediately.
7. In consultation with the applicant, the qualified paleontologist shall develop a plan of mitigation which will likely include salvage excavation and removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find

immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Appendix A

Resumes

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

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Curt Duke

President/Archaeologist

Expertise

Cultural Resources Management
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CEQA Compliance
Native American Consultation

Education

CSU, Fullerton, M.A., Anth, 2006
SDSU, Grad Studies, Anth, 1996/97
UC Santa Cruz, B.A., Anth, 1994

Professional Registrations

RPA, No. 15969
County of Riverside (No. 151)
County of Orange

Professional Memberships

Society for California Archaeology
Society for American Archaeology
Pacific Coast Archaeological Society
Assoc. of Environmental Professionals
Building Industry Association

Professional Experience

President/Archaeologist, DUKE CRM, March 2011 to present.
Archaeologist/Principal, LSA Associates, 1997-2011.
Archaeological Technician, SRI, 1997.
Archaeological Technician, Petra Resources, 1997.
Archaeological Technician, KEA Environmental, 1997.
Archaeological Technician, Keith Companies, 1997.
Archaeological Technician, KEA Environmental, 1997.
Archaeological/Paleontological Technician, LSA Associates, 1996.
Archaeological/Paleontological Technician, Petra Resources, 1996.
Archaeological Technician, Affinis Environmental Services, 1996.
Archaeological Technician, KEA Environmental, 1996.
Archaeological Technician, Macko Archaeological Consulting, 1995 to 1996.
Archaeological Technician, Heritage Resource Consultants, 1995.
Archaeological Technician, Chambers Group, 1995.
Archaeological Technician/Teachers Assistant, Cabrillo College, 1994
Anthropological Laboratory Technician, UC Santa Cruz, 1994.

Selected Project Experience

Vila Borba, Chino Hills, 2013-Present
Skyridge Residential, Mission Viejo, 2011-Present
Bryn Mawr Road Extension, Loma Linda, 2014-Present
VA Clinic, Loma Linda, 2014-Present
California Street/Highway 101, Ventura, 2014-Present
6th Street Bridge Replacement, Los Angeles, 2013-Present
Colton Bridges, 2013-14
San Fernando Road Widening, Los Angeles, 2011-12
California Avenue Improvements, Long Beach, 2011
AT&T Mobility On-Call, 2011-12
Palomar Mountain Fuels Modification, 2011
Colton Crossing Grade Separation, 2009-11
Devore Interchange Improvements, 2008-11
Mid County Parkway, western Riverside County, 2005-11
24th Street Widening, Bakersfield, 2008-10
California Valley Solar Ranch, San Luis Obispo 2009-10
Mammoth Lakes Parks and Recreation and Trails System Master Plan 2009
I-15/SR-79 Interchange, Temecula, 2006-10
Superstition Solar I, Imperial Valley, 2008-09
McSweeny Farms, Hemet, 2005-08
Magnolia Avenue Widening, Los Angeles, 2008
Hacienda at Fairview Valley, Mojave Desert, 2007-08
Majestic Hills Specific Plan, Hesperia, 2007
Needles Highway Improvements, 2005-08
Mesquite Regional Landfill, Glamis, 2005-06
Los Coches Creek Elementary School, Alpine, 2003
Stadium Arco Station, San Diego, 2003-04
AT&T Wireless, Cingular/PBMS, ~3,000 Facilities, CA, NV, and AZ, 1997-2001
Muddy Canyon Archaeological Project, Newport Coast, 2000-02
Bonita Canyon Sports Park, Newport Beach, 1997
Hicks Canyon Retention Basin, Irvine, CA, 1996
Testing of Phase III, Las Trancas Canyon, Newport Coast, 1995
Data Recovery of Site CA-ORA-64, Newport Beach, 1995

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#

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Fossil excavation
Fossil preparation
Stratigraphy
Natural gas mudlogging
Directional drilling

Education

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B.A., Geology/Math, 2002, Earlham College, IN

Professional Registrations

Paleontologist, County of Orange
Paleontologist, County of Riverside

Professional Memberships

Society of Vertebrate Paleontology
Geological Society of America
Society for Sedimentary Geology
American Association of Petroleum Geologists, Pacific Section

Publications and Professional Papers

Scherzer, B. 2017. A possible physeteroid (cetacea: odontoceti) from the Yorba member of the Puente Formation, Orange County, California: Western Association of Vertebrate Paleontology Annual Meeting: Program with Abstracts, PaleoBios, v. 34 (supplemental), p. 11.

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Professional Experience

Stratigrapher, Archeological Resource Management Corporation, November 2015 to present.
Paleontologist, DUKE CRM, February 2014 to present.
Paleontological Specialist II, San Diego Natural History Museum, October 2013 to present.
Paleontological Specialist II, SWCA Environmental Consultants (Pasadena), March 2012 to present.
Paleontologist, SWCA Environmental Consultants (Vernal, UT), 2011 to 2012.
Fossil Preparator, Carter County Museum, 2010 to 2011.
Physical Science Technician, Badlands National Park, 2010.
Mudlogger/Geologist, Pason Systems USA, 2006 to 2009.
Paleontological Field Assistant, ARCADIS US, 2006 to 2007.

Selected Project Experience

I-15 TEL, Riverside and San Bernardino Counties, 2017
Lewis Street, Anaheim, 2017
The Crossings, Chino Hills, 2016-present
Reata Glen, Mission Viejo, 2016 - present
Greenville-Banning Channel, Costa Mesa, 2016
Fairfield Ranch, Chino Hills, 2016
Diamond Valley, Hemet, 2017
Marywood Residential, Orange, 2016-present
Rancho Mission Viejo, Mission Viejo, 2015-present
Santa Margarita Water District Tesoro Reservoirs, Mission Viejo, 2015
Evanston Inn, Pasadena, 2015
Village of Terrasa, Corona, 2015
Sycamore to Peñasquitos 230 kV Tranmission Line, San Diego, 2015-present
Lakeside Temescal Valley, Temescal Valley, 2015-present
Vila Borba, Chino Hills, CA, 2013-present
Proposed State Route 60/Interstate 605 (SR-60/I-605) Interchange Improvement Project, Los Angeles County, 2014
RP-Outfall Relocation, Ontario, 2014
Serrano Ridge, Temesca Valley, 2014
Lago Los Serranos, Chino Hills, 2014
Vila Borba, Chino Hills, 2014-present
California Street/Highway 101, Ventura, 2014-present
Baker WTP, Lake Forest, 2014
Skyridge Residential, Mission Viejo, 2014-present
Rialto Unified CNG, Rialto, 2014
Willow Heights, Diamond Bar, 2014
Thomas Ranch, Corona, 2014
Wyle Lab Property, Norco, 2014
Pacific Highlands, San Diego, 2014
SDCWA Pipeline, San Marcos, 2014
SDG&E On-call, Carlsbad, 2014
TL694A, Vista, 2014
Sol y Mar, Ranchos Palos Verdes, 2013-2014
Mojave Solar Power, Hinkley, 2013
Rio Grande and Columbia 3, Rosamond, 2013
Genesis Solar Energy, Blythe, 2012-13

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Sarah Nava

Archaeologist/GIS Specialist

Expertise

Cultural Resources Management
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ArcGIS
GPS Software
Geographical Information Systems
Cultural Resources Management
California Prehistory
Cultural Records Searches

Education

CSU, Long Beach, B.A., Anth, 2008

Southwestern Comm.College, GIS Certification Program, 2014

Professional Memberships

Society for California Archaeology
Society for American Archaeology

Professional Experience

Archaeologist/GIS Specialist, DUKECRM, Feb. 2017 to present
Sr. GIS Specialist/Archaeology Technician, Sapphos Env., 2016-17
Archaeologist/GIS Specialist, Cogstone, 2016
Archaeological Crew Chief/GIS Technician, SRI, 2015-16
GIS Specialist/Research Assistant, Easter Island Statue Project, 2015
GIS Consultant, UCLA Rock Art Archive, 2015
Archaeology/GIS Technician, Cogstone, 2011-2014

Selected Project Experience

-Vila Borba, Chino Hills, 2017

-Azusa Greens, Azusa, 2017

-Golden Avenue Bridge Replacement, Placentia, 2017

-Soto Street, Los Angeles, 2017

-Sativa Water District Well Replacement, Compton, 2017

-Strauss Wind Energy Project, 2016-2017

-Fair Oaks Hospital Construction, Arroyo Grande, California, 2016

-Section 110 Intensive Archaeological Inventory on Ranges at Naval Air Weapons Station (NAWS) China Lake, 2015-2016

-California State University, Long Beach Piping Project, 2016

-Olive View Medical Center, 2016

-Evaluation of 11 Prehistoric Sites on Marine Corps Base Camp Pendleton, California, 2015-2016

-Metrolink Purple Line Extension, Los Angeles, 2016

-FY14 Section 110 Archaeological Evaluations and Eligibility Investigations on Ranges at Naval Air Weapons Station, China Lake, 2015

- FY 14 Section 110 Archaeological Surveys and Site Recordation as Supplemental, Naval Air Station (NAS), NAVFAC Southwest Division, Lemoore, California, 2015

-Emergency Archaeological Data Recovery at CA-LAN-2768, Marina del Rey 2015

-Easter Island Statue Project, Santa Monica, 2015

-Metropole Vault Replacement, SCE, Avalon California, 2014.

-Pimu, Catalina Island Archaeology Project, Two Harbors, 2013-2014

APPENDIX D

HABITAT ASSESSMENT FOR BURROWING OWL (*ATHENE CUNICULARIA*) AND LOS ANGELES POCKET MOUS (*PEROGNATHUS LONGIMEMBRIS BREVINASUS*), THE RESERVE AT RANCHO BELAGO PHASE II, MORENO VALLEY, CALIFORNIA

ASSESSOR PARCEL NUMBER 307-100-008
SOUTHWEST CORNER OF JOHN F. KENNEDY AND BAY HILL DRIVE
MORENO VALLEY, CALIFORNIA 92557

Prepared for

Mr. Eric Heffner
TOC III CA Belago LLC
c/o Bridge Investment Group Holdings
2521 State Street
Carlsbad, California 92008

June 6, 2017

Prepared by

Tetra Tech, Inc.
301 East Vanderbilt Way, Suite 450
San Bernardino, California 92408
T37169-01

ATTACHMENT E-2: TITLE PAGE

Date Report Written: 05 June 2017
Field Work Conducted: 10 May 2017

Report Title: Habitat Assessment for Burrowing Owl (*Athene cunicularia*) and Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*), The Reserve at Rancho Belago Phase 2, Moreno Valley, California

Project Site Location: Southwest corner of John F. Kennedy Drive and Bay Hill Drive, Moreno Valley, California. The site is located in Sections 32, T3S, R3W, SBBM of the Sunnymead 7.5-minute quadrangle.

Assessor Parcel Number: 304-100-008

Owner/Applicant:
Mr. Eric Heffner
ROC III CA Belago, LLC
c/o Bridge Investment Group Holdings
2521 State Street
Carlsbad, California 92008

Principal Investigator:
Tetra Tech, Inc.
310 East Vanderbilt Way, Suite 450
San Bernardino, California 92507

Report Summary: Assessor Parcel Number 304-100-007 is located on the southwest corner of John F. Kennedy Drive and Bay Hill Drive in Moreno Valley, California. The site is developed as a golf driving range that appears to not be in active use. It is surrounded on all sides by high density and single family residential developments. No sensitive plants or wildlife were observed at the site. No burrowing owls or sign of burrowing owls was observed at the site. As long as current maintenance and mowing activity occurs as the site, habitat at the site is not likely suitable for occupation by burrowing owl. It is recommended that pre-construction survey 30-days in advance of any earthwork occur be conducted to determine if conditions have changed and suitable habitat for burrowing owls is present at the site. Soils at the site are compacted and unsuitable for digging burrows by Los Angeles pocket mouse (LAPM). In addition, there are no plant communities present that would offer shelter and food sources preferred by this mammal. The non-native ruderal grasses and weeds found on site are not the typical alluvial fan scrub and coastal scrub habitat where this species occurs. No burrows potentially occupied by small mammals such as LAPM

Contact Information:

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Resume: See Appendix D

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APPENDICES

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

1.0 INTRODUCTION

Tetra Tech, Inc. was contracted by ROC III CA Belago, LLC. to conduct a general biological reconnaissance and habitat assessment for burrowing owl (*Athene cunicularia*) and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) (LAPM) at a 10-acre site (survey area) that is identified as Assessor Parcel Number (APN) 304-100-007. The purpose of the reconnaissance was to conduct a general biological reconnaissance survey for the possible presence of sensitive biological resources and to determine if habitat conditions at the site were suitable for burrowing owl and LAPM.

2.0 PROJECT LOCATION AND DESCRIPTION

Assessor Parcel Number 304-100-007 is located on the southwest corner of John F. Kennedy Drive and Bay Hill Drive in Moreno Valley, California. The site is developed as a golf driving range that appears to not be in active use. The site is located in Section 23, T3S, R3W, SBBM of the Sunnymead 7.5-minute quadrangle (USGS 1967, Revised 1980) (Figure 1).

3.0 ENVIRONMENTAL SETTING

The survey area is a golf course driving range that, while maintained, appears to not be in use. It is surrounded on all sides by high density and single family residential developments. Photographs 1 through 8 depict the survey area and the location and direction of the photographs may be found on Figure 2. Plants observed at APN 304-100-007 are primarily non-native grasses ruderal weeds (Figure 1). Ruderal plants are typically those plants that initially colonized disturbed lands. These types of plants are typically non-native introduced weeds. The survey area is surrounded on all sides by single family and high density residential developments plus associated infrastructure.

X:\GIS\Rancho Belago Phase II Site\photos 1-2.CDR

Photograph 1: View of The Reserve at Rancho Belago Phase II site. View to the south.

Photograph 2: View of The Reserve at Rancho Belago Phase II site. View to the west.

X:\GIS\Rancho Belago Phase II Site\photos 3-4.CDR

Photograph 3: View of culvert located on the southwestern side of The Rancho Belago Phase II Site. View to the southwest.

Photograph 4: View of The Reserve at Rancho Belago Phase II site from the southern side. View to the north.

Photograph 5: View of disturbed Riversidean Desert Scrub habitat located within the Rancho Belago Phase II Site. View to the north.

Photograph 6: View of The Rancho Belago Phase II site from the southwestern side. View to the northeast.

X:\GIS\Rancho Belago Phase II Site\photos 7-8.CDR

Photograph 7: View of culvert located on the western side of the site. View to the west.

Photograph 8: View of the northern portion of The Rancho Belago Phase II Site. View to the north.

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

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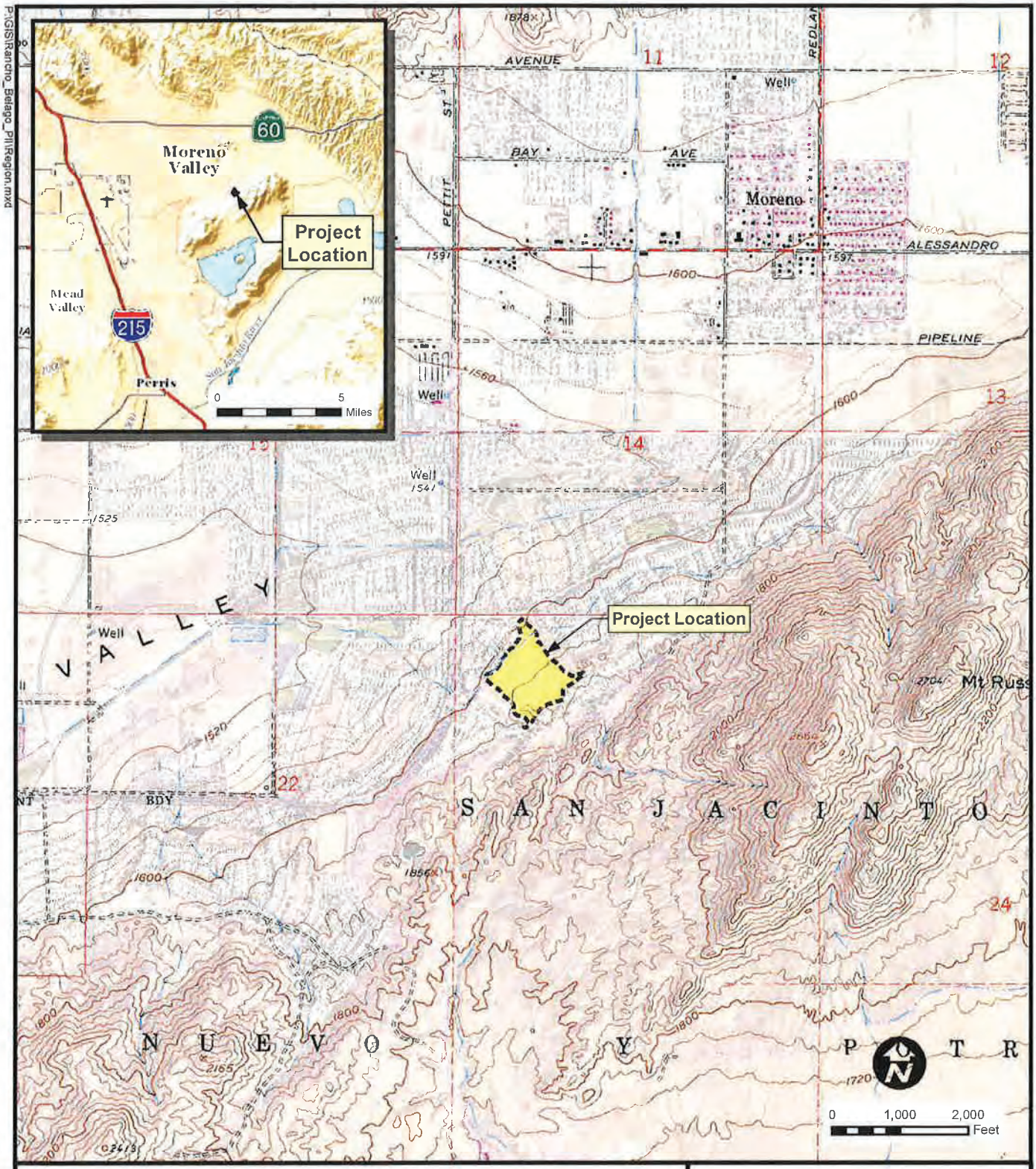

Project Boundary

THE RESERVE AT RANCHO BELAGO
PHASE II

Figure 1

Project Location

Source:
USGS 7.5' topographic quadrangle, Sunnymead, CA 1967, revised 1980.
NAIP aerial image, May 2016.

TETRA TECH

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

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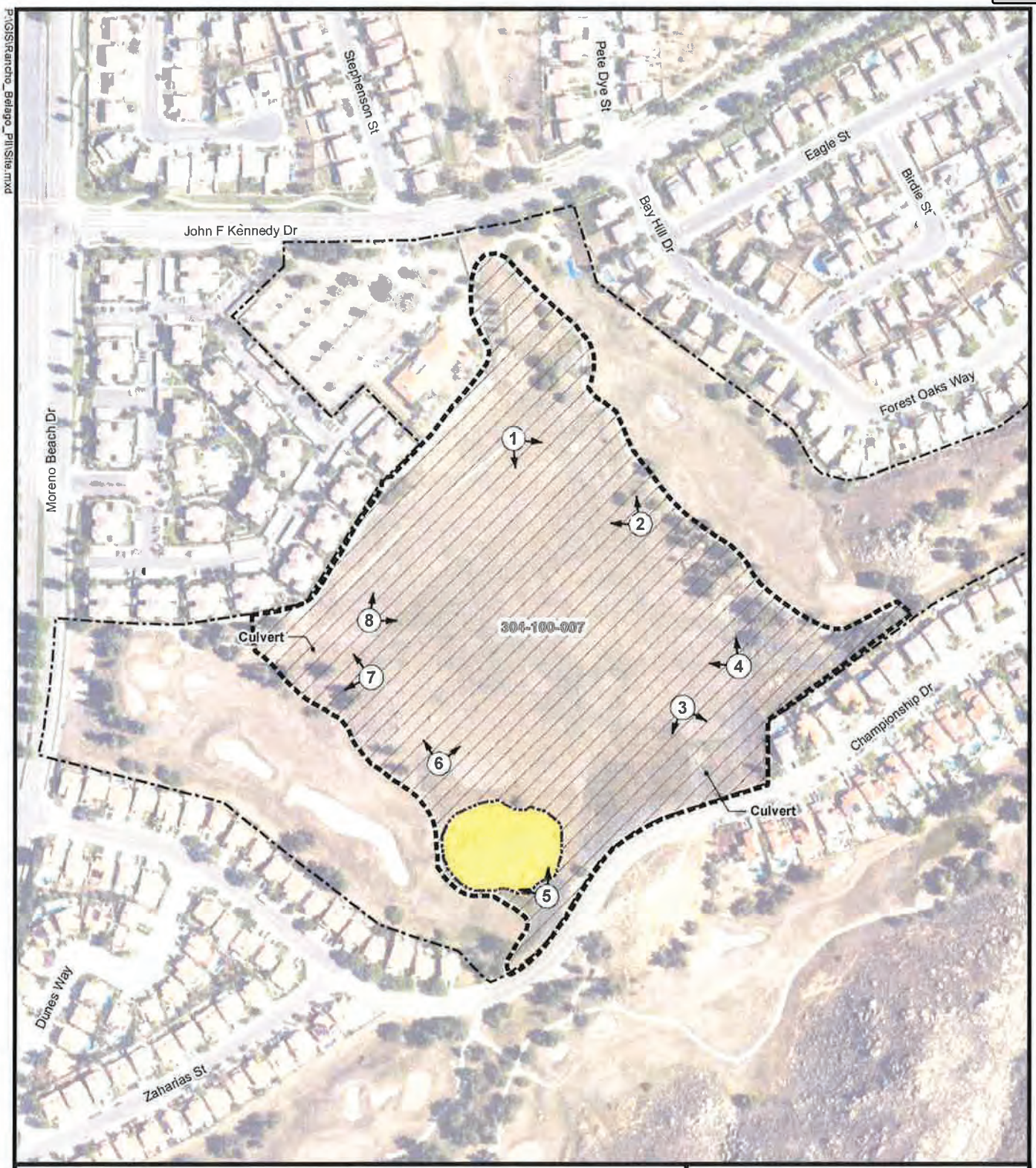

Project Boundary/Survey Area

Assessor Parcel Boundary

Disturbed Riversidean Desert Scrub-Brittle bush series

Non-Native Ruderal Grasslands

1 Photo Locations

N

0 150 300 Feet

THE RESERVE AT RANCHO BELAGO PHASE II

Figure 2

Habitat Map and Survey Area

TETRA TECH

4.0 BIOLOGICAL RECONNAISSANCE AND HABITAT ASSESSMENT FOR BURROWING OWL AND LOS ANGELES POCKET MOUSE

4.1 METHODS

As identified in our proposal dated 22 March 2017, APN 304-100-007 and a portion of APN 304-100-008 were been identified as the project area. Both APNs are located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The MSHCP has identified that for APN 304-100-008, a habitat assessment would be required and should address at a minimum potential habitat for burrowing owl and Los Angeles pocket mouse. No biological resources requirements related to the MSHCP have been identified for APN 304-100-007. It was conveyed to Tetra Tech that the City of Moreno Valley had requested that a reconnaissance survey for possible suitable habitat for burrowing owls and LAPM associated with APN 304-100-007 was required. During an initial visit to the site, Tetra Tech was informed that the project area had changed and now only included land associated with APN 304-100-007.

The available literature on natural resources with reference to biological resources for APN 304-100-007 area were consulted including information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB). A detailed biological resources survey was conducted and concluded on 10 May 2017. The survey was started at 7:30 AM with overcast skies and the temperature at the start of the survey was 72 °F. The survey was completed at 10:30 AM with a final temperature readings of 79 °F. All areas of the site were accessible. Meandering transect surveys with 30 meters (100 foot) separation were conducted at the site and 100 percent of the site was surveyed for biological resources. To not trespass outside the site, the 150 meter (500 foot) buffer zone in the adjacent areas of the site was surveyed using binoculars for suitable habitat for burrowing owl. The site and adjacent undeveloped areas to the site were surveyed for dominant plant species and natural communities. Concurrent with the survey for suitable habitat for burrowing owl, the site was also evaluated for suitable habitat for occupation by LAPM.

4.2 RESULTS OF DATABASE SEARCH

Plant and wildlife species classified as rare, threatened, or endangered; proposed for listing as endangered or threatened; or candidate species for listing by federal and/or state resource agencies are considered "sensitive." A list of Sensitive Biological Resources that have the potential for presence in the survey

area and likely occurrence probability for presence in the survey area are found in Appendix A. The site is highly disturbed from development as a golf driving range. The highly disturbed condition of the site precludes the presence of sensitive biological resources. Plants at the site are composed of non-native grasses and weeds. A mixture of native plants and non-native weeds is found in the southern portion of the site. Due to the disturbed nature of the site, the presences of sensitive biological resources are considered to be absent from the site.

Project Findings. Based on site conditions, it is estimated that sensitive resources identified in a review of the CNDDB are absent to be present at the site due to the developed nature and high degree of disturbance. No impacts to these resources would occur. No recommendations are made.

4.3 RESULTS OF FIELD INVESTIGATION

4.3.1 Plant Communities and Wildlife in the Project Area

As indicated earlier in this report, the survey area has been developed as a golf driving range. Non-native grasses and ruderal herbaceous plants with some non-native landscaping trees were present in most of the area surveyed at the site. A very small area of native plants mixed with an understory of non-native weeds was observed in the southern portion of the site. As detailed earlier, ruderal describes plants that are typically considered weedy and tend to be non-native and noxious invaders of disturbed lands. No sensitive plants were observed in the survey area. Appendix B provides a comprehensive list of plants observed in the survey area.

Project Findings. No sensitive plants or plant communities were observed at the site. No impacts to these resources would occur. No recommendations are made.

4.3.2 Burrowing Owl Habitat Assessment Results

The burrowing owl (*Athene cunicularia*) is currently listed as a Species of Special Concern by the California Department of Fish and Wildlife (formerly known as the California Department of Fish and Game). It is also subject to United States Fish and Wildlife Service regulation under the Migratory Bird Act of 1918. Burrowing owls are ground dwelling birds that are often seen during the day standing erect on the ground or on posts. The burrowing owl is a yearlong resident of open, dry grassland and desert habitat. They are also found as residents in grass, forbs and open shrub stages of pinyon-juniper and ponderosa pine habitats. Often considered diurnal, burrowing owls tend to be entirely nocturnal or at least crepuscular (active at dawn and dusk) and are frequently seen perching in open areas during the early morning and late afternoon at or near the entrance of their burrow or on a nearby low perch.

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Burrowing owls typically use burrows made by fossorial animals such as California ground squirrels (*Otospermophilus beecheyi*) as nesting sites but will also use man-made structures such as cement culverts, deposited debris piles or openings beneath cement or asphalt pavements (California Department of Fish and Game 2012).

Burrowing owls are found in varying population sizes throughout Northern America and spend winters south as far as Central America. Their numbers have been drastically reduced in California in the past 60 years due to conversion of grasslands by agriculture and urbanization as well as due to consuming poison bait set for ground squirrels.

The site was surveyed on foot with parallel transects and no more than 30 meter (100 feet) separation. No owls or sign of owls were found on the site. California ground squirrel burrows were observed in areas adjacent to the site. As the site is regularly mowed and maintained, occupation by California ground squirrels has been discouraged.

Project Findings. There is no potential suitable habitat for occupation by burrowing owls was observed on site and in the undeveloped buffer zone. No burrowing owls were observed on the site or in the buffer zones to the site. No sign of burrowing owl were observed on the site or in the buffer zones to the site.

As long as current maintenance and mowing activity occurs as the site, habitat at the site is not likely suitable for occupation by burrowing owl. It is recommended that pre-construction survey 30-days in advance of any earthwork occur be conducted to determine if site conditions have changed and suitable habitat for burrowing owls is present at the site.

4.3.3 Los Angeles Pocket Mouse Habitat Assessment Results

The LAPM is one of two pocket mice found in this area of Riverside County (Williams 1986). Both the Los Angeles pocket mouse and the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) occupy similar habitats, but the northwestern San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of LAPM is described as being confined to lower elevation grasslands and coastal sage scrub habitats, in areas with soils composed of fine sands (Williams 1986). This species prefers habitat similar to that of the Stephens' kangaroo rat (*Dipodomys stephensi*) and San Bernardino kangaroo rat (*D. merriami parvus*). It occurs in open sandy areas in the valley and foothills of southwestern California (Hall 1981). The LAPM is identified as a Species of Special Concern by the CDFW.

Los Angeles pocket mouse, like other subspecies of *Perognathus longimembris*, are granivorous rodents and specialize on grass and scrub seeds, but will take insects when available (French 1999; Meserve 1976). Pocket mice possess external, fur-lined cheek pouches used in collecting and caching of seeds. Seeds are cached for use during the colder months of the year.

They spend most of their foraging time in or near bushes, scrubs, rock crevices, or other sources of cover. The LAPM is primarily nocturnal and exhibits a distinct seasonal pattern in surface activity. During colder months the pocket mouse may enter into torpor (dormancy) and not engage in surface activity. This species may enter torpor as early as the end of September; the exact date may depend on the nightly low temperatures, and the availability of food. At some point when surface conditions are very cold and food is scarce, the animal cannot meet its energy needs by foraging and thus must shut down surface activity to survive the winter. LAPM must then survive on the food they have cached (Richman and Price 1993). Los Angeles pocket mice emerge in the spring when the surface ground temperatures are higher than the surrounding ground temperature in their burrows (French 1999).

The present known distribution of this species in Riverside and San Bernardino counties extends from the San Gabriel and San Bernardino mountains south to the Temecula and Aguanga areas, and from the east side of the Santa Ana Mountains east to Cabazon (Hall 1981).

Project Findings. Soils at the site have been compacted as a result of the routine mowing and maintenance as part of its development as a golf driving range. Soil condition is less than suitable for digging burrows by LAPM. There is only a minor area of the site with native plants (Figure 2). This area is isolated from adjacent open areas found to the south by surrounding areas of APN 304-100-007 and Championship Drive. The non-native grasses and ruderal weeds found on site are not the typical alluvial fan scrub and coastal scrub habitat where this species occurs. No burrows potentially occupied by small mammals such as LAPM were observed at the site. Occupation by LAPM at the site is not likely. No recommendations are made.

4.3.4 Critical Habitat

The survey area is not within designated critical habitat or proposed designated critical habitat. No designated critical habitat or proposed critical habitat has been identified on or adjacent to the site.

Project Findings. No critical habitat or proposed critical habitat would be impacted by projects proposed at the site. The site is located within the MSHCP and, if relevant, appropriate fees for loss of habitat would be assessed as part of the project implementation process. No recommendations are made.

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

4.3.5 Riverine/Riparian and Vernal Pool Habitat

No vernal pools or habitat likely to have supported vernal pools were observed on the site. There is a culvert located in the southeastern portion of the site that would direct stormwater derived off site to the southeast to flow into the site (Figure 2, Photograph 3). A second culvert is found in the western portion of the site that directs stormwater flow also derived off site to the west to flow into the site (Figure 2, Photograph 7). Despite the presence of culverts within the site that would clearly present an opportunity for stormwater to flow into the site, no riverine habitat was noted. As indicate earlier, the site has been developed and is maintained as a golf driving range. The maintenance activity likely prevents riverine habitat from developing on site.

Project Findings. No vernal pool habitat would be impacted by the proposed project at the site. No impacts to this resource would occur. No recommendations are made. Despite the presence of culverts directing stormwater flow into the site, no riverine habitat was observed during the reconnaissance. No impacts to this resource would occur. No recommendations are made.

4.3.6 Urban/Wildlife Interface Guidelines

The MSHCP has designated Criteria Areas within the plan area. Within the Criteria Area, individual cells or cell groupings have been identified and criteria for conservation have been determined. The site is located within the Reche Canyon/Badlands Area Plan Unit and is not located within any designated Criteria Areas.

Project Findings. The site is not located within a designated Criteria Area as defined by the MSHCP. No impacts would occur. No recommendations are made.

4.4 CONCLUSIONS AND RECOMMENDATIONS

No sensitive plants or wildlife were observed at the site. No burrowing owls or sign of burrowing owls was observed at the site. As long as current maintenance and mowing activity occurs as the site, habitat at the site is not likely suitable for occupation by burrowing owl. It is recommended that pre-construction survey 30-days in advance of any earthwork occur be conducted to determine if conditions have changed and suitable habitat for burrowing owls is present at the site.

Soils at the site are compacted and unsuitable for digging burrows by LAPM. In addition, there are no plant communities present that would offer shelter and food sources preferred by this mammal. The non-native ruderal grasses and weeds found on site are not the typical alluvial fan scrub and coastal scrub habitat where this species occurs. No burrows potentially occupied by small mammals such as LAPM

were observed at the site. Occupation by LAPM at the site is not likely. No recommendations are made with regard to LAPM are made. Appendix C details project findings and recommendations as per the MSHCP requirements and Appendix D include the resume of the project biologist.

5.0 CERTIFICATION

"***Certification:*** *I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological reconnaissance and habitat assessment for burrowing owl and Los Angeles pocket mouse and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.*"

DATE: 05 June 2017 SIGNED: Stephanie Pacheco

Report Author

Field Work Performed by: Stephanie Pacheco, Tetra Tech, Inc.

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Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

APPENDIX A SENSITIVE BIOLOGICAL RESOURCES

Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Plants			
Round-leaved filaree (*California macrophylla*)	Cismontane woodland, valley and foothill grasslands; clay soils	Federal : ND State: ND CNPS: 1B.1	Absent; occurrence noted 30 years ago (1976); no likely habitat at the site or in adjacent areas to the site.
Smooth tarplant (*Centromadia pungens* ssp. *laevis*)	Valley and foothill grasslands, chenopod scrub, meadows, playas, riparian woodlands	Federal : ND State: ND CNPS: 1B.1	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for this plant.
Parry's spineflower (*Chorizanthe parryi* var. *parryi*)	Coastal scrub, chaparral, sometimes at the interface of two types of vegetation such as chaparral and oak woodlands, sandy soils.	Federal : ND State: ND CNPS: 1B.1	Absent; occurrence noted 30 years ago (1950); no likely habitat at the site or in adjacent areas to the site.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	Coastal salt marshes, playas, valley and foothill grasslands, vernal pools, usually found on alkaline soils.	Federal : ND State: ND CNPS: 1B.1	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	Chaparral, coastal scrub, and dry soils.	Federal : ND State: ND CNPS: 1B.2	Absent; occurrence noted 30 years ago (1952); no likely habitat at the site or in adjacent areas to the site.
San Bernardino aster (*Symphyotrichum defoliatum*)	Meadow and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grasslands, vernally mesic grasslands, streams and springs.	Federal : ND State: ND CNPS: 1B.2	Absent; occurrence noted 30 years ago (1951); no likely habitat at the site or in adjacent areas to the site.
Birds			
Cooper's hawk (*Accipiter cooperii*)	Nests in woodlands, open or interrupted or marginal woodlands, riparian growths or deciduous trees, canyon bottoms on river flood-plains	Federal: ND State: ND	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation. The site could be used as forage.
Tricolor blackbird (*Agelaius tricolor*)	Highly colonial species requires open water and protected substrate associated with marshes.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.

Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Birds (continued)			
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	Southern California coastal sage scrub and sparse mixed chaparral; steep, often rocky hillsides with grass and forb patches.	Federal: ND State: ND	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Burrowing owl (*Athene cunicularia*)	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Federal: ND State: California Species of Concern	**Low**; known occurrences have been recorded between 5 and 10 miles from the site. If the site is allowed to go fallow, conditions may be suitable for occupation by burrowing owl.
Bell's sage sparrow (*Artemisiospiza belli belli*)	Nests in chaparral dominated by fairly dense stands of chemise. Found in coastal sage scrub habitat.	Federal: ND State: California Species of Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Ferruginous hawk (*Buteo regalis*)	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.	Federal: ND State: ND	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation. The site could be used as forage.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	Nests in riparian jungles of willow often mixed with cottonwoods with a lower story of blackberry, nettles or wild grape.	Federal: FT State: SE	Absent; While known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Yellow-breasted chat (*Icteria virens*)	Summer resident of riparian thickets of willows and other brushy tangles near water courses.	Federal: ND State: California Species of Special Concern	Absent; While known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Coastal California gnatcatcher (*Polioptila californica californica*)	Obligate resident of coastal sage scrub in arid washes on mesas and slopes.	Federal: FT State: California Species of Concern	Absent; While known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.

Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Birds (continued)			
Lawrence's goldfinch (*Spinus lawrencei*)	Nests in open oak or other arid woodland and chaparral; near water and herbaceous habitats for foraging.	Federal: ND State: ND	Absent; While known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Least Bell's vireo (*Vireo bellii pusillus*)	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms.	Federal: FT State: SE	Absent; While known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Amphibians			
Western spadefoot (*Spea hammondii*)	Primarily in grassland habitat but can be found in valley-foothill hardwood woodlands; vernal pool required for breeding and egg-laying.	Federal: ND State: California Species of Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Mammals			
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	Coastal scrub, chaparral, grasslands with sandy soils, herbaceous areas usually associated with rocks or coarse gravel.	Federal: ND State: California Species of Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Stephens' kangaroo rat (*Dipodomys stephensi*)	Primarily annual and perennial grasslands but also occurs in coastal scrub and sagebrush with sparse canopy cover.	Federal: FE State: ST	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	Alluvial scrub vegetation on sandy loam substrate characteristic of alluvial fans and flood plans.	Federal: FE State: Species of Special Concern	Absent; occurrence noted 30 years ago (1913); no likely habitat at the site or in adjacent areas to the site.
Western mastiff bats (*Eumops perotis californicus*)	Many open , semi-arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, roosts in crevices of cliff faces, high buildings, trees and tunnels	Federal: ND State: Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation. The site could be used as forage.

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Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Mammals (continued)			
Western yellow bat (*Lasiurus xanthinus*)	Valley foothill riparian areas desert riparian and wash areas. Roosts in trees particularly in palms and forages over water and among trees.	Federal: ND State: ND	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation. The site could be used as forage.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	Intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous edges.	Federal: ND State: Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	Lower elevation grasslands and coastal sage communities; open ground with fine sandy soils. Will use weeds and dead leaves as cover.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, soils have been compacted as part of maintenance activities. Very little native plants for forage are present at the site.
American badger (*Taxidea taxus*)	Most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	Federal: ND State: California Species of Concern	Absent; occurrence noted 30 years ago (1908); no likely habitat at the site or in adjacent areas to the site.
Reptiles			
Orange-throated whiptail (*Aspidoscelis hyperythra*)	Low elevation coastal scrub and prefers washes and other sandy areas with patches of brush and rocks, perennial plants necessary for termites, a major food source.	Federal: ND State: California Species of Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Coastal whiptail (*Aspidoscelis tigris stejnegeri*)	Found in desert and semiarid areas with sparse vegetation and open areas, woodlands and riparian areas. Ground may be firm soil, sandy or firm	Federal: ND State: ND	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Northern red-diamond rattlesnake (*Crotalus ruber*)	Chaparral, woodland, grassland or desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.

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Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Reptiles (continued)			
Western pond turtle (*Emys marmorata*)	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches; usually with aquatic vegetation.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Coast horned lizard (*Phrynosoma blainvillii*)	Inhabits coastal sage scrub and chaparral in arid and semi-arid climates.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Coast patch-nose snake (*Salvadora hexalepis virgultea*)	Brushy or shrubby vegetation in coastal southern California; requires small mammal burrows for refuge and overwintering sites.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Habitat			
Southern Sycamore Alder Riparian Woodland		No designation	This habitat type is not found on the site or in adjacent areas to the site.

Appendix A
Sensitive Biological Resources
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Notes:
ND No Designation

Federal Status:
C Candidate species
FE Federally listed Endangered
FT Federally listed Threatened
FPD Federally proposed for Delisting

State Status:
SE State listed Endangered
ST State listed Threatened
CSC California Department of Fish and Game Species of Concern
P California Department of Fish and Game Protected Species (Fully)

California Native Plant Society (CNPS) List:
1A Plants presumed extinct in California
1B.1 Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2 Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
1B.3 Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
2.1 Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2.2 Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
2.3 Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
3.1 Plants about which we need more information; seriously threatened in California
3.2 Plants about which we need more information; fairly threatened in California
3.3 Plants about which we need more information; not very threatened in California
4.1 Plants of limited distribution; seriously threatened in California
4.2 Plants of limited distribution; fairly threatened in California
4.3 Plants of limited distribution; not very threatened in California

Source: California Department of Fish and Game, Natural Diversity Data Base, Sunnymead USGS 7.5' Quadrangle, 08 May 2017

Criteria:
Present: Species was observed in or immediately adjacent to the Study Area within the past 5 years.
High: Habitat (including vegetation, soils and elevation factors) and known historical range for the species occurs in the Study Area and a known occurrence has been recorded within 5 miles and within the past 30 years.
Moderate: Habitat for the species occurs in the Study Area and a known occurrence has been recorded between 5 and 10 miles away within the past 30 years. Or historical range for the species occurs in the Study Area and a known occurrence has been recorded within 5 miles and within the past 30 years with only two of three habitat parameters present (appropriate vegetation, soils and elevation)
Low: Limited habitat for the species occurs in the Study Area and known occurrences are greater than 10 miles from the Study Area or over 30 years old. Or habitat quality is poor with only one parameter present (appropriate vegetation, soils and elevation).
Absent: Beyond those factors listed for Low potential, the species is easily identifiable throughout the year and was not observed (i.e., most tree species).

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

APPENDIX B FLORA AND FAUNA COMPENDIUM

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Appendix B
Flora and Faunal Compendium
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Flora	Flowering Plants
Gymnospermae	**Naked-Seed Plants**
Pinacea	**Pine Family**
Pinus eldarica	Mondale pine*
Angiospermae: Monocotyledonae	**Monocot Flowering Plants**
Poaceae	**Grass Family**
Hordeum vulgare	Barley*
Arecaceae	**Palm Family**
Washingtonia filifera	Fan palm
Angiospermae: Dicotyledonae	**Dicot Flowering Plants**
Aizoaceae	**Ice Plant Family**
Mesembryanthemum crystallinum	Common ice plant*
Anacardiaceae	
Schinus molle	Peruvian pepper*
Schinus terebinthifolius	Brazilian pepper*
Amaranthaceae	**Pigweed Family**
Amaranthus albus	Tumble pigweed*
Amaranthus blitoides	Prostrate pigweed*
Asteraceae	**Sunflower Family**
Conyza canadensis	Horseweed*
Encelia farinosa	Brittlebush
Matricaria matricarioides	Pineapple weed
Sonchus oleraceus	Sow thistle*
Brassicaceae	**Mustard Family**
Hirschfeldia incana	Short-pod mustard*
Sisymbrium irio	London rocket*
Cactaceae	**Cactus Family**
Cylindropuntia californica	California cholla
Chenopodiaceae	**Goosefoot Family**
Salsola tragus	Russian thistle*
Jacarandae	**Jacaranda Family**
Jacaranda mimosifolia	Jacaranda*
Polygonaceae	**Buckwheat Family**
Eriogonum fasciculatum	California buckwheat
Tamaricaceae	**Tamarisk Family**
Tamarisk ramosissima	Salt cedar*

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Appendix B
Flora and Faunal Compendium
The Reserve at Rancho Belago Phase II
Moreno Valley, California

Fauna	Birds
Aves	**Birds**
Accipitridae	**Falcons**
Buteo jamaicensis	Red-tailed hawk
Charadriidae	**Plovers, Dotterels and Lapwings**
Charadrius vociferus	Killdeer
Columbidae	**Pigeon and Doves**
Zenaida macroura	Mourning dove
Corvidae	**Jays, Crows and their Allies**
Columba livia	Feral dove
Corvus brachyrhynchos	American crow
Fringillidae	**Finches**
Haemorhous mexicanus	House finch
Passeridae	**Old World Sparrow**
Passer domesticus	English sparrow
Picidae	Woodpeckers,
Dryobates nuttallii	Nuttall's woodpecker
Trochilidae	**Hummingbird Family**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant Flycatchers**
Sayornis saya	Say's phoebe
Fauna	**Animals**
Mammalia	**Mammals**
Geomydae	**Pocket gopher**
Thomomys bottae	Botta's pocket gopher
Sciuridae	**Squirrels**
Spermophilus beecheyi	California ground squirrel

* Denotes non-native plant

Baldwin, B.G., D. H. Goldman, D. J. Keil, R, Pattterson, T. J. Rosatti, and D.H. Wilkin, editors.
2012 *The Jepson manual: Vascular plants of California, second edition.* University of California Press.

Hall, E.R.
1981. *The Mammals of North America*, Volumes I and II. John Wiley and Sons, New York, New York.

Sibley, D.A.
2003 The *Sibley Field Guide to Birds of Western North America*. Andrew Stewart Publishing,

Whitson, T. D., ed., L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, and R. Parker
1997 *Weeds of the West*. Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services.

APPENDIX C BIOLOGICAL REPORT SUMMARY SHEETS

Attachment E-3

BIOLOGICAL REPORT SUMMARY SHEET

Applicant Name: Mr. Eric Heffner, ROC III CA Belago, LLC.
Assessor's Parcel Number(s) (APN): 304-100-007
APN cont. :
Site Location: Section: 23 **Township:** T3S **Range:** R3W
Site Address: NA
Related Case Number(s): Unknown **PDB Number:** unknown

Check ITEM(S) Habitat Assessment	*Check ITEM(S)* * Focused Survey	SPECIES or HABITAT OF CONCERN	(Circle whether a potential for significant impact to species or resource exists **)	
		Arroyo Southwestern Toad	Yes	No
✓		Drainages/Waters of U.S.	Yes	(No)
		Coachella Valley Fringed-Toed Lizard	Yes	No
		Coastal California Gnatcatcher	Yes	No
		Coastal Sage Scrub	Yes	No
		Delhi Sands Flower-Loving Fly	Yes	No
		Desert Pupfish	Yes	No
		Desert Slender Salamander	Yes	No
		Desert Tortoise	Yes	No
		Flat-Tailed Horned Lizard	Yes	No
		Least Bell's Vireo	Yes	No
		Oak Woodlands	Yes	No
		Quino Checkerspot Butterfly	Yes	No
		Riverside Fairy Shrimp	Yes	No
		Santa Ana River Woolystar	Yes	No
		San Bernardino Kangaroo Rat	Yes	No
		Slender Horned Spineflower	Yes	No
		Stephens' Kangaroo Rat	Yes	No
✓		Vernal Pools	Yes	(No)

Check ITEM(S) Habitat Assessment	*Check ITEM(S)* * Focused Survey	SPECIES or HABITAT OF CONCERN	(Circle whether a potential for significant impact to species or resource exists **)	
✓		Wetlands	Yes	(No)
✓		Riparian Habitat	Yes	(No)
✓		Burrowing Owl	Yes	(No)
		Bighorn Sheep	Yes	No
		Red-legged Frog	Yes	No
✓		Other Los Angeles pocket mouse	Yes	(No)
		Other	Yes	No
		Other	Yes	No
		Other	Yes	No
		Other	Yes	No

* Focused Survey: a) Survey on a listed species performed per USFWS or CDFG protocol by licensed individual (i.e., CaGn, SKR, QCB), OR b) For non-listed spp., survey performed per protocol recognized by USFWS or CDFG, or other applicable agency (i.e., Burrowing Owl), OR c) For jurisdictional waters, wetlands, & riparian areas, following protocol of U.S.Army Corp of Engineers.

** Species of concern are any unique, rare, endangered, or threatened species; species used to delineate wetlands and riparian corridors; and any hosts, perching, or food plants used by any animals listed as rare, endangered, threatened or candidate species by either State or Federal regulations, or those tracked by the California Department of Fish and Game Natural Diversity Data Base (NDDB).

I declare under penalty of perjury that the information provided on this summary sheet is in accordance with the information provided in the biological report.

Stephanie Parker — 06/05/17

Signature and Title — Date Report Prepared

N/A

10(a) Permit Number (if applicable) — 10(a) Permit Expiration Date

County Use Only

Received by: _____ **Date:** _____

PD-B# _____ **Related Case #:** _____

Attachment E-4

LEVEL OF SIGNIFICANCE CHECKLIST FOR BIOLOGICAL RESOURCES

APN *: 304-100-007 **Riverside County Case No.*:** Unknown **EA Number:**_____

Wildlife & Vegetation

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

(*Check the level of impact that applies to the following questions*)

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?

No impact

b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?

No impact

c) 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 Game or U. S. Wildlife Service?

No impact

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No impact

e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?

No Impact

f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act or Section 1600 of the California Fish and Game Code (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact

h) Create any impact which is individually limited, but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual 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 as defined in Section 15130 (14 Calif. Code of Regs).

No impact

* Required

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

LEVEL OF SIGNIFICANCE CHECKLIST FOR BIOLOGICAL RESOURCES

Findings of Fact:

Assessor Parcel Number 304-100-007 has been developed as a golf driving range. Habitat at this site is open non-native grasslands dominated by ruderal non-native weeds with non-native landscaping trees. One small area in the southern part of the site has disturbed native plants with an understory dominated by non-native weeds. No sensitive plants or wildlife were observed at the site. No suitable habitat for sensitive plants or wildlife is present at the site. No burrowing owls or sign of burrowing owls was observed at the site. As a result of regular maintenance activities, suitable habitat for occupation by burrowing owls is not present at the site. Soils are hard and compacted by continual maintenance as a golf driving range. No suitable habitat for occupation by Los Angeles pocket mouse is present at the site.

Proposed Mitigation:

There is no potential suitable habitat for occupation by burrowing owls was observed on site and in the undeveloped buffer zone. No burrowing owls were observed on the site or in the buffer zones to the site. No sign of burrowing owl were observed on the site or in the buffer zones to the site. As long as current maintenance and mowing activity occurs as the site, habitat at the site is not likely suitable for occupation by burrowing owl. It is recommended that pre-construction survey 30-days in advance of any earthwork occur be conducted to determine if site conditions have changed and suitable habitat for burrowing owls is present at the site.

Monitoring Recommended:

None Recommended.

Prepared By: Stephanie Parker Date: 06/05/17

County Use Only

Received by: _____ Date: _____

PD-B# _____ Related Case #: _____

APPENDIX D RESUME FOR STEPHANIE PACHECO

TETRA TECH

Stephanie Pacheco
Principal Soil Scientist

Education:
University of California, Riverside
M.S., Soil Science, 1989

Arizona State University, Tempe, Arizona
B.S., Environmental Resources in Agriculture, 1985

Registrations/Certifications:
Jurisdictional Delineation of Wetlands Certification, University of California Berkeley, 1996

Professional Affiliations:
Soil Science Society of America

American Society of Agronomy

Office:
San Bernardino, CA

Years of Experience:
27

Years with Tetra Tech:
27

Ms. Pacheco is a soil scientist with more than 26 years of experience as both a project manager and field scientist for many field investigations of biological resources associated with Edwards Air Force Base and other sites in southern California and Arizona. She has managed field investigations for listed and sensitive biological resources and has a comprehensive understanding of the regulatory environment associated with listed biological resources in California. As a delineator, Ms. Pacheco has completed numerous delineations of potential waters subject to regulatory authority in Southern California. She has successfully negotiated permits for both commercial entities, governmental agencies and non-governmental sovereign nations to satisfy Section 404 and 401 of the Clean Water Act plus California Department of Fish and Wildlife Code 1600 for projects impacting waters subject to regulatory authority. In support of these projects, she has determined potential project impacts to jurisdictional waters and received concurrence from both federal and state of California regulators on these findings. Consistent with Section 404 of the Clean Water Act, Ms. Pacheco has negotiated use of Nationwide Permits for utility line projects, linear transportation projects and clean-up of hazardous and toxic waste projects. She has also successfully completed an Individual Permit for a large development project in San Bernardino County. Ms. Pacheco is familiar with the requirements for seeking concurrence from the U.S. Army Corps of Engineers for Approved Jurisdictional Determinations/Preliminary Jurisdictional Determinations. Ms. Pacheco has successfully negotiated 401 Water Quality Certifications with the Lahontan, Los Angeles, Santa Ana and Colorado River Basin Regional Water Quality Control Boards. Finally, Ms. Pacheco has successfully negotiated Streambed Alteration Agreements in compliance with California Department of Fish and Wildlife Code for projects located in Los Angeles, San Bernardino and Riverside Counties.

EXPERIENCE

Biological Surveys

Habitat Assessment and for CALMAT Restoration Site, Riverside County Regional Park and Open Space District. Project manager and lead field surveyor for a general biological reconnaissance and habitat assessment for burrowing owl (*Athene cunicularia*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*, Criteria Area plant species and narrow endemic plant species at a 279.26-acre site located in an unincorporated area of Riverside County, California. The purpose of the reconnaissance was to conduct a general biological reconnaissance survey for the possible presence of sensitive biological resources and to determine if habitat conditions at the site were suitable for burrowing owl, Los Angeles pocket mouse, Criteria Area and narrow endemic plant species. The site will be used as mitigation for habitat losses. Restoration activities would include removal of non-native invasive weeds that dominate the site.

Focused Burrowing Owl (*Athene cunicularia*) Survey and Habitat Assessment for Commercial Projects, Riverside County, California. A number of Phase I and Phase II surveys were conducted for burrowing owl to determine likely habitat to support this raptor at various locations in Riverside County. For areas determined likely to support burrowing owl, Phase III focused surveys were conducted on three additional days were completed. Burrowing owl habitat assessment and surveys were conducted in compliance with the Western Riverside County Multi-species Habitat Conservation Plan.

TETRA TECH

Stephanie Pacheco
Principal Soil Scientist

Population Study, Reproductive Study and Germination Trials of Desert Cymopterus (*Cymopterus deserticola*) at Edwards Air Force Base, California. Project manager for a population study of desert cymopterus at two known populations on Edwards AFB. The population study was performed to determine population viability and environmental constraints of this plant. Provided project design and implementation as well as project management for this phase of investigations associated with desert cymopterus. Project manager for a study of the environmental and biological elements that may contribute to the reproductive success of desert cymopterus at two previously studied sites. Provided project design and implementation as well as project management for this phase of investigations associated with desert cymopterus. Project manager for a bench scale project designed to determine the best strategy for germinating desert cymopterus seeds. Numerous bench scale tests determined that cool, moist conditions in agar growth media with diurnal light was the best conditions to break dormancy and initiate germination.

Habitat Quality Assessment Surveys, 2003-2004, 2006, 2008-2009, Edwards Air Force Base, California. Project manager for field surveys of small mammals, large mammals, birds and reptiles at 60 pre-set grids at Edwards Air Force Base completed annually from 2003 to 2009. Data collection at prime habitat grids will be used by Edwards AFB to set goals for re-establishing desert habitat disturbed on base. He Habitat Quality Assessment surveys were completed by Tetra Tech at Edwards AFB in 1993. The methodology for this long-term monitoring project was devised by the Tetra Tech San Bernardino team to determine restoration goals for a large reservoir project in western Riverside County.

Study of Sonoran Pronghorn Antelope on the Barry M. Goldwater Range, Luke AFB, Arizona (2004-2005). Project Manager, responsible for the management of a study of ecological factors that may influence Sonoran pronghorn (SPH) (*Antilocapra americana sonoriensis*) antelope behavior. Tetra Tech reviewed available date and conducted natural resource surveys at the Barry M. Goldwater Range (BMGR). The goal was to collect and evaluate data about the hydrology, soil and vegetation of the BMGR in support of the ecology of the SPH. An evaluation of an existing database that contains sighting locations of SPH was also performed. Based on the study conducted, differences were observed in plants and hydrology between the study areas. Physical properties of soils associated with craters did not enhance the ability of the craters to retain water. Water retention in the craters appeared to be based on location within the landscape. Date collected during the field effort in the spring 2005 in conjunction with sighting data collected from 1999 to 2001 suggests that the animals are not preferentially selecting the HE hills over other locations they frequent on the BMGR.

Permitting and Jurisdictional Delineations

Delineation of Waters Subject to Regulatory Authority and Related Permits, White Knob-White Ridge Quarry, Lucerne, San Bernardino County, California. A delineation for jurisdictional wetland/ waters of the U.S. and waters of the State was completed for unnamed drainages in a 302-acre survey area associated with the White Knob Quarry in Lucerne Valley, San Bernardino County, California. The survey area included areas currently being quarried and portions of the site that are undisturbed but are part of a proposed quarry expansion. The purpose of the delineation was to determine the limits of waters subject to regulatory authority under Section 404 and 401 of the Clean Water Act and those regulated under California Department of Fish and Wildlife Code 1600 et seq. for any potential waters subject to state regulatory authority found within areas that are part of the proposed quarry expansion. Based on the findings of the delineation, Tetra Tech requested and received a determination that waters found within the quarry and expansion area were isolated and not subject to regulation under Section 404 by the U.S. Army Corps of Engineers. A Streambed Alteration Agreement for project impacts to waters regulated by the California Department of Fish and Wildlife is currently in preparation. Based on the presence of a

regulated wetland, a Waste Discharge Requirement permit will be sought from the Regional Water Quality Control Board-Colorado River Basin.

Jurisdictional Delineation for Waters Subject to Regulatory Authority and Related Permits for the Daggett Bridge Replacement Project, San Bernardino County, California. Completed a delineation of waters subject to regulatory authority for a portion of the Daggett Ditch located outside the Community of Daggett, San Bernardino County, California. The delineation was completed to support Clean Water Act and California Department of Fish and Wildlife permits for a bridge replacement project. The bridge crossing Daggett Ditch associated with historic Route 66 required replacement. In addition to the delineation, a request for use of a Nationwide Permit, a Water Quality Certification and a Streambed Alteration Agreement for the Daggett Bridge Replacement Project was also completed.

Water Quality Certification and Streambed Alteration Agreement for the Restoration of the South Vermont Avenue Drains, City of Gardena, California. Completed a general biological reconnaissance and delineation of waters subject to regulatory authority for the area of potential effect associated with the Gardena Willows Wetland Preserve as a result of a drain pipe failure beneath South Vermont Avenue. Completed a Water Quality Certification in compliance with Section 401 of the Clean Water Act and a Streambed Alteration Agreement in compliance with Section 1600 et seq. of the California Department of Fish and Wildlife code. Permitting under Section 404 of the Clean Water Act was not formally sought as thresholds for requiring this permit were not exceeded.

Water Quality Certification and Streambed Alteration Agreement, San Manuel Band of Mission Indians. In support of a channel improvement project located on non-tribal lands, prepared permits applications for a Streambed Alteration Agreement and a Water Quality Certification for the proposed improvement of Sand Creek Channel. The proposed County of San Bernardino Flood Control project includes lining Sand Creek from Lynwood Avenue to the Patton Detention Basin. Project related activities also include preparation and processing of an Initial Study/Mitigated Negative Declaration for the project. Section 404 Request for Use of Nationwide Permit for this project was processed by outside council.

Individual Permit/Water Quality Certification/Streambed Alteration Agreement, Pacific Communities Builders Development, Victorville, California. Conducted a jurisdictional delineation of a tributary of the Mojave River, and subsequent 404/401 and 1600 et. seq permitting for a 258 acre development in Victorville, California. Mitigation for loss of jurisdictional waters negotiated with the U.S. Army Corps of Engineers and the Regional Water Quality Control Board-Lahontan District. Mitigation for loss of burrowing owl (*Athene cunicularia*) habitat was negotiated with the California Department of Fish and Wildlife. The Individual Permit required the preparation of an Environmental Assessment (EA) as per the National Environmental Policy Act (NEPA).

Use of Nationwide Permits/Water Quality Certification Waiver/Streambed Alteration Agreement for Wind Energy Conversion System (WECS) Project, Palm Springs, California. Completed permitting applications to satisfy Section 404/401 of the Clean Water Act and 1600 et. seq of the California Department of Fish and Wildlife Code for wind energy projects in the Palm Springs area. Negotiations with U.S. Army Corps of Engineers, Regional Water Quality Control Board-Colorado River Basin Region and the California Department of Fish and Wildlife were completed for this project as well as informal consultation for the listed Coachella milk vetch (*Astragalus lentiginosus* var. *coachellae*).

APPENDIX E

GENERAL BIOLOGIAL RECONNAISSANCE AND HABITAT ASSESSMENT FOR BURROWING OWL (*ATHENE CUNICULARIA*) AND LOS ANGELES POCKET MOUS (*PEROGNATHUS LONGIMEMBRIS BREVINASUS*), MORENO VALLEY RANCH GOLF COURSE, MORENO VALLEY, CALIFORNIA 92557

ASSESSOR PARCEL NUMBERS 304-030-005, 304-100-007, 304-100-008

Prepared for
Mr. Eric Heffner
TOC III CA Belago LLC
c/o Bridge Investment Group Holdings
2521 State Street
Carlsbad, California 92008

November, 2017

Prepared by

Tetra Tech, Inc.
301 East Vanderbilt Way, Suite 450
San Bernardino, California 92408
T37870-01

ATTACHMENT E-2: TITLE PAGE

Date Report Written: 17 November 2017
Field Work Conducted: 13 and 14 November 2017

Report Title: General Biological Reconnaissance and Habitat Assessment for Burrowing Owl (*Athene cunicularia*) and Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*), Moreno Valley Ranch Golf Course, Moreno Valley, California

Project Site Location: APN 304-030-005 is located on the northeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-007 is located on the southeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-008 is located south of Championship Drive with Mount Russell on its southwestern border. The site is located in Sections 22, 23, and 14, Township 3S, Range 3W, SBBM of the Sunnymead 7.5-minute quadrangle.

Assessor Parcel Numbers: 304-030-005, 304-100-007 and 304-100-008

Owner/Applicant:	Principal Investigator:
Mr. Eric Heffner ROC III CA Belago, LLC c/o Bridge Investment Group Holdings 2521 State Street Carlsbad, California 92008	Tetra Tech, Inc. 310 East Vanderbilt Way, Suite 450 San Bernardino, California 92507

Report Summary: The site is developed as an 18-hole golf course that appears to not be in active use. It is surrounded on all sides by high density and single family residential developments. No sensitive plants were observed at the site. No burrowing owls or sign of burrowing owls was observed at the site. Other than the raptors, no other sensitive wildlife was observed during the survey. Ground disturbance and vegetation removal activities should be conducted outside the nesting bird season which is March 1 to September 15 and outside the raptor nesting season which is January 1 to July 31st. If these activities must occur during the nesting season, a nesting bird survey should be conducted 7 days prior to any ground/vegetation disturbance activities to determine if any nesting birds occur within the site. If nesting birds are not found within the site, no further action is required. If nesting birds are observed, a perimeter around the nesting site will be established. The distance for the perimeter from the nesting site will be determined by a qualified biologist and would be based on the type of nesting bird. Portions of APN 304-030-005 have potential habitat for occupation by burrowing owl. A 30-day pre-construction survey for burrowing owl prior to ground disturbance and vegetation removal activities should be conducted at APN 304-030-005. Portions of APN 304-100-008 were observed to be suitable habitat for occupation by LAPM. A focused night time trapping survey by a qualified biologist for small mammals is recommended to determine if LAPM are utilizing APN 304-100-008. If project activities are necessary at APN 304-100-008 and weather conditions preclude nighttime trapping to determine presence/absence of LAPM, it is recommended that a qualified biologist identify those areas to be flagged/fenced and avoided until the trapping survey can occur. The riverine drainage and open water man-made water feature found in APN 304-030-005 may be subject to regulation as jurisdictional waters. Prior to any work in these areas, consultation with the U.S. Army Corps of Engineers, Regional Water Quality Control Board-Santa Ana Region and California Department of Fish and Wildlife is recommended to determine the regulatory status of the drainage and man-made water feature.

Contact Information:
Tetra Tech, Inc.
Stephanie Pacheco
310 East Vanderbilt Way, Suite 450
San Bernardino, California 92507
(909) 381-1674

Resume: See Appendix E

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LIST OF PHOTOGRAPHS

APPENDICES

1.0 INTRODUCTION

Tetra Tech, Inc. was contracted by ROC III CA Belago, LLC. to conduct a general biological reconnaissance and habitat assessment for burrowing owl (*Athene cunicularia*) and Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) (LAPM) at a 189.5-acre site (survey area) that is identified as Assessor Parcel Numbers (APNs) 304-303-005, 304-100-008 and 304-100-007. The purpose of the reconnaissance was to conduct a general biological reconnaissance survey for the possible presence of sensitive biological resources and to determine if habitat conditions at the site were suitable for burrowing owl and LAPM.

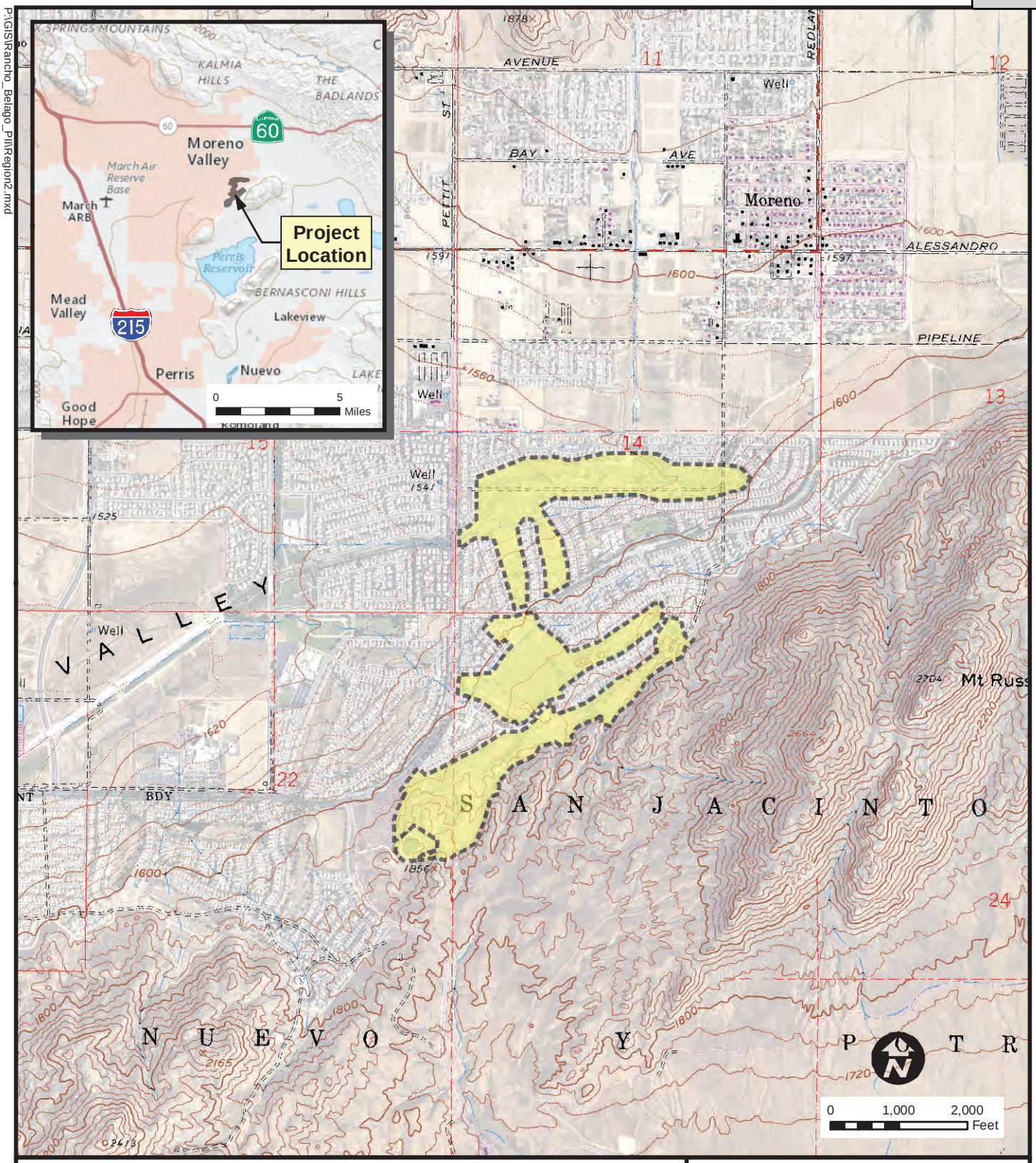
2.0 PROJECT LOCATION AND DESCRIPTION

The site has been developed as a golf course that consists of a driving range, fairways, tee boxes, sand traps and one water hazard that while maintained, appears to be not be in use. APN 304-030-005 is located on the northeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-007 is located on the southeast corner of Moreno Beach Drive and John F. Kennedy Drive. APN 304-100-008 is located south of Championship Drive with Mount Russell on its southwestern border. The site is located in Sections 22, 23, and 14, Township 3S, Range 3W, SBBM of the Sunnymead 7.5-minute quadrangle (United States Geologic Service 1967, Revised 1980) (Figure 1).

3.0 ENVIRONMENTAL SETTING

The survey area is an 18-hole golf course that, while maintained, appears to not be in use. It is surrounded on all sides by high density and single family residential developments. Photographs 1 through 23 depict the survey area and the location and direction of the photographs may be found on Figure 2. Plants observed at the site are primarily non-native grasses ruderal weeds (Figures 2 through 4). Ruderal plants are typically those plants that initially colonized disturbed lands. These types of plants are typically non-native introduced weeds. The survey area is surrounded on all sides by single family and high density residential developments plus associated infrastructure. Mount Russell is found on the southwestern border of APN 304-100-008. Soils at APN 304-030-005 have been classified as Metz loamy fine sands with a sandy loam substrate (United States Department of Agriculture 1971). These are soils that have been formed in alluvial materials and are deep, somewhat excessively drained soils found on floodplains and alluvial fans. Soils at APNs 304-100-007 and 304-100-008 have been classified as San Emigdio loam (United States Department of Agriculture 1971). San Emigdio loams are formed in sedimentary alluvium and are very deep, well drained soils found on alluvial fans and floodplains.

P:\GIS\Rancho_Belago_PllRegion2.mxd



Project Boundary

MORENO VALLEY RANCH
GOLF COURSE

Figure 1

Project Location

Source:
USGS 7.5' topographic quadrangle, Sunnymead, CA 1967. revised 1980.
NAIP aerial image, May 2016.

TETRA TECH

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Photograph 1 - View of southwestern portion of APN 304-030-005.
View to the northwest.

Photograph 2 - View of southwestern portion of APN 304-030-005.
View to the south.

Photograph 3 - View of western portion of APN 304-030-005. View to the northwest.

Photograph 4 - View of eastern portion of APN 304-030-005. View to the northwest.

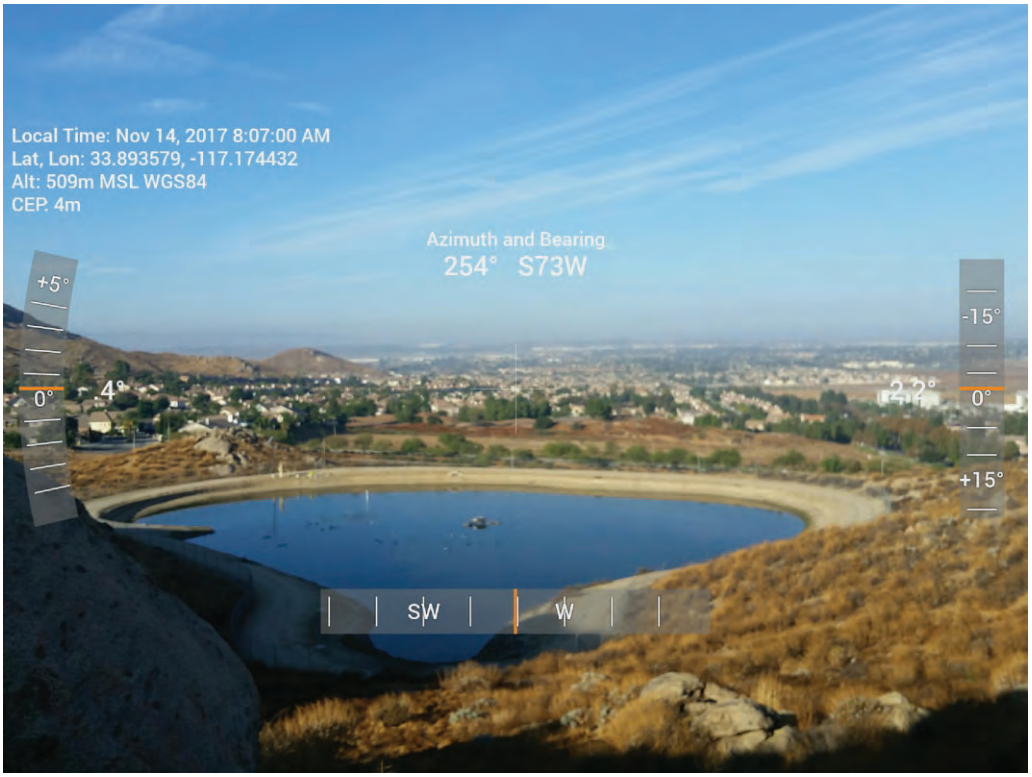
Photograph 5 - View of eastern portion of APN 304-030-005. View to the northwest.

Photograph 6 - View of the eastern portion of APN 304-030-005. View to the west.

Photograph 7 - View of box culvert on northern side of APN 304-030-005 with Cactus Avenue in the background. View to the north.

Photograph 8 - View of the central portion of APN 304-030-005 with water feature in the background. View to the northwest.

Photograph 9 - View of the central portion of APN 304-100-008.
View to the northeast.

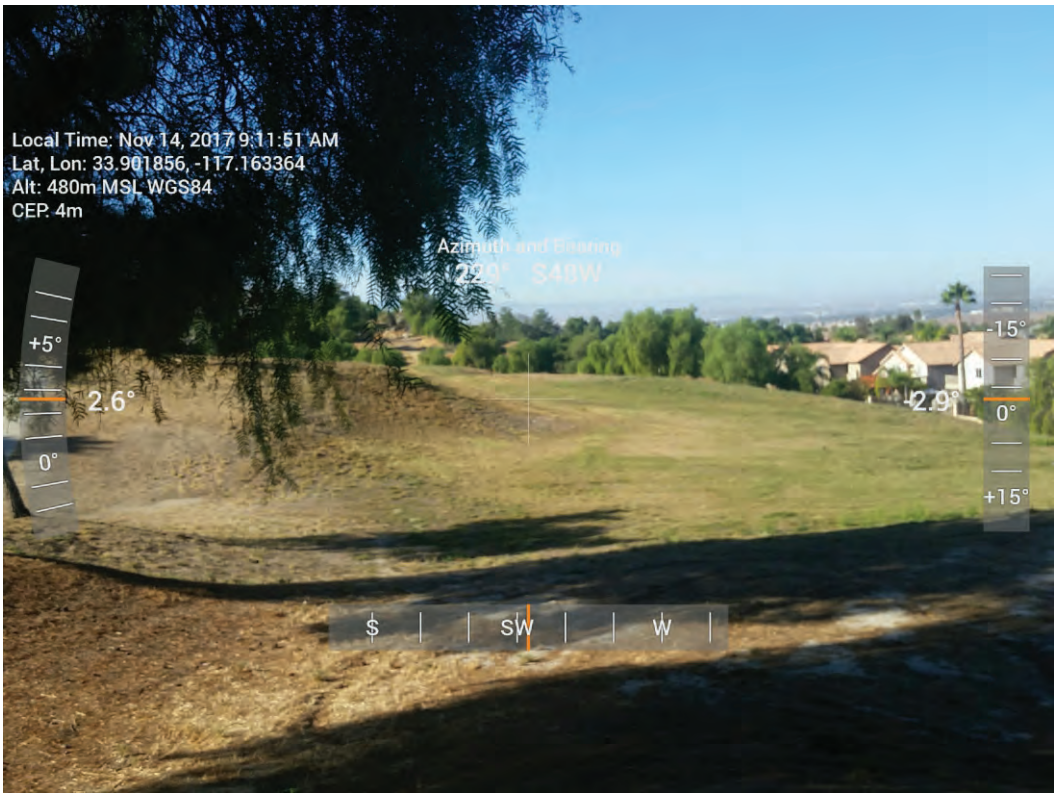


Photograph 10 - View of adjacent parcel found to the southwest of APN 304-100-008.
View to the west.

Photograph 11 - View of the western portion of APN 304-100-008.
View to the north.

Photograph 12 - View of the eastern portion of APN 304-100-008.
View to the southwest.

Photograph 13 - View of the eastern portion of APN 304-100-008.
View to the southwest.



Photograph 14 - View of the eastern portion of APN 304-100-007.
View to the southwest

Photograph 15 - View of the eastern portion of APN 304-100-007. View to the southwest.

Photograph 16 - View of the central portion of APN 304-100-007. Club house in the background. View to the northwest.

Photograph 17 - View of the driving range for APN 304-100-007. View to the southwest.

Photograph 18 - View of the driving range for APN 304-100-007. View to the west.

Photograph 19 - View of the driving range for APN 304-100-007.
View to the southeast.

Photograph 20 - View of western side of APN 304-100-007.
View to the northwest.

Photograph 20 - View of western side of APN 304-100-007. View to the northwest.

Photograph 22 - View of the driving range of APN 304-100-007 with the club house in the background. View to the northwest.

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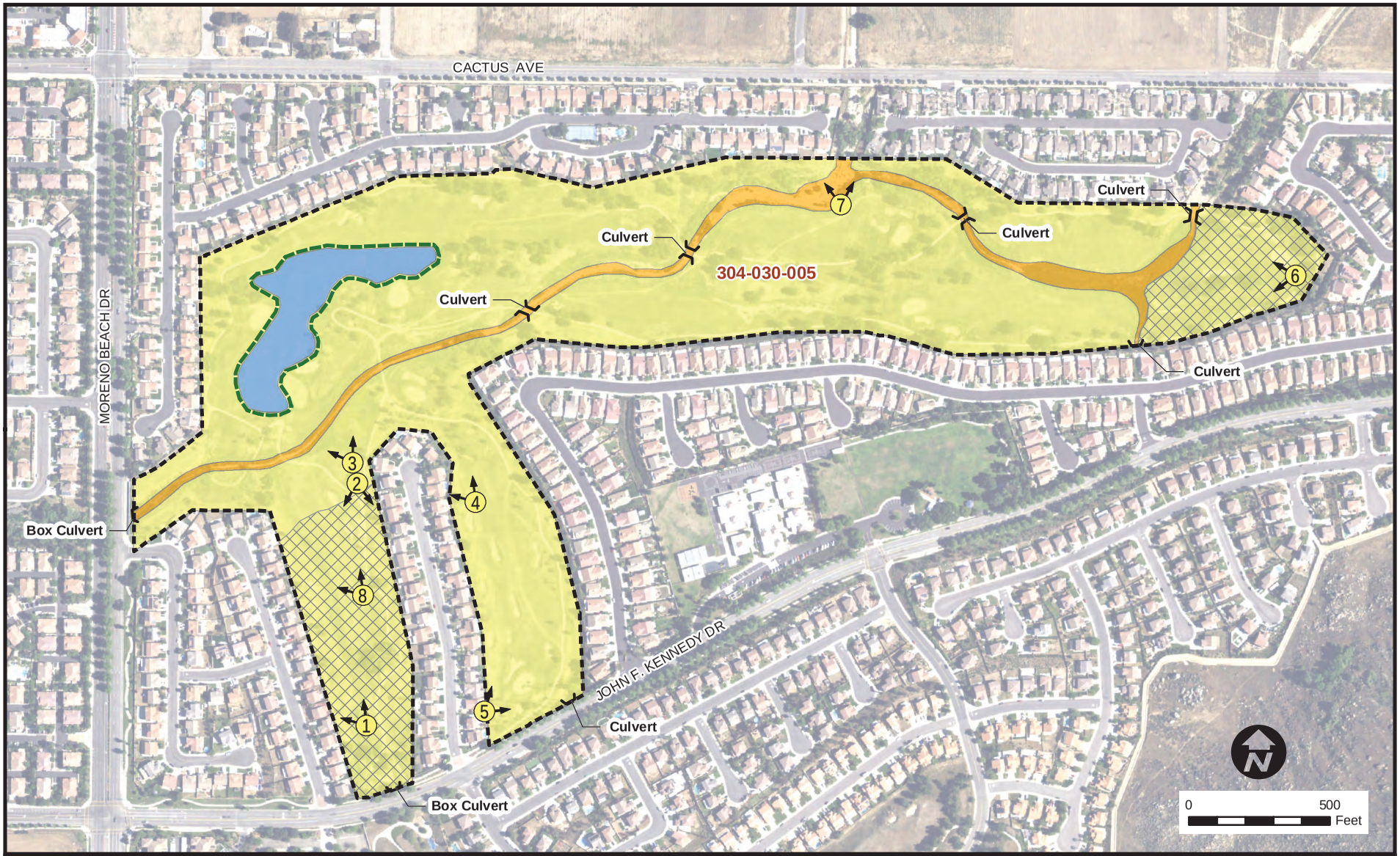

Non-native Ruderal Grassland (69.7 acres)

Open Water (3.1 acres)

Drainage (4.4 acres)

MSHCP Burrowing Owl Special Species Survey Area

Burrowing Owl Habitat (12.1 acres)

Project Boundary

1 Photo Locations

Source:
NAIP aerial image, May 2016.

MORENO VALLEY RANCH
GOLF COURSE

Figure 2

Habitat Map and Photograph Locations APN 304-030-005

TETRA TECH

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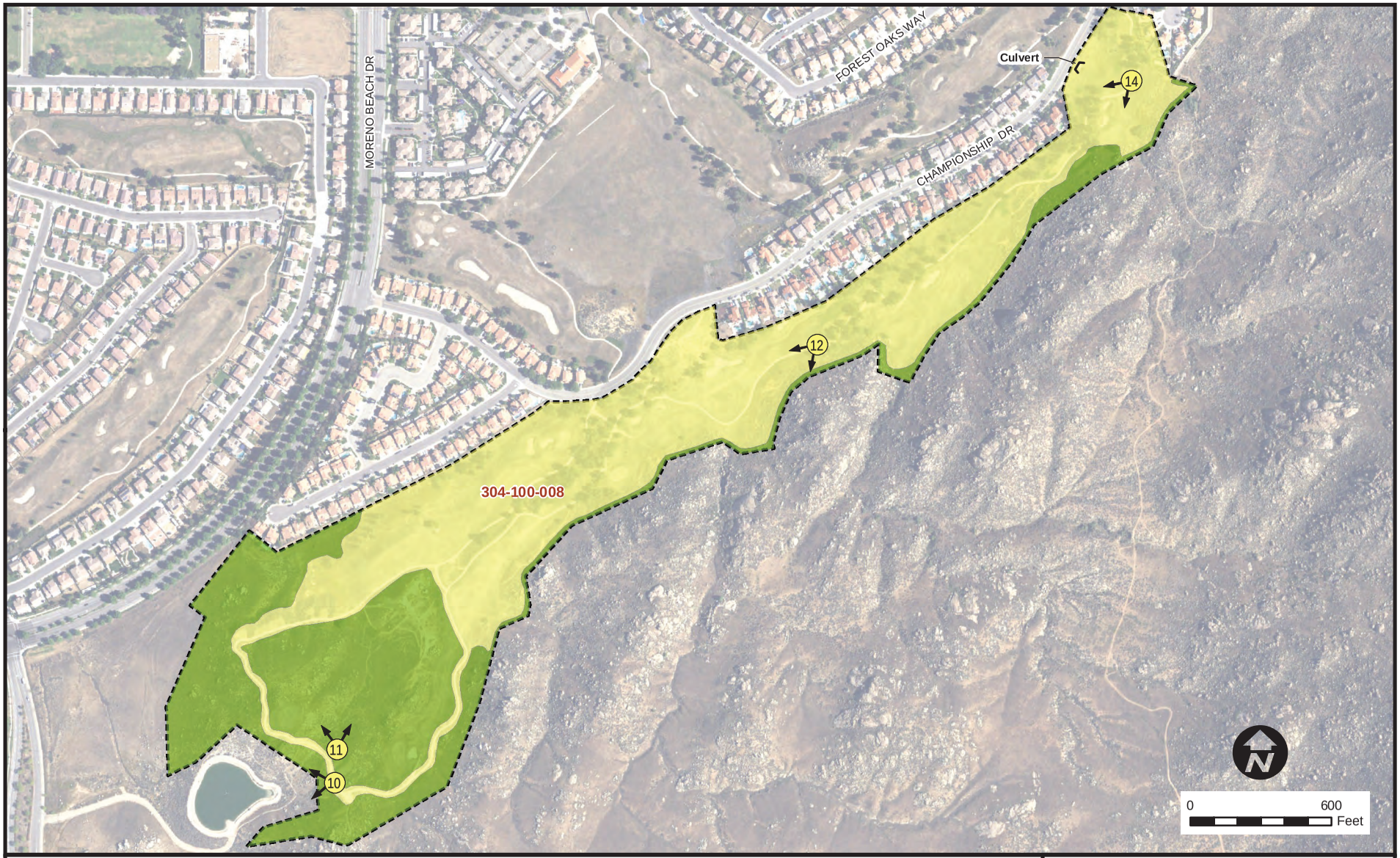

Non-native Ruderal Grassland (41.2 acres)

Disturbed Riversidean Desert Scrub-Brittlebush Series (26.1 acres)

Project Boundary

1 Photo Locations

Source:
NAIP aerial image, May 2016.

MORENO VALLEY RANCH GOLF COURSE

Figure 3

Habitat Map and Photograph Locations APN 304-100-008

TETRA TECH

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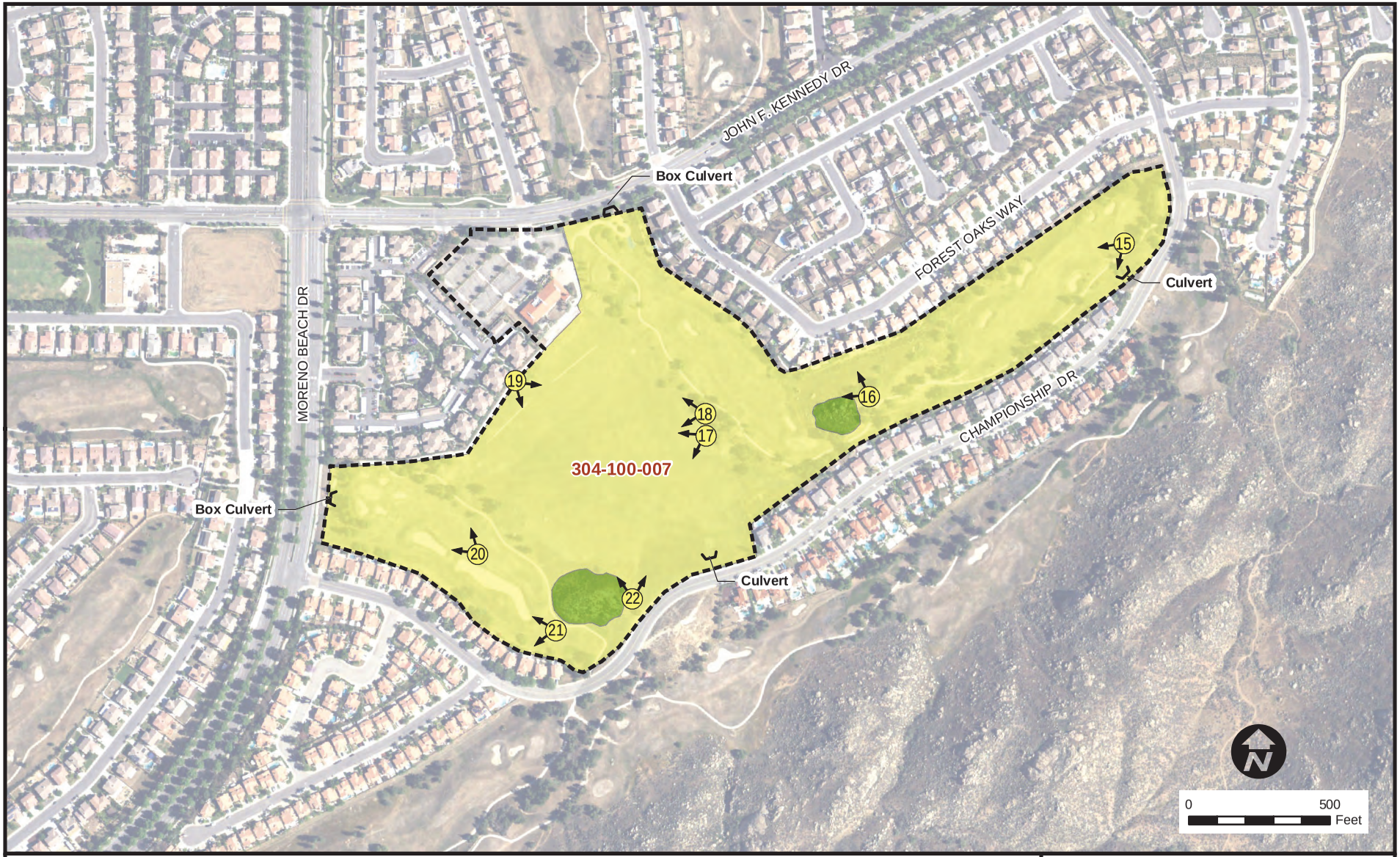

Non-native Ruderal Grassland (42.2 acres)

Disturbed Riversidean Desert Scrub-Brittlebush Series (1.4 acres)

Project Boundary

1 Photo Locations

Source:
NAIP aerial image, May 2016.

MORENO VALLEY RANCH GOLF COURSE

Figure 4

Habitat Map and Photograph Locations APN 304-100-007

TETRA TECH

4.0 BIOLOGICAL RECONNAISSANCE AND HABITAT ASSESSMENT FOR BURROWING OWL AND LOS ANGELES POCKET MOUSE

4.1 METHODS

The site is located within the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) area. The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004. The MSHCP has identified the following requirements related to biological resources by APNs

- APN 304-030-005: A habitat assessment was required for potential habitat by burrowing owl.
- APN 304-100-008: A habitat assessment would be required for potential habitat for burrowing owl and Los Angeles pocket mouse.
- APN 304-100-007: No biological resources requirements related to the MSHCP have been identified but was include in the reconnaissance survey to determine if sensitive biological resources were present.

The APNs associated with the site are identified by the MSHCP as not part of a cell and independent cell groups.

The available literature on natural resources with reference to biological resources for the site were consulted including information from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) (2017). The California Native Plant Society (CNPS) Electronic Inventory (2017) for the site was also reviewed for sensitive plants. Sensitive biological resources identified from the databases and literature reviewed for this survey that have the potential for presence in the survey area are found in Appendix A.

A general biological reconnaissance and habitat assessment was conducted of the site on 13 and 14 November, 2017. A summary of weather conditions recorded during the survey are found as follows.

Date	Start Temperature	Cloud Cover	Winds	Final Temperature	Cloud Cover	Winds
11/13/17	47° F	30%	0 mph	78°F	10%	0 mph
11/14/17	48° F	25%	0 mph	81°F	5%	0 mph

mph: Miles per hour

Meandering transects were conducted at the site and 100 percent of the site was surveyed for biological resources. The reconnaissance survey included evaluating if habitat suitable for burrowing owl is present on APNs 304-030-005 and 304-100-008. To not trespass outside the site, the 150 meter (500 foot) buffer zone in the adjacent areas of the site was surveyed using binoculars for suitable habitat for burrowing owl. The site and adjacent undeveloped areas to the site were surveyed for dominant plant species and natural communities.

Concurrent with the survey for suitable habitat for burrowing owl, APN 304-100-008 was also evaluated for suitable habitat for occupation by LAPM. The habitat assessment was complete on 13 November 2017 by Tetra Tech's subcontractor, Ms. Kathy Simon who holds a Memorandum of Understanding (MOU) for trapping and handling of LAPM and is very familiar with habitat conditions that are suitable for occupation by this sensitive mammal.

4.2 RESULTS OF DATABASE SEARCH

Plant and wildlife species classified as rare, threatened, or endangered; proposed for listing as endangered or threatened; or candidate species for listing by federal and/or state resource agencies are considered "sensitive." A list of Sensitive Biological Resources that have the potential for presence in the survey area and likely occurrence probability for presence in the survey area are found in Appendix A. The site is highly disturbed from development as an 18-hole golf course. Despite the highly disturbed and developed condition of the site, habitat at the site has the potential to support the following sensitive species,

- Cooper's hawk (*Accipiter cooperii*);
- Burrowing owl (*Athene cunicularia*);
- Ferruginous hawk (*Buteo regalis*);
- Lawrence's goldfinch (*Spinus lawrencei*)
- Western mastiff bats (*Eumops perotis californicus*); and
- Western yellow bat (*Lasiurus xanthinus*).

The water feature found in APN 304-030-005 is suitable habitat for occupation by western pond turtle (*Emys marmorata*) only if introduced. The water feature has no connection to possible sources of this sensitive turtle.

Based on habitat conditions and proximity to Mount Russell to APN 304-100-008, the following sensitive species have the potential for being present:

- Bell's sage sparrow (*Artemisiospiza belli belli*);
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*);
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)
- Orange-throated whiptail (*Aspidoscelis hyperythera*);
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*);
- Northern red-diamond rattlesnake (*Crotalus ruber*); and
- Coast patch-nose snake (*Salvadora hexalepis virgultea*).

The site is dominated by non-native grasslands, landscaping non-native trees and weeds. Due to the disturbed nature of the site, the presences of sensitive plants are considered to be absent from the site.

4.3 RESULTS OF FIELD INVESTIGATION

4.3.1 Plant Communities in the Project Area

As indicated earlier in this report, the survey area has been developed as a full 18-hole golf course. Non-native grasses and ruderal herbaceous plants with non-native landscaping trees were present in most of the area surveyed at the site (Figures 2 through 4). Portions of APNs 304-100-008 and 304-100-007 have areas associated with boulder-dominated hills with native vegetation. Classification of the native vegetation communities at these two APNs and in adjacent areas associated with Mount Russell is based on information provided in A Manual of California Vegetation (Sawyer and Keeler-Wolf 1995). While much of APN 304-100-008 has been developed as part of the golf course, the southwestern end of the site is an undeveloped boulder hill. Habitat associate with Mount Russell, the southwestern portion and the southwestern edge of APN 304-100-008 are disturbed Riversidean desert scrub brittle bush series habitat (Figure 3). The understory in these areas are dominated by non-native grasses and ruderal weed. APN 304-100-007 has approximately 1.4 acres of disturbed Riversidean desert scrub brittle bush series habitat (Figure 4). These areas are minor boulder hills. The understory in these two areas are dominated by non-native grasses and ruderal weed. No sensitive plants were observed in the survey area. Appendix B provides a comprehensive list of plants observed in the survey area.

Project Findings. No sensitive plants or plant communities were observed at the site. Based on the high degree of management of the golf course and the presence of non-native grasses and weeds that are found

in all parts of the site, sensitive native plants are absent from the site. No impacts to these resources would occur. No recommendations are made.

4.3.2 Wildlife in the Project Area

During the reconnaissance and habitat assessment of the site, raptors actively foraging at the site were observed. Owl pellets that are indigestible material such as bones and fur left in the bird's gizzard and regurgitated by the owl were observed beneath some of the on-site trees. Canid scat potentially left by coyotes (*Canis latrans*) were observed throughout the site. Birds were observed actively using all parts of the site as forage and cover. Due to the timing of the survey, nesting activity was not observed. Appendix B provides a comprehensive list of wildlife observed in the survey area.

Project Findings. Other than the raptors, no other sensitive wildlife was observed during the survey. Based on the presence of trees and high degree of use by raptors and birds observed during the reconnaissance survey and habitat assessment, the following recommendation is made. Ground disturbance and vegetation removal activities should be conducted outside the nesting bird season which is March 1 to September 15 and outside the raptor nesting season which is January 1 to July 31st. If these activities must occur during the nesting season, a nesting bird survey should be conducted 7 days prior to any ground/vegetation disturbance activities to determine if any nesting birds occur within the site. If nesting birds are not found within the site, no further action is required. If nesting birds are observed, a perimeter around the nesting site will be established. The distance for the perimeter from the nesting site will be determined by a qualified biologist and would be based on the type of nesting bird.

4.3.3 Burrowing Owl Habitat Assessment Results

The burrowing owl is currently listed as a Species of Special Concern by the California Department of Fish and Wildlife (formerly known as the California Department of Fish and Game). It is also subject to United States Fish and Wildlife Service regulation under the Migratory Bird Act of 1918. Burrowing owls are ground dwelling birds that are often seen during the day standing erect on the ground or on posts. The burrowing owl is a yearlong resident of open, dry grassland and desert habitat. They are also found as residents in grass, forbs and open shrub stages of pinyon-juniper and ponderosa pine habitats. Often considered diurnal, burrowing owls tend to be entirely nocturnal or at least crepuscular (active at dawn and dusk) and are frequently seen perching in open areas during the early morning and late afternoon at or near the entrance of their burrow or on a nearby low perch. Burrowing owls typically use burrows made by fossorial animals such as California ground squirrels (*Otospermophilus beecheyi*) as nesting sites but

will also use man-made structures such as cement culverts, deposited debris piles or openings beneath cement or asphalt pavements (California Department of Fish and Game 2012).

Burrowing owls are found in varying population sizes throughout Northern America and spend winters south as far as Central America. Their numbers have been drastically reduced in California in the past 60 years due to conversion of grasslands by agriculture and urbanization as well as due to consuming poison bait set for ground squirrels.

The site was surveyed on foot with transects and no more than 30 meter (100 feet) separation. No owls or sign of owls were found on the site. California ground squirrel burrows were observed portions of APN 304-030-005 (Figure 2). Thick fescue non-native grasses that are mowed are found in all other portions of the site. No California ground squirrels were observed in these areas. For those areas where disturbed Riversidean desert scrub-brittle bush scrub is found, non-native grasses and weeds dominate the understory making these areas unlikely for occupation by California ground squirrel. While habitat assessment for burrowing owls is required for APN 304-030-005 and 304-100-008, only the water feature present on APN 304-030-005 has been identified by the MSHCP as a Special Species Survey Area for burrowing owl (E. Dionne Regional Conservation Authority Western Riverside County 2017) (Figure 2).

Project Findings. Portions of APN 304-030-005 have potential habitat for occupation by burrowing owl (Figure 2). No burrowing owls were observed on the site or in the buffer zones to the site. No sign of burrowing owl were observed on the site or in the buffer zones to the site. No burrowing owls were found in the water feature or in areas adjacent to the water feature. As APN 304-030-005 and 304-200-008 are not located within an MSHCP criteria cell and are independent cell groups, focused surveys for burrowing owl during the breeding season of March 01-31 August are not required. Based on the presence of habitat suitable for occupation by burrowing owl in APN 304-030-005, the following recommendation is made. A 30-day pre-construction survey prior to ground disturbance and vegetation removal activities should be conducted at APN 304-030-005. If the remainder of the site is no longer maintained, a 30-day pre-construction survey prior to ground disturbance and vegetation removal activities should be conducted to ensure no burrowing owls have moved onto the site.

If active, occupied burrows are found during the 30-day pre-construction survey, the following measures are recommended.

- No disturbance within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 to January 31); or

- No disturbance within 250 feet of an occupied burrow during the breeding season (February 1 to August 31).

4.3.4 Los Angeles Pocket Mouse Habitat Assessment Results

The LAPM is one of two pocket mice found in this area of Riverside County (Williams 1986). Both the Los Angeles pocket mouse and the northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) occupy similar habitats, but the northwestern San Diego pocket mouse has a wider range extending south into San Diego County. The habitat of LAPM is described as being confined to lower elevation grasslands and coastal sage scrub habitats, in areas with soils composed of fine sands (Williams 1986). This species prefers habitat similar to that of the Stephens' kangaroo rat (*Dipodomys stephensi*) and San Bernardino kangaroo rat (*D. merriami parvus*). It occurs in open sandy areas in the valley and foothills of southwestern California (Hall 1981). The LAPM is identified as a Species of Special Concern by the CDFW.

Los Angeles pocket mouse, like other subspecies of *Perognathus longimembris*, are granivorous rodents and specialize on grass and scrub seeds, but will take insects when available (French 1999; Meserve 1976). Pocket mice possess external, fur-lined cheek pouches used in collecting and caching of seeds. Seeds are cached for use during the colder months of the year.

They spend most of their foraging time in or near bushes, scrubs, rock crevices, or other sources of cover. The LAPM is primarily nocturnal and exhibits a distinct seasonal pattern in surface activity. During colder months the pocket mouse may enter into torpor (dormancy) and not engage in surface activity. This species may enter torpor as early as the end of September; the exact date may depend on the nightly low temperatures, and the availability of food. At some point when surface conditions are very cold and food is scarce, the animal cannot meet its energy needs by foraging and thus must shut down surface activity to survive the winter. LAPM must then survive on the food they have cached (Richman and Price 1993). Los Angeles pocket mice emerge in the spring when the surface ground temperatures are higher than the surrounding ground temperature in their burrows (French 1999).

The present known distribution of this species in Riverside and San Bernardino counties extends from the San Gabriel and San Bernardino mountains south to the Temecula and Aguanga areas, and from the east side of the Santa Ana Mountains east to Cabazon (Hall 1981). A habitat assessment of APN 304-100-008 was completed on 13 November 2017. Small mammal burrows were observed in areas of APN 304-100-

008 associated with sandy soil/sand traps. Potential habitat for this sensitive mammal was observed in portions of APN 304-100-008 (Appendix C).

Project Findings. Portions of APN 304-100-008 were observed to be suitable habitat for occupation by LAPM. A number of small mammal burrows were observed that could be occupied by this small mammal. The following recommendations are provided prior to project development on APN 304-100-008.

- A focused night time trapping survey for small mammals is recommended by a qualified biologist to determine if LAPM are utilizing APN 304-100-008. Based on a conversation with Ms. Dionne regarding timing for night time trapping for LAPM, the timing for the trapping survey may be dependent on warmer weather when more animals would be active at night (E. Dionne Regional Conservation Authority Western Riverside County 2017).
- If project activities are necessary at APN 304-100-008 and weather conditions preclude nighttime trapping to determine presence/absence of LAPM, it is recommended that a qualified biologist identify those areas to be flagged/fenced and avoided until the trapping survey can occur.

4.3.5 Critical Habitat

The survey area is not within designated critical habitat or proposed designated critical habitat. No designated critical habitat or proposed critical habitat has been identified on or adjacent to the site.

Project Findings. No critical habitat or proposed critical habitat would be impacted by projects proposed at the site. The site is located within the MSHCP and, if relevant, appropriate fees for loss of habitat would be assessed as part of the project implementation process. No recommendations are made.

4.3.6 Riverine/Riparian and Vernal Pool Habitat

No vernal pools or habitat likely to have supported vernal pools were observed on the site. Culverts to drain stormwater runoff generated by off-site properties are found in APNs 3004-030-005 and 304-100-004 (Figures 2 and 4). A drainage that is approximately 4.4 acres of riverine habitat transects APN 304-030-005 trending from the east to the west (Figure 2). This drainage is part of a regional drainage system that terminates in Lake Elsinore found south of the site. Lake Elsinore is associated with the Sana Ana River watershed and is subject to regulatory authority under Section 404/401 of the Clean Water Act and California Department of Fish and Game code 1600 et. seq. The man-made open water feature that is approximately 3.1 acres in size is not connected to the on-site drainage system and is supporting water

fowl. Despite being a man-made feature, it may be subject to regulation by the California Department of Fish and Wildlife if impacted by project activities.

Project Findings. No vernal pool habitat would be impacted by proposed project activities at the site. No impacts to this resource would occur. No recommendations are made. The riverine drainage and open water man-made water feature found in APN 304-030-005 may be subject to regulation as jurisdictional waters. Prior to any work in these areas, consultation with the U.S. Army Corps of Engineers, Regional Water Quality Control Board-Santa Ana Region and California Department of Fish and Wildlife is recommended to determine the regulatory status of the drainage and man-made water feature.

4.3.7 Urban/Wildlife Interface Guidelines

The MSHCP has designated Criteria Areas within the plan area. Within the Criteria Area, individual cells or cell groupings have been identified and criteria for conservation have been determined. The site is located within the Reche Canyon/Badlands Area Plan Unit and is not located within any designated Criteria Areas.

Project Findings. The site is not located within a designated Criteria Area as defined by the MSHCP. No impacts would occur. No recommendations are made.

4.4 CONCLUSIONS AND RECOMMENDATIONS

No sensitive plants were observed at the site. No burrowing owls or sign of burrowing owls was observed at the site. Other than the raptors, no other sensitive wildlife was observed during the survey. Based on the presence of trees and high degree of use by raptors and birds observed during the reconnaissance survey and habitat assessment, the following recommendation is made.

- Ground disturbance and vegetation removal activities should be conducted outside the nesting bird season which is March 1 to September 15 and outside the raptor nesting season which is January 1 to July 31st. If these activities must occur during the nesting season, a nesting bird survey should be conducted 7 days prior to any ground/vegetation disturbance activities to determine if any nesting birds occur within the site. If nesting birds are not found within the site, no further action is required. If nesting birds are observed, a perimeter around the nesting site will be established. The distance for the perimeter from the nesting site will be determined by a qualified biologist and would be based on the type of nesting bird.

Portions of APN 304-030-005 have potential habitat for occupation by burrowing owl. A 30-day pre-construction survey for burrowing owl prior to ground disturbance and vegetation removal activities should be conducted at APN 304-030-005. If active, occupied burrows are found during the 30-day pre-construction survey, the following measures are recommended.

- No disturbance within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 to January 31); or
- No disturbance within 250 feet of an occupied burrow during the breeding season (February 1 to August 31).

Portions of APN 304-100-008 were observed to be suitable habitat for occupation by LAPM. The following recommendations are provided prior to project development on APN 304-100-008.

- A focused night time trapping survey by a qualified biologist for small mammals is recommended to determine if LAPM are utilizing APN 304-100-008. Based on a conversation with Ms. Dionne regarding timing for night time trapping for LAPM, the timing for the trapping survey may be dependent on warmer weather when more animals would be active at night (E. Dionne Regional Conservation Authority Western Riverside County 2017).
- If project activities are necessary at APN 304-100-008 and weather conditions preclude nighttime trapping to determine presence/absence of LAPM, it is recommended that a qualified biologist identify those areas to be flagged/fenced and avoided until the trapping survey can occur.

The riverine drainage and open water man-made water feature found in APN 304-030-005 may be subject to regulation as jurisdictional waters. The following recommendation is made.

- Prior to any work in these areas, consultation with the U.S. Army Corps of Engineers, Regional Water Quality Control Board-Santa Ana Region and California Department of Fish and Wildlife is recommended to determine the regulatory status of the drainage and man-made water feature.

Appendix D details project findings and recommendations as per the MSHCP requirements and Appendix E include the resume of the project biologist.

5.0 CERTIFICATION

"***Certification:*** *I hereby certify that the statements furnished above and in the attached exhibits present data and information required for this biological reconnaissance and habitat assessment for burrowing owl and Los Angeles pocket mouse and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.*"

DATE: 20 November 2017 SIGNED: Stephanie Pacheco

Report Author

Field Work Performed by: Stephanie Pacheco, Tetra Tech, Inc.
Kathy Simon, Ironwood Consulting, Inc.
Maribel Lopez, Ironwood Consulting, Inc.

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Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Plants			
San Diego sagewort (*Artemisia palmeri*) (1)	Perennial deciduous shrub found in sandy coastal ravines and river drainages; moist drainages, sandy soils.	Federal : ND State: ND CNPS: 4.2	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course. The water feature on APN 304-030-005 does not have sandy drainages associated with it.
Nevin's barberry (*Berberis nevinii*) (1)	Perennial evergreen shrub found chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly soils.	Federal : ND State: ND CNPS: 1B.1	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course.
Round-leaved filaree (*California macrophylla*) (1) (2)	Cismontane woodland, valley and foothill grasslands; clay soils.	Federal : ND State: ND CNPS: 1B.1	Absent; occurrence noted 30 years ago (1976); no likely habitat at the site or in adjacent areas to the site.
Plummer's mariposa lily (*Calochortus plummerae*) (1)	Perennial herb found in chaparral, cismontane woodland, valley and foothill grasslands; granitic and rocky soils.	Federal : ND State: ND CNPS: 4.2	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course.
Payson's jewelflower (*Caulanthus simulans*) (1)	Annual herb found in chaparral, pinyon-juniper woodland; rocky habitat.	Federal : ND State: ND CNPS: 4.2	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course.
Smooth tarplant (*Centromadia pungens* ssp. *laevis*) (1) (2)	Valley and foothill grasslands, chenopod scrub, meadows, playas, riparian woodlands	Federal : ND State: ND CNPS: 1B.1	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for this plant.
Peninsular spineflower (*Chorizanthe leptotheca*) (1)	Annual herb found in chaparral, coastal scrub, lower montane coniferous forest; alluvial fan habitats, granitic soils	Federal : ND State: ND CNPS: 4.2	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course.
Parry's spineflower (*Chorizanthe parryi* var. *parryi*) (1) (2)	Coastal scrub, chaparral, sometimes at the interface of two types of vegetation such as chaparral and oak woodlands, sandy soils.	Federal : ND State: ND CNPS: 1B.1	Absent; occurrence noted 30 years ago (1950); no likely habitat at the site or in adjacent areas to the site.
Paniculate tarplant (*Deinandra paniculata*) (1)	Annual herb found in costal scrub, valley and foothill grasslands, vernal pools; vernally mesic, somewhat sandy soils.	Federal : ND State: ND CNPS: 4.2	Absent; no suitable habitat is present at the site. The site is fully developed as a golf course.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Plants (continued)			
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) (1) (2)	Coastal salt marshes, playas, valley and foothill grasslands, vernal pools, usually found on alkaline soils.	Federal : ND State: ND CNPS: 1B.1	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) (2)	Chaparral, coastal scrub, and dry soils.	Federal : ND State: ND CNPS: 1B.2	Absent; occurrence noted 30 years ago (1952); no likely habitat at the site or in adjacent areas to the site.
San Bernardino aster (*Symphyotrichum defoliatum*) (1) (2)	Meadow and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, grasslands, vernally mesic grasslands, streams and springs.	Federal : ND State: ND CNPS: 1B.2	Absent; occurrence noted 30 years ago (1951); no likely habitat at the site or in adjacent areas to the site.
Birds			
Cooper's hawk (*Accipiter cooperii*)	Nests in woodlands, open or interrupted or marginal woodlands, riparian growths or deciduous trees, canyon bottoms on river flood-plains	Federal: ND State: ND	**High**; known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are suitable for occupation. The site could also be used as forage.
Tricolor blackbird (*Agelaius tricolor*)	Highly colonial species requires open water and protected substrate associated with marshes.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature does not have suitable vegetation around it for occupation by this bird.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	Southern California coastal sage scrub and sparse mixed chaparral; steep, often rocky hillsides with grass and forb patches.	Federal: ND State: ND	Moderate; the site has trees that may be used as nesting site. Habitat found south of APN 304-100-008 is poor quality chaparral scrub dominated by non-native ruderal weeds that may be suitable habitat for this bird.
Burrowing owl (*Athene cunicularia*)	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Federal: ND State: California Species of Concern	**High**; known occurrences have been recorded between 5 and 10 miles from the site. Portions of APN 304-030-055 have California ground squirrels and suitable habitat for occupation by burrowing owl is present.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Birds (continued)			
Bell's sage sparrow (*Artemisiospiza belli belli*)	Nests in chaparral dominated by fairly dense stands of chemise. Found in coastal sage scrub habitat.	Federal: ND State: California Species of Special Concern	**Moderate**; the site has trees that may be used as nesting site. Habitat found south of APN 304-100-008 is poor quality chaparral scrub dominated by non-native ruderal weeds that may be suitable habitat for this bird.
Ferruginous hawk (*Buteo regalis*)	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.	Federal: ND State: ND	**High**; known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are suitable for occupation. The site could also be used as forage.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	Nests in riparian jungles of willow often mixed with cottonwoods with a lower story of blackberry, nettles or wild grape.	Federal: FT State: SE	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature does not have suitable vegetation around it for occupation by this bird.
Yellow-breasted chat (*Icteria virens*)	Summer resident of riparian thickets of willows and other brushy tangles near water courses.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature does not have suitable vegetation around it for occupation by this bird.
Coastal California gnatcatcher (*Polioptila californica californica*)	Obligate resident of coastal sage scrub in arid washes on mesas and slopes.	Federal: FT State: California Species of Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site is not suitable for occupation by this bird. Habitat found south of APN 304-100-008 is poor quality chaparral scrub dominated by non-native ruderal weeds and likely unsuitable for occupation by this bird.
Lawrence's goldfinch (*Spinus lawrencei*)	Nests in open oak or other arid woodland and chaparral; near water and herbaceous habitats for foraging.	Federal: ND State: ND	**Moderate**; known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature and adjacent trees may be suitable occupation by this bird.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Birds (continued)			
Least Bell's vireo (*Vireo bellii pusillus*)	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms.	Federal: FT State: SE	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature does not have suitable vegetation around it for occupation by this bird.
Amphibians			
Western spadefoot (*Spea hammondii*)	Primarily in grassland habitat but can be found in valley-foothill hardwood woodlands; vernal pool required for breeding and egg-laying.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, the site is a fully developed golf course. Water feature at the site is surrounded by a golf course on all sides and no upland habitat s present for occupation.
Mammals			
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	Coastal scrub, chaparral, grasslands with sandy soils, herbaceous areas usually associated with rocks or coarse gravel.	Federal: ND State: California Species of Special Concern	**High**; portions of APN 304-100-008 may be suitable for occupation by this mammal. No suitable habitat for this mammal present at APNs 304-100-007 and 304-030-005.
Stephens' kangaroo rat (*Dipodomys stephensi*)	Primarily annual and perennial grasslands but also occurs in coastal scrub and sagebrush with sparse canopy cover.	Federal: FE State: ST	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
San Bernardino kangaroo rat (*Dipodomys merriami parvus*)	Alluvial scrub vegetation on sandy loam substrate characteristic of alluvial fans and flood plans.	Federal: FE State: Species of Special Concern	Absent; occurrence noted 30 years ago (1931); no likely habitat at the site or in adjacent areas to the site.
Western mastiff bats (*Eumops perotis californicus*)	Many open , semi-arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, roosts in crevices of cliff faces, high buildings, trees and tunnels.	Federal: ND State: Species of Special Concern	**High**; known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site is suitable occupation by this mammal.
Western yellow bat (*Lasiurus xanthinus*)	Valley foothill riparian areas desert riparian and wash areas. Roosts in trees particularly in palms and forages over water and among trees.	Federal: ND State: ND	**High**; known occurrences have been recorded between 5 and 10 miles from the site, the on-site water feature and adjacent trees may be suitable occupation by this mammal.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Mammals (continued)			
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	Intermediate canopy stages of shrub habitats and open shrub/herbaceous and tree/herbaceous edges.	Federal: ND State: Species of Special Concern	Absent; habitat at the site and in adjacent areas to the site is a fully developed golf course with very little shrubs and herbaceous plants that could be used as cover.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	Lower elevation grasslands and coastal sage communities; open ground with fine sandy soils. Will use weeds and dead leaves as cover.	Federal: ND State: California Species of Special Concern	**High;** portions of APN 304-100-008 may be suitable for occupation by this mammal. No suitable habitat for this mammal present at APNs 304-100-007 and 304-030-005.
American badger (*Taxidea taxus*)	Most abundant in drier open stages of most shrub, forest and herbaceous habitats with friable soils.	Federal: ND State: California Species of Concern	Absent; occurrence noted 30 years ago (1908); no likely habitat at the site or in adjacent areas to the site.
Reptiles			
Orange-throated whiptail (*Aspidoscelis hyperythra*)	Low elevation coastal scrub and prefers washes and other sandy areas with patches of brush and rocks, perennial plants necessary for termites, a major food source.	Federal: ND State: California Species of Special Concern	**High**; portions of APN 304-100-008 may be suitable for occupation by this reptile. No suitable habitat for this mammal present at APNs 304-100-007 and 304-030-005.
Coastal whiptail (*Aspidoscelis tigris stejnegeri*)	Found in desert and semiarid areas with sparse vegetation and open areas, woodlands and riparian areas. Ground may be firm soil, sandy or firm	Federal: ND State: California Species of Special Concern	**High**; portions of APN 304-100-008 may be suitable for occupation by this mammal. No suitable habitat for this mammal present at APNs 304-100-007 and 304-030-005.
Northern red-diamond rattlesnake (*Crotalus ruber*)	Chaparral, woodland, grassland or desert areas. Occurs in rocky areas and dense vegetation. Needs rodent burrows, cracks in rocks or surface cover objects.	Federal: ND State: California Species of Special Concern	**Low**; habitat at the site and in adjacent areas to the site is a fully developed golf course. Habitat found to the south of APN 304-100-008 may be suitable for this reptile.
Western pond turtle (*Emys marmorata*)	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches; usually with aquatic vegetation.	Federal: ND State: California Species of Special Concern	**Low**; known occurrences have been recorded between 5 and 10 miles from the site, the water feature in APN 304-030-005 while suitable, is man-made and this turtle would need to be introduced to be present.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Resource	Habitat and Distribution	Status Designation	Occurrence Probability
Reptiles (continued)			
Coast horned lizard (*Phrynosoma blainvillii*)	Inhabits coastal sage scrub and chaparral in arid and semi-arid climates.	Federal: ND State: California Species of Special Concern	Absent; while known occurrences have been recorded between 5 and 10 miles from the site, habitat at the site and in adjacent areas to the site are unsuitable for occupation.
Coast patch-nose snake (*Salvadora hexalepis virgultea*)	Brushy or shrubby vegetation in coastal southern California; requires small mammal burrows for refuge and overwintering sites.	Federal: ND State: California Species of Special Concern	**Low**; habitat at the site and in adjacent areas to the site is a fully developed golf course. Habitat found to the south of APN 304-100-008 may be suitable for this reptile.
Habitat			
Southern Sycamore Alder Riparian Woodland		No designation	This habitat type is not found on the site or in adjacent areas to the site.

Appendix A
Sensitive Biological Resources
Moreno Valley Ranch Golf Course
Moreno Valley, California

Notes:
ND No Designation

Federal Status:
C Candidate species
FE Federally listed Endangered
FT Federally listed Threatened
FPD Federally proposed for Delisting

State Status:
SE State listed Endangered
ST State listed Threatened
CSC California Department of Fish and Game Species of Concern
P California Department of Fish and Game Protected Species (Fully)

California Native Plant Society (CNPS) List:
1A Plants presumed extinct in California
1B.1 Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2 Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
1B.3 Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
2.1 Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2.2 Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
2.3 Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
3.1 Plants about which we need more information; seriously threatened in California
3.2 Plants about which we need more information; fairly threatened in California
3.3 Plants about which we need more information; not very threatened in California
4.1 Plants of limited distribution; seriously threatened in California
4.2 Plants of limited distribution; fairly threatened in California
4.3 Plants of limited distribution; not very threatened in California

Sources for plant:
(1) California Native Plant Society, Rare Plant Program. 2017. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 14 November 2017].
Source for both plants and wildlife:
(2) California Department of Fish and Game, Natural Diversity Data Base, Sunnymead USGS 7.5' Quadrangle, 14 November 2017.

Appendix B
Flora and Faunal Compendium
Moreno Valley Ranch Golf Course
Moreno Valley, California

Flora	Flowering Plants
Gymnospermae	**Naked-Seed Plants**
Pinacea	**Pine Family**
Pinus canariensis	Canary Island pine*
Pinus eldarica	Mondale pine*
Angiospermae: Monocotyledonae	**Monocot Flowering Plants**
Arecaceae	**Palm Family**
Phoenix canariensis	Canary island palm*
Washingtonia filifera	Fan palm
Poaceae	**Grass Family**
Cynodon dactylon	Bermuda grass*
Distichilis spicata	Salt grass
Fescue sp.	Fescue*
Hordeum vulgare	Barley*
Sorghum halepense	Johnson grass*
Typhaceae	**Cattail Family**
Typha latifolia	Common cattail
Angiospermae: Dicotyledonae	**Dicot Flowering Plants**
Aizoaceae	**Ice Plant Family**
Mesembryanthemum crystallinum	Common ice plant*
Anacardiaceae	
Schinus molle	Peruvian pepper*
Schinus terebinthifolius	Brazilian pepper*
Amaranthaceae	**Pigweed Family**
Amaranthus albus	Tumble pigweed*
Amaranthus blitoides	Prostrate pigweed*
Asteraceae	**Sunflower Family**
Conyza canadensis	Horseweed*
Cnicus benedictus	Blessed thistle*
Encelia farinosa	Brittlebush
Matricaria matricarioides	Pineapple weed
Sonchus oleraceus	Sow thistle*
Xanthium strumarium	Cockelbur
Boraginaceae	**Borage Family**
Phacelia sp.	Scorpionweed
Brassicaceae	**Mustard Family**
Hirschfeldia incana	Short-pod mustard*
Sisymbrium irio	London rocket*
Cactaceae	**Cactus Family**
Cylindropuntia californica	California cholla
Chenopodiaceae	**Goosefoot Family**
Salsola tragus	Russian thistle*
Cucurbitaceae	**Gourd Family**
Cucurbita palmata	Coyote melon

Appendix B
Flora and Faunal Compendium
Moreno Valley Ranch Golf Course
Moreno Valley, California

Plants (continued)

Euphorbiaceae	**Spurge Family**
Croton setigerus	Dove weed
Ricinus communis	Castor bean*
Fabaceae	**Legume Family**
Acacia redolens	Desert carpet*
Jacarandae	**Jacaranda Family**
Jacaranda mimosifolia	Jacaranda*
Lamiaceae	**Mint Family**
Salvia mellifera	Black sage
Rosmarinus officinalis	Rosemary*
Malvaceae	**Mallow Family**
Ceiba speciosa	Silk floss tree*
Moraceae	**Mulberry Family**
Ficus carica	Common fig*
Polygonaceae	**Buckwheat Family**
Rumex crispus	Curly dock*
Eriogonum fasciculatum	California buckwheat
Polygonum aviculare	Prostrate knotweed*
Proteaceae	**Protea Family**
Grevillea robusta	Silky oak*
Salicaceae	**Willow Family**
Populus fremontii	Cottonwood
Salix laevigata	Red willow
Sapindaceae	**Soapberry Family**
Cupaniopsis anacardioides	Carrot wood*
Solanaceae	**Nightshade Family**
Physalis philadelphica	Tomatillo ground cherry*
Tamaricaceae	**Tamarisk Family**
Tamarisk ramosissima	Salt cedar*
Fauna	**Wildlife**
Aves	**Birds**
Accipitridae	**Falcons**
Accipiter striatus	Sharp-shinned hawk
Buteo jamaicensis	Red-tailed hawk
Aegithalidae	**Bushtits**
Psaltriparus minimus	*bushtits*
Anatidae	**Ducks, Geese and Swans**
Ana platyrhynchos	Mallard
Aythra collaris	Ring-necked duck
Charadriidae	**Plovers, Dotterels and Lapwings**
Charadrius vociferus	Killdeer
Columbidae	**Pigeon and Doves**
Zenaida macroura	Mourning dove
Columba livia	Feral dove

Appendix B
Flora and Faunal Compendium
Moreno Valley Ranch Golf Course
Moreno Valley, California

Birds (continued)

Corvidae	**Jays, Crows and their Allies**
Corvus brachyrhynchos	American crow
Emberizidae	**New World Sparrows**
Melozone crissalis	California towhee
Zonotrichia leucophrys	White-crowned sparrows
Fringillidae	**Finches**
Haemorhous mexicanus	House finch
Odontophoridae	**New World Quails**
Callipepla californica	California quail
Icteridae	**Blackbirds, Orioles, Meadowlarks and their Allies**
Sturnella neglecta	Meadowlark
Passeridae	**Old World Sparrow**
Passer domesticus	English sparrow
Picidae	Woodpeckers,
Dryobates nuttallii	Nuttall's woodpecker
Regulidae	**Kinglets**
Regulus calendula	Ruby-crowned kinglet
Rallidae	**Crakes, Coots and Gallinules**
Fulica americana	Mud hen
Trochilidae	**Hummingbirds**
Archliochus alexandri	Black-chinned hummingbird
Calypte anna	Anna's hummingbird
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Tyrannidae	**Tyrant Flycatchers**
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
Mammalia	**Mammals**
Geomydae	**Pocket gopher**
Thomomys bottae	Botta's pocket gopher
Sciuridae	**Squirrels**
Spermophilus beecheyi	California ground squirrel

Denotes non-native plant

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Los Angeles Pocket Mouse Habitat Assessment for Assessor Parcel Number (APN) 304-100-008 in Riverside County

This report presents the methods and results of the Los Angeles Pocket Mouse (LAPM) (*Perognathus longimembris brevinasus*) Habitat Assessment performed for a portion of the former golf course at the Moreno Valley Ranch Golf Course (project site; parcel APN# 304-100-008) in the City of Moreno Valley in Riverside County. The purpose of the survey was to assess the presence or absence of LAPM and habitat at or adjacent to the project site.

Summary

Suitable habitat for LAPM on or adjacent to the site was found during the habitat assessment. Ironwood Consulting recommends further surveys for this species to confirm the presence of LAPM.

Introduction and Project Description

Assessor Parcel Number 304-100-008 is located in the city of Moreno Valley, Riverside County, within Township 3 South, Range 3 West, Sections 22 and 23 (Figure 1). Elevations at the site range from 1,500 feet to 1,800 feet (457 to 548 meters) above mean sea level. Soils on the project site are a dominated by sandy loam with site slopes approximately 5-30% and a northwestern aspect. The project site is a portion of a developed golf course, currently not in use.

Methods

The LAPM is a small mouse that inhabits coastal sage scrub, desert scrub, chaparral, grassland, sandy washes, and any other open areas with low vegetation. Los Angeles pocket mouse are primarily nocturnal and tend to forage under shrub and tree canopies and around rock crevices when they are most active between May and September.

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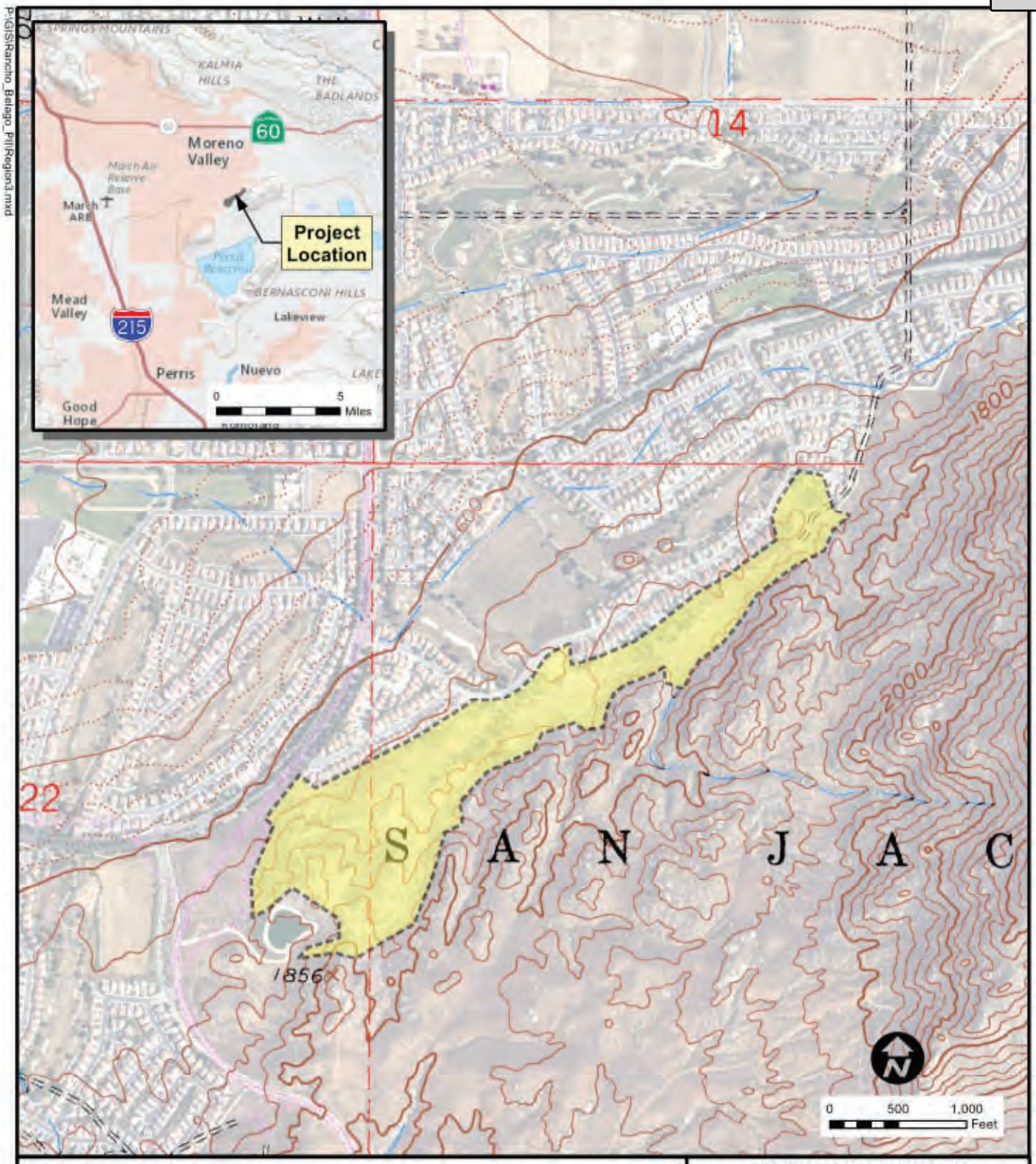


Project Boundary

MORENO VALLEY RANCH GOLF COURSE

Figure 1

Project Location

Source:
USGS 7.5' topographic quadrangle, Sunnymead, CA 1967, revised 1980.
NAIP aerial image, May 2016.

TETRA TECH

Prior to the habitat assessment, complete relevant biological information for the site and surrounding area was reviewed, including databases at the California Natural Diversity Database (CNDDB 2017), and California Native Plant Society's Electronic Inventory (CNPSEI 2017). This information includes one record of LAPM found approximately three miles southeast of the site in 2000, and a Stephens' kangaroo rat (SKR; *Dipodomys stephensi*) in the NW part of the site in 2000.

On November 13, 2017 Kathryn Simon under her Memorandum of Understanding (MOU) from the California Department of Wildlife (CDFW) for LAPM and Maribel Lopez conducted a protocol-level habitat assessment for LAPM on the approximately 67-acre parcel APN# 304-100-008. This habitat assessment met all requirements of the Western Riverside County's Multiple Species Habitat Conservation Plan (MSHCP) Phase I Habitat Assessment for LAPM (MSHCP protocols 2003).

This survey was conducted by driving and/or walking all areas of the project site and making notes for the site regarding the vegetation communities present, level of human disturbance, and potential for LAPM. Air temperature during the time of the survey varied between 57° and 70° (14° to 21° Celsius), cloud cover was approximately 50% of thin wispy clouds that cleared by end of survey, and winds varied between 0 and 2 miles (0 and 3 kilometers) per hour.

Results

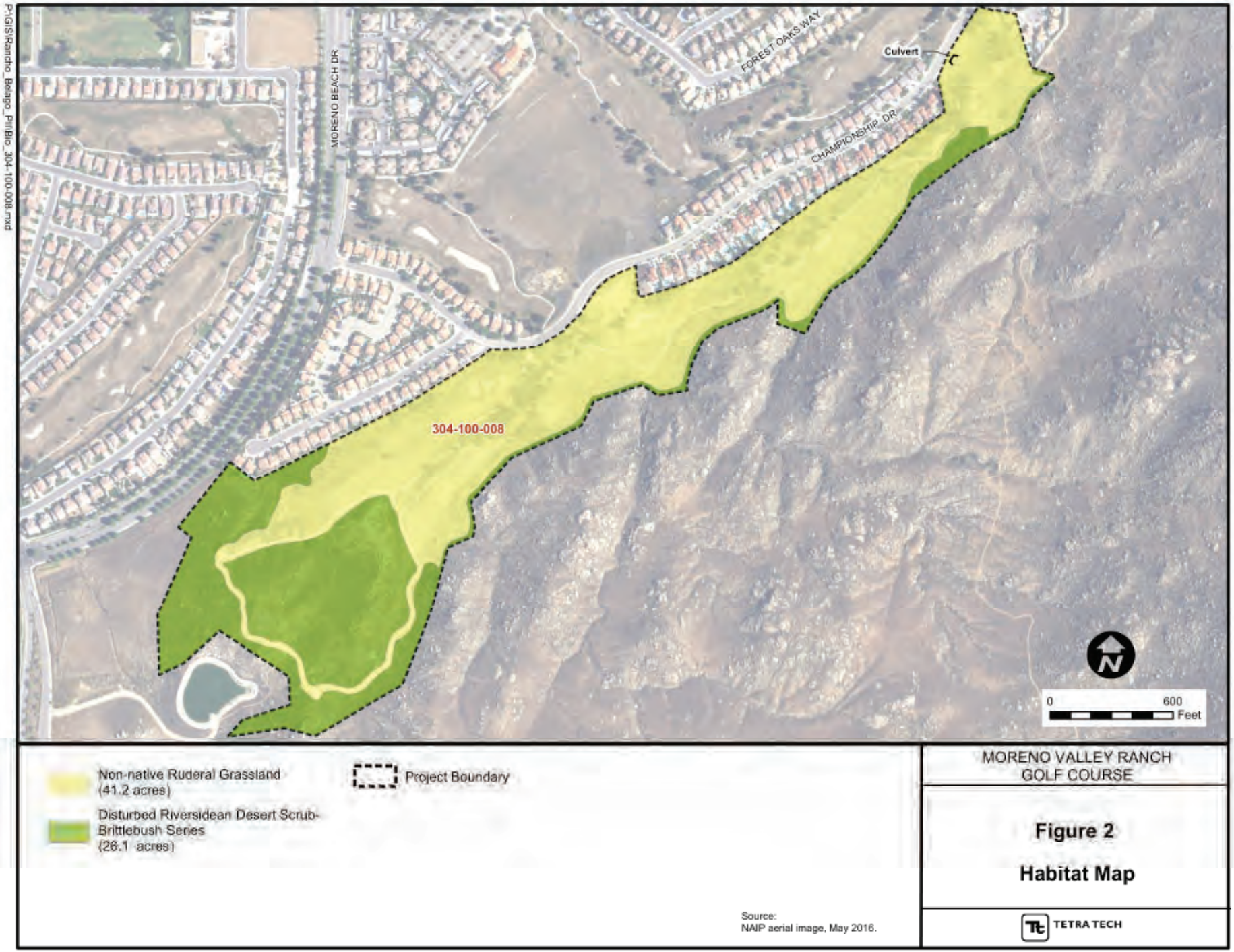
General Site Characteristics

The site includes highly disturbed areas, all due to the previously established golf course (Appendix A). In the upper north east along the south border of the site there is remnant sage scrub. On the west end of the site there is chaparral sage scrub habitat on the site. A list of plant species observed at the project site is found in Appendix B.

Land uses surrounding the project site include high density housing to the north, east, and west. To the south there is an undisturbed area, outside of the site, that is State of California Department of Parks and Recreation (Figure 2). Representative photos of the project site are found at the end of this report.

Highly disturbed areas include developed parcels for the previously present golf course (mowed landscaping, existing bathroom structure, and cement walkways throughout) almost entirely devoid of native vegetation; any remaining vegetation is sparse or deliberately landscaped, most often with non-native species such as Russian thistle (*Salsola tragus*), pine (*Pinaceae* sp.), ice plant (*Carpobrotus edulis*), brome (*Bromus* sp.) and tansy mustard (*Brassica* sp.). Disturbed sandy soils throughout especially in the sand traps of the golf course. Low level of trash are present.

There is a less disturbed area located on the southern edge of the site, which supports chaparral sage scrub habitat. The vegetation in this area had California buckwheat (*Eriogonum fasciculatum*), golden head (*Acamptopappus spaerocephalus*), cholla (*Cylindropuntia* sp.), tamarisk (*Tamarix* sp.), and palo verde (*Parkinsonia florida*).



Wildlife species or sign that were observed during this survey included, black phoebe (*Sayornis nigricans*), coyote (*Canis latrans*), hummingbird (*Trochilidae sp*.), northern flicker (*Colaptes auratus*), and a red-tailed hawk (*Buteo jamaicensis*). This area also has a few existing cement culverts throughout the site and a drainage feature along the development of residences.

Los Angeles Pocket Mouse Habitat Assessment

The Los Angeles pocket mouse is a state-threatened species that prefers arid sandy habitats and lives a nocturnal lifestyle, with decreased activity levels in the winter. Potential habitat and burrows that could be used by the Los Angeles pocket mouse was found during this habitat assessment (see photos n Appendix A). No other sensitive species were observed or detected by sign (e.g., vocalization, scat, burrows) during the survey.

Conclusions and Recommendations

The site contains suitable habitat for LAPM throughout the nonnative grassland habitats on the site. Ironwood Consulting recommends further surveys for this species to confirm the presence of LAPM in the project area.

References

California Natural Diversity Database (CNDDB), 2017. Sunnymead 7.5 minute quadrangle search.

California Native Plant Society Electronic Inventory (CNPSEI), 2017. Sunnymead 7.5 minute quadrangle search.

Los Angeles Pocket Mouse Survey Guidelines, Western Riverside MSHCP, undated.

APPENDIX A Site Photos

Photo 1 View northeast across abandoned golf course

Photo 2 One of the sand traps from previous golf course

Photo 3 Many burrows throughout site

Photo 4 Sidewalk and landscape pines throughout

Photo 5 Cement culverts at site

Appendix BPlant List

Scientific Name	Common Name
Angiosperms - Monocots	
ARECACEAE	**PALM FAMILY**
Areca sp.	Landscape palm
POACEAE	**GRASS FAMILY**
Bromus sp.	Brome
Angiosperms - Dicots	
AIZOACEAE	**FIG-MARIGOLD FAMILY**
Delosperma sp.	Ice plant
ANACARDIACEAE	**CASHEW FAMILY**
Schinus sp.	Pepper tree
ASTERACEAE	**SUNFLOWER FAMILY**
Acamptopappus sphaerocephalus	Golden head
BRASSICACEAE	**MUSTARD FAMILY**
Brassica sp.	Mustard
CACTACEAE	**CACTUS FAMILY**
Cylindropuntia sp.	Cholla
CHENOPODIACESE	**GOOSEFOOT FAMILY**
*Salsola tragus**	Russian thistle
FABACEAE	**PEA FAMILY**
Parkinsonia microphylla	Palo verde
FAGACEAE	**OAK FAMILY**
Quercus californicus	Oak
OLEACEAE	**OLIVE FAMILY**
Olea europaea	Ornamental olive tree
POLYGONACEAE	**BUCKWHEAT FAMILY**
Eriogonum fasciculatum	California buckwheat
SALICACEAE	**WILLOW FAMILY**
Salix sp.	Willow
LAMIACEAE	**MINT FAMILY**
Salvia apiana	White sage
TAMARICACEAE	**TAMARISK FAMILY**
Tamarix sp.	Tamarisk
Gymosperms	
PINACEAE	**PINE FAMILY**
Pinus sp.	Landscape pine

Attachment E-3

BIOLOGICAL REPORT SUMMARY SHEET

Applicant Name: Mr. Eric Heffner, ROC III CA Belago, LLC.
Assessor's Parcel Number(s) (APN): 304-303-005, 304-100-007, 304-100-008
APN cont. : _____
Site Location: Section: 22, 23, 14 **Township:** T3S **Range:** R3W
Site Address: NA
Related Case Number(s): Unknown **PDB Number:** unknown

Check ITEM(S) Habitat Assessment	*Check ITEM(S)* * Focused Survey	SPECIES or HABITAT OF CONCERN	(Circle whether a potential for significant impact to species or resource exists **)	
		Arroyo Southwestern Toad	Yes	No
✓		Drainages/Waters of U.S.	(Yes)	No
		Coachella Valley Fringed-Toed Lizard	Yes	No
		Coastal California Gnatcatcher	Yes	No
		Coastal Sage Scrub	Yes	No
		Delhi Sands Flower-Loving Fly	Yes	No
		Desert Pupfish	Yes	No
		Desert Slender Salamander	Yes	No
		Desert Tortoise	Yes	No
		Flat-Tailed Horned Lizard	Yes	No
		Least Bell's Vireo	Yes	No
		Oak Woodlands	Yes	No
		Quino Checkerspot Butterfly	Yes	No
		Riverside Fairy Shrimp	Yes	No
		Santa Ana River Woolystar	Yes	No
		San Bernardino Kangaroo Rat	Yes	No
		Slender Horned Spineflower	Yes	No
		Stephens' Kangaroo Rat	Yes	No
✓		Vernal Pools	Yes	(No)

Check ITEM(S) Habitat Assessment	*Check ITEM(S)* * Focused Survey	SPECIES or HABITAT OF CONCERN	(Circle whether a potential for significant impact to species or resource exists **)	
✓		Wetlands	Yes	(No)
✓		Riparian Habitat	Yes	(No)
✓		Burrowing Owl	(Yes)	No
		Bighorn Sheep	Yes	No
		Red-legged Frog	Yes	No
✓		Other Los Angeles pocket mouse	(Yes)	No
✓		Other Riverine habitat	(Yes)	No
		Other	Yes	No
		Other	Yes	No
		Other	Yes	No

* Focused Survey: a) Survey on a listed species performed per USFWS or CDFG protocol by licensed individual (i.e., CaGn, SKR, QCB), OR b) For non-listed spp., survey performed per protocol recognized by USFWS or CDFG, or other applicable agency (i.e., Burrowing Owl), OR c) For jurisdictional waters, wetlands, & riparian areas, following protocol of U.S.Army Corp of Engineers.

** Species of concern are any unique, rare, endangered, or threatened species; species used to delineate wetlands and riparian corridors; and any hosts, perching, or food plants used by any animals listed as rare, endangered, threatened or candidate species by either State or Federal regulations, or those tracked by the California Department of Fish and Game Natural Diversity Data Base (NDDB).

I declare under penalty of perjury that the information provided on this summary sheet is in accordance with the information provided in the biological report.

Stephanie Parker — 11/20/17

Signature and Title — Date Report Prepared

N/A

10(a) Permit Number (if applicable) — 10(a) Permit Expiration Date

County Use Only

Received by:_____ **Date:**_____

PD-B#_____ **Related Case #:**_____

LEVEL OF SIGNIFICANCE CHECKLIST FOR BIOLOGICAL RESOURCES

APN *: 304-303-005, 304-100-007, 304-100-008 **Riverside County Case No.*:** Unknown **EA Number:**_____

Wildlife & Vegetation

Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

(*Check the level of impact that applies to the following questions*)

a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?

No impact.

b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?

No impact.

c) 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 Game or U. S. Wildlife Service?

Less than significant with mitigation incorporated.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No impact.

e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?

Less than significant with mitigation incorporated.

f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act or Section 1600 of the California Fish and Game Code (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than significant with mitigation incorporated.

g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact.

h) Create any impact which is individually limited, but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual 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 as defined in Section 15130 (14 Calif. Code of Regs).

Less than significant with mitigation incorporated.

* Required

Attachment E-4

LEVEL OF SIGNIFICANCE CHECKLIST FOR BIOLOGICAL RESOURCES

Findings of Fact:

The site has been developed as an 18-hole golf course. Habitat at this site is open non-native grasslands dominated by ruderal non-native weeds with non-native landscaping trees. Portions of the site has disturbed native plants with an under story dominated by non-native weeds. No sensitive plants or wildlife were observed at the site. Habitat at the site is suitable for nesting birds and raptors. Portions of habitat in APN 304-030-005 is suitable for occupation by burrowing owl. Habitat is present in APN 304-100-008 for occupation by Los Angeles pocket mouse. The riverine drainage and open water present in APN 304-030-005 may be subject to regulatory authority by the U.S Army Corps of Engineers, Regional Water Quality Control Board and California Department of Fish and Wildlife.

Proposed Mitigation:

Entire Site: Nesting Bird survey if work will occur during nesting season (Raptors: January 1-July 31; Passerine birds: March 1-September 15). If nesting birds are present, buffers would be established. The dimensions of the buffer would be determined by the type of nesting bird. For APN 304-030-005, a 30-day pre-construction survey for burrowing owl survey would be conducted. If active, occupied burrows are found during the 30-day pre-construction survey, no disturbance within approximately 160 feet of an occupied burrow during the non-breeding season (September 1 to January 31); or no disturbance within 250 feet of an occupied burrow during the breeding season (February 1 to August 31). For APN 304-100-008: Focused presence/ absence night time trapping survey for LAPM would occur.

Monitoring Recommended:

None Recommended.

Prepared By: Stephanie Padres Date: 11/20/17

County Use Only

Received by:_____ Date:_____

PD-B#_____ Related Case #:

TETRA TECH

Stephanie Pacheco
Principal Soil Scientist

Education:
University of California, Riverside
M.S., Soil Science, 1989

Arizona State University, Tempe, Arizona
B.S., Environmental Resources in Agriculture, 1985

Registrations/Certifications:
Jurisdictional Delineation of Wetlands Certification, University of California Berkeley, 1996

Professional Affiliations:
Soil Science Society of America

American Society of Agronomy

Office:
San Bernardino, CA

Years of Experience:
27

Years with Tetra Tech:
27

Ms. Pacheco is a soil scientist with more than 26 years of experience as both a project manager and field scientist for many field investigations of biological resources associated with Edwards Air Force Base and other sites in southern California and Arizona. She has managed field investigations for listed and sensitive biological resources and has a comprehensive understanding of the regulatory environment associated with listed biological resources in California. As a delineator, Ms. Pacheco has completed numerous delineations of potential waters subject to regulatory authority in Southern California. She has successfully negotiated permits for both commercial entities, governmental agencies and non-governmental sovereign nations to satisfy Section 404 and 401 of the Clean Water Act plus California Department of Fish and Wildlife Code 1600 for projects impacting waters subject to regulatory authority. In support of these projects, she has determined potential project impacts to jurisdictional waters and received concurrence from both federal and state of California regulators on these findings. Consistent with Section 404 of the Clean Water Act, Ms. Pacheco has negotiated use of Nationwide Permits for utility line projects, linear transportation projects and clean-up of hazardous and toxic waste projects. She has also successfully completed an Individual Permit for a large development project in San Bernardino County. Ms. Pacheco is familiar with the requirements for seeking concurrence from the U.S. Army Corps of Engineers for Approved Jurisdictional Determinations/Preliminary Jurisdictional Determinations. Ms. Pacheco has successfully negotiated 401 Water Quality Certifications with the Lahontan, Los Angeles, Santa Ana and Colorado River Basin Regional Water Quality Control Boards. Finally, Ms. Pacheco has successfully negotiated Streambed Alteration Agreements in compliance with California Department of Fish and Wildlife Code for projects located in Los Angeles, San Bernardino and Riverside Counties.

EXPERIENCE

Biological Surveys

Habitat Assessment and for CALMAT Restoration Site, Riverside County Regional Park and Open Space District. Project manager and lead field surveyor for a general biological reconnaissance and habitat assessment for burrowing owl (*Athene cunicularia*), Los Angeles pocket mouse (*Perognathus longimembris brevinasus*, Criteria Area plant species and narrow endemic plant species at a 279.26-acre site located in an unincorporated area of Riverside County, California. The purpose of the reconnaissance was to conduct a general biological reconnaissance survey for the possible presence of sensitive biological resources and to determine if habitat conditions at the site were suitable for burrowing owl, Los Angeles pocket mouse, Criteria Area and narrow endemic plant species. The site will be used as mitigation for habitat losses. Restoration activities would include removal of non-native invasive weeds that dominate the site.

Focused Burrowing Owl (*Athene cunicularia*) Survey and Habitat Assessment for Commercial Projects, Riverside County, California. A number of Phase I and Phase II surveys were conducted for burrowing owl to determine likely habitat to support this raptor at various locations in Riverside County. For areas determined likely to support burrowing owl, Phase III focused surveys were conducted on three additional days were completed. Burrowing owl habitat assessment and surveys were conducted in compliance with the Western Riverside County Multi-species Habitat Conservation Plan.

Population Study, Reproductive Study and Germination Trials of Desert Cymopterus (*Cymopterus deserticola*) at Edwards Air Force Base, California. Project manager for a population study of desert cymopterus at two known populations on Edwards AFB. The population study was performed to determine population viability and environmental constraints of this plant. Provided project design and implementation as well as project management for this phase of investigations associated with desert cymopterus**.** Project manager for a study of the environmental and biological elements that may contribute to the reproductive success of desert cymopterus at two previously studied sites. Provided project design and implementation as well as project management for this phase of investigations associated with desert cymopterus. Project manager for a bench scale project designed to determine the best strategy for germinating desert cymopterus seeds. Numerous bench scale tests determined that cool, moist conditions in agar growth media with diurnal light was the best conditions to break dormancy and initiate germination.

Habitat Quality Assessment Surveys, 2003-2004, 2006, 2008-2009, Edwards Air Force Base, California. Project manager for field surveys of small mammals, large mammals, birds and reptiles at 60 pre-set grids at Edwards Air Force Base completed annually from 2003 to 2009. Data collection at prime habitat grids will be used by Edwards AFB to set goals for re-establishing desert habitat disturbed on base. He Habitat Quality Assessment surveys were completed by Tetra Tech at Edwards AFB in 1993. The methodology for this long-term monitoring project was devised by the Tetra Tech San Bernardino team to determine restoration goals for a large reservoir project in western Riverside County.

Study of Sonoran Pronghorn Antelope on the Barry M. Goldwater Range, Luke AFB, Arizona (2004-2005). Project Manager, responsible for the management of a study of ecological factors that may influence Sonoran pronghorn (SPH) (*Antilocapra americana sonoriensis*) antelope behavior. Tetra Tech reviewed available date and conducted natural resource surveys at the Barry M. Goldwater Range (BMGR). The goal was to collect and evaluate data about the hydrology, soil and vegetation of the BMGR in support of the ecology of the SPH. An evaluation of an existing database that contains sighting locations of SPH was also performed. Based on the study conducted, differences were observed in plants and hydrology between the study areas. Physical properties of soils associated with craters did not enhance the ability of the craters to retain water. Water retention in the craters appeared to be based on location within the landscape. Date collected during the field effort in the spring 2005 in conjunction with sighting data collected from 1999 to 2001 suggests that the animals are not preferentially selecting the HE hills over other locations they frequent on the BMGR.

Permitting and Jurisdictional Delineations

Delineation of Waters Subject to Regulatory Authority and Related Permits, White Knob-White Ridge Quarry, Lucerne, San Bernardino County, California. A delineation for jurisdictional wetland/ waters of the U.S. and waters of the State was completed for unnamed drainages in a 302-acre survey area associated with the White Knob Quarry in Lucerne Valley, San Bernardino County, California. The survey area included areas currently being quarried and portions of the site that are undisturbed but are part of a proposed quarry expansion. The purpose of the delineation was to determine the limits of waters subject to regulatory authority under Section 404 and 401 of the Clean Water Act and those regulated under California Department of Fish and Wildlife Code 1600 et seq. for any potential waters subject to state regulatory authority found within areas that are part of the proposed quarry expansion. Based on the findings of the delineation, Tetra Tech requested and received a determination that waters found within the quarry and expansion area were isolated and not subject to regulation under Section 404 by the U.S. Army Corps of Engineers. A Streambed Alteration Agreement for project impacts to waters regulated by the California Department of Fish and Wildlife is currently in preparation. Based on the presence of a

regulated wetland, a Waste Discharge Requirement permit will be sought from the Regional Water Quality Control Board-Colorado River Basin.

Jurisdictional Delineation for Waters Subject to Regulatory Authority and Related Permits for the Daggett Bridge Replacement Project, San Bernardino County, California. Completed a delineation of waters subject to regulatory authority for a portion of the Daggett Ditch located outside the Community of Daggett, San Bernardino County, California. The delineation was completed to support Clean Water Act and California Department of Fish and Wildlife permits for a bridge replacement project. The bridge crossing Daggett Ditch associated with historic Route 66 required replacement. In addition to the delineation, a request for use of a Nationwide Permit, a Water Quality Certification and a Streambed Alteration Agreement for the Daggett Bridge Replacement Project was also completed.

Water Quality Certification and Streambed Alteration Agreement for the Restoration of the South Vermont Avenue Drains, City of Gardena, California. Completed a general biological reconnaissance and delineation of waters subject to regulatory authority for the area of potential effect associated with the Gardena Willows Wetland Preserve as a result of a drain pipe failure beneath South Vermont Avenue. Completed a Water Quality Certification in compliance with Section 401 of the Clean Water Act and a Streambed Alteration Agreement in compliance with Section 1600 et seq. of the California Department of Fish and Wildlife code. Permitting under Section 404 of the Clean Water Act was not formally sought as thresholds for requiring this permit were not exceeded.

Water Quality Certification and Streambed Alteration Agreement, San Manuel Band of Mission Indians. In support of a channel improvement project located on non-tribal lands, prepared permits applications for a Streambed Alteration Agreement and a Water Quality Certification for the proposed improvement of Sand Creek Channel. The proposed County of San Bernardino Flood Control project includes lining Sand Creek from Lynwood Avenue to the Patton Detention Basin. Project related activities also include preparation and processing of an Initial Study/Mitigated Negative Declaration for the project. Section 404 Request for Use of Nationwide Permit for this project was processed by outside council.

Individual Permit/Water Quality Certification/Streambed Alteration Agreement, Pacific Communities Builders Development, Victorville, California. Conducted a jurisdictional delineation of a tributary of the Mojave River, and subsequent 404/401 and 1600 et. seq permitting for a 258 acre development in Victorville, California. Mitigation for loss of jurisdictional waters negotiated with the U.S. Army Corps of Engineers and the Regional Water Quality Control Board-Lahontan District. Mitigation for loss of burrowing owl (*Athene cunicularia*) habitat was negotiated with the California Department of Fish and Wildlife. The Individual Permit required the preparation of an Environmental Assessment (EA) as per the National Environmental Policy Act (NEPA).

Use of Nationwide Permits/Water Quality Certification Waiver/Streambed Alteration Agreement for Wind Energy Conversion System (WECS) Project, Palm Springs, California. Completed permitting applications to satisfy Section 404/401 of the Clean Water Act and 1600 et. seq of the California Department of Fish and Wildlife Code for wind energy projects in the Palm Springs area. Negotiations with U.S. Army Corps of Engineers, Regional Water Quality Control Board-Colorado River Basin Region and the California Department of Fish and Wildlife were completed for this project as well as informal consultation for the listed Coachella milk vetch (*Astragalus lentiginosus* var. *coachellae*).

APPENDIX F

HYDROLOGY

AND

HYDRAULIC STUDIES

Tract 37189
City of Moreno Valley

PEN16-0130

Prepared for:
Eric Heffner
ROCIII CA BELAGO, LLC
2611 South Coast HWY, Suite 205
Cardiff by The Sea, CA 92007
Phone: (858) 205-4072

Prepared by:
Mariela Anguelov, PE
Winchester Associates, Inc.
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Moreno Valley, CA 92553
Telephone: (951) 924-5425

Date: July 2017

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Appendix A - Hydrology Rational Method Studies

Pre-Developed Conditions Studies

10 Year On-site

100 Year On-site

Post-Developed Conditions Studies

10 Year On-site

100 Year On-site

Appendix B – Water Quality Facility Sizing Calculations

Infiltration Basin Sizing Calcs

Appendix c – Reference Drawings

Mass Grading Plan for Moreno Valley Ranch Golf Club

PM 22936 Moreno MDP Line F-5

Tract 22552 Storm Drain Improvement Plans – Line F

Conceptual Grading Plan for PEN16-0130

Attached Exhibits

Hydrology Map Pre-Developed Conditions (Scale 1”=100’)

Hydrology Map Post-Developed Conditions (Scale 1”=60’)

Discussion

The purpose of this study is to determine the off-site and on-site hydrology for the design of Parcel Map No. 37189, in the City of Moreno Valley, County of Riverside, State of California. The study uses the procedures outlined in the Riverside County Flood Control and Water Conservation District (RCFC & WCD) Hydrology Manual, dated April 1978. Rational – Hydrology Program Package of CIVILD Engineering Software was used to determine 10 year 1 hour and 100 year 1 return frequency storm runoffs.

Site Description

Parcel Map 37189 consists of four parcels (49.99 gross acreage). Parcel 1 (existing club house and parking lot) and parcel 4 (open space/ golf course) will remain undisturbed and are not a part of this study. Parcel 3 will remain undeveloped (open space) but may be regraded. Parcel 2 (21.96 ac) aka Project Site, will be developed as high density residential area (R-20) named Rancho Belago Phase 2 Homes and will consists of 416 units (15 building), 520 surface parking stalls, a club house, a swimming pool, and other amenities.

The project site is an irregular shaped parcel located south of John F Kennedy Drive and east of Moreno Beach Drive, within the existing driving range of the Moreno Valley Ranch Golf Course. The topography of the site is generally planar within the northern portion of the site, becoming hummocky and rising at an average gradient of approximately 9 horizontal to 1 vertical southeasterly. The highest elevation of the site is in the southwestern corner, at approximately 1,686 feet and lowest is in the northeastern corner, at approximately 1,597 feet above Mean Sea Level (MSL).

The site is bordered on the north by the existing golf course club house and apartments complex, both followed by John F Kennedy Drive. Hole 1 Mountain borders the site on the east-southeast and Hole 9 Mountain borders the site on the west-southwest. Championship Drive and some residential homes border the site on the south. The project is a portion of Sections 23, T. 3S., R. 3W, SBM.

Pre-Developed Conditions

(See attached Pre-Developed Conditions Hydrology Map)

The on-site tributary area used for the hydrology analysis is 26.35 ac and includes Parcel 2 and Parcel 3. During the pre-developed condition an existing 48" RCP culvert discharges 195 cfs into Parcel 2 and an existing 36" RCP culvert discharges 52 cfs into Parcel 3. These are off-site runoffs accumulated by a tributary area southerly of Championship Drive per Moreno Valley Ranch Golf Club mass grading plans. (See Appendix C)

The combined off-site and on-site runoff flows to the northeast corner of the project site and through the storm drain system consisting of an existing concrete culvert box under Moreno Beach Drive and two 36" RCP pipes is discharges into Detention Basin "J" and Moreno MDP Line F-5A. (See Appendix C – Moreno ADP Line F-5 Storm Drain Improvement Plans)

The existing off-site flows are not included into the analysis because during the post-developed condition, through a proposed storm drain and/or graded channel trough the existing golf course, they will by-pass the project site.

The on-site tributary area included in the analysis generates Q_{10}=25.3 cfs and Q_{100}=40.3 cfs. During the pre-developed condition the land use of the project site is open space-golf course, therefore in the rational Method calculations "Undeveloped Fair Cover" subarea land use was used. (See Appendix A for hydrology calculations)

Post - Developed Conditions

(See attached Post-Developed Conditions Hydrology Map)

During post-developed condition the existing drainage patterns will remain the same.

The existing off-site flows are not included into the analysis because during the post-developed condition, through a proposed storm drain and/or graded channel trough the existing golf course, they will by-pass the project site.

A system of storm drain pipes, catch basins and drop in inlets will capture the accumulated on-site runoff and will discharge it at the existing concrete box culvert under Moreno Beach Drive. The tributary area is 26.58 ac and generates Q_{10}=32.4 cfs and Q_{100}=49.0 cfs. During the post-developed condition the development type is "Apartments", but because 35% of the project

site is landscaped in the rational Method calculations “Condominiums” subarea development type use was used. (See Appendix A for hydrology calculations.)

Water Quality Facility

First flush and dry weather nuisance flows shall be routed through the proposed structural LID BMP (infiltration basin). The infiltration rate at the area where the water quality facility is designed is 2.0 in/h, therefore an infiltration basin is feasible to be implemented. The capacity of the infiltration basin is 31,500 cf. (See Appendix B for sizing calculations.)

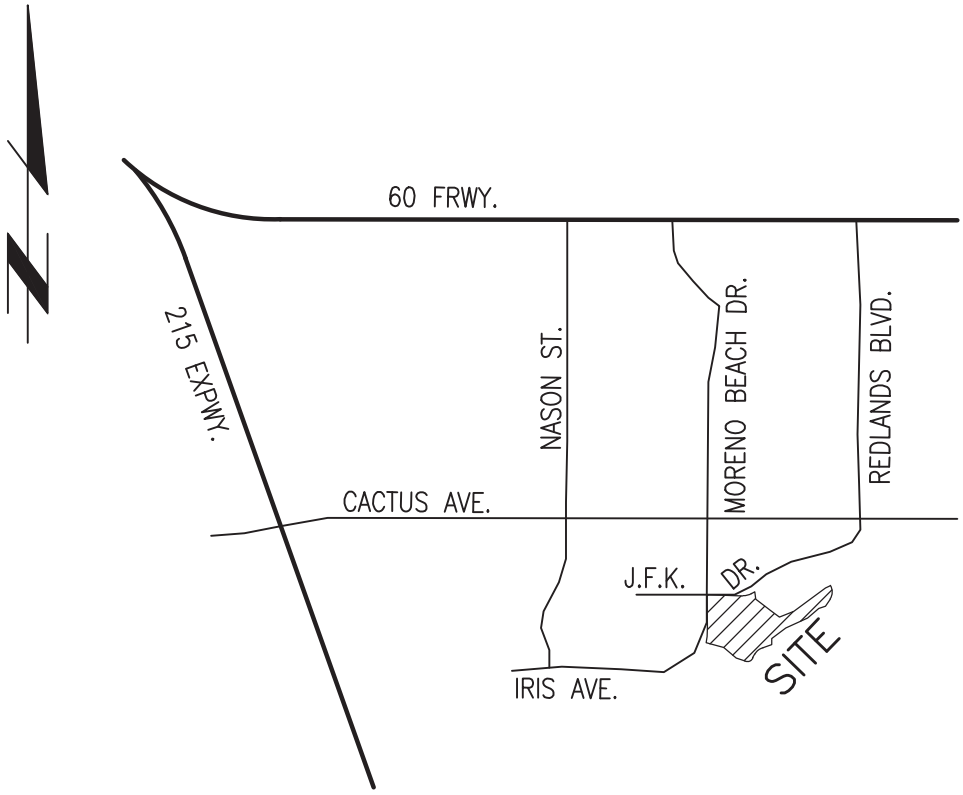
Conclusion

The proposed project does not create any impact to the downstream storm drain system.
The difference in the peak flow rates of storm water runoffs for the post-developed condition and the pre-developed condition for 100-year 1-hour return frequency storm events is 8.7 cfs which is going to be mitigated by the proposed infiltration basin. The volume needed to mitigate 8.7 cfs accumulated during 1 hour event is 31,320 cf (8.7 (cfs) x 60 (s) x 60 (min) = 31,320 cf), which is less than the designed volume of the proposed infiltration basin (31,500 cf without accounting for any infiltration).
(See the Pre- and Post-Development Flow Rates Comparison Table on Page 4)

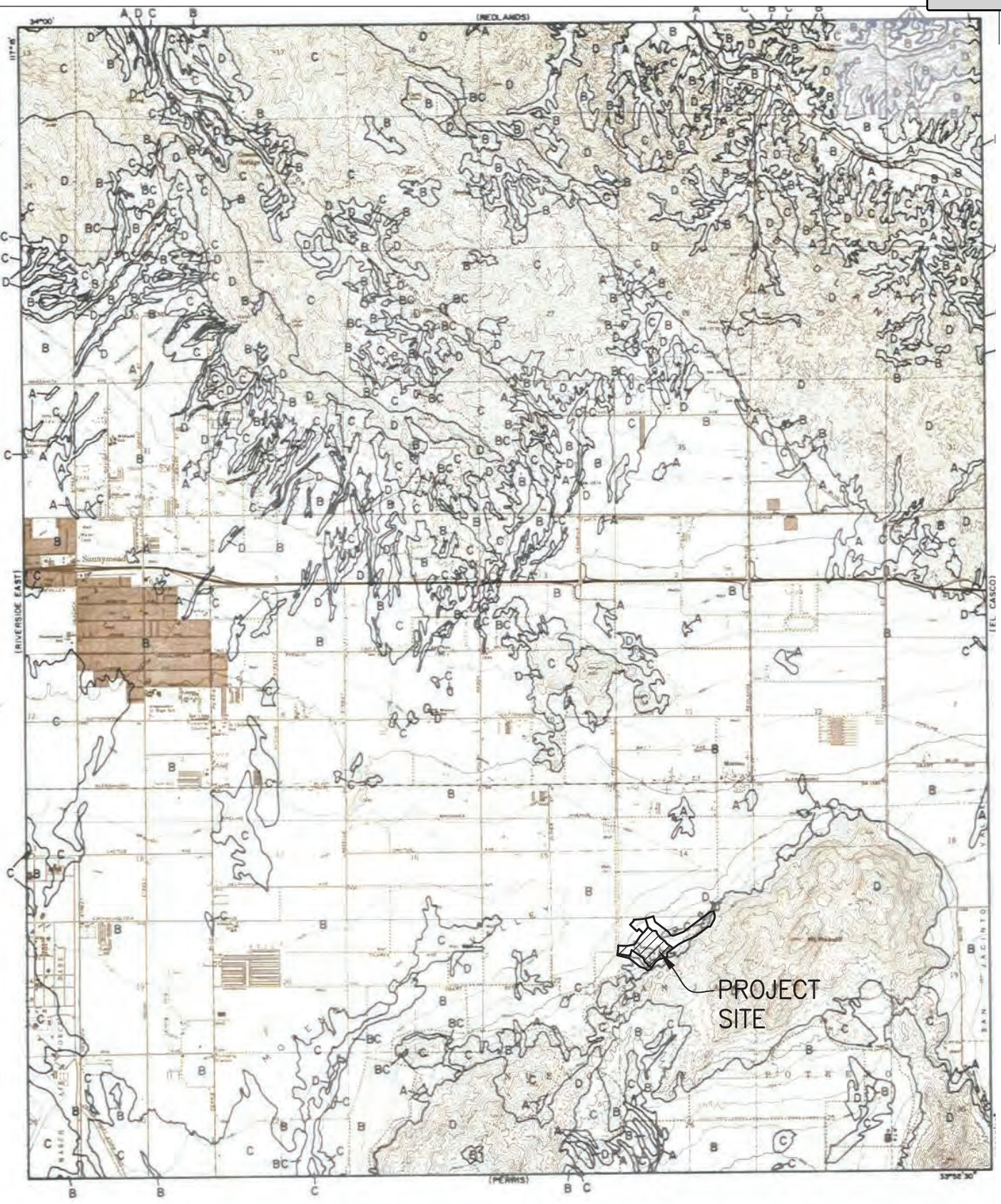
PRE- AND POST-DEVELOPMENT FLOW RATES COMPARISON TABLE
ON-SITE RUNOFF FLOW

TRACT 37189 , CITY OF MORENO VALLEY
T.3S, R.3W, SEC. 23

	AREA (AC)		1 HOUR STORM EVENT				PROJECT IMPACT
	PRE-	POST-	Q10 (CFS)		Q100 (CFS)		
			PRE-	POST-	PRE-	POST-	
AREA "A"	26.35	26.58	25.3	32.4	40.3	49.0	Increased stormwater runoff during 100 y-1 h storm event will not creat any impact downstream, because it will be mitigated by the proposed water quality infiltration basin.



LOCATION MAP
NTS



LEGEND

SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

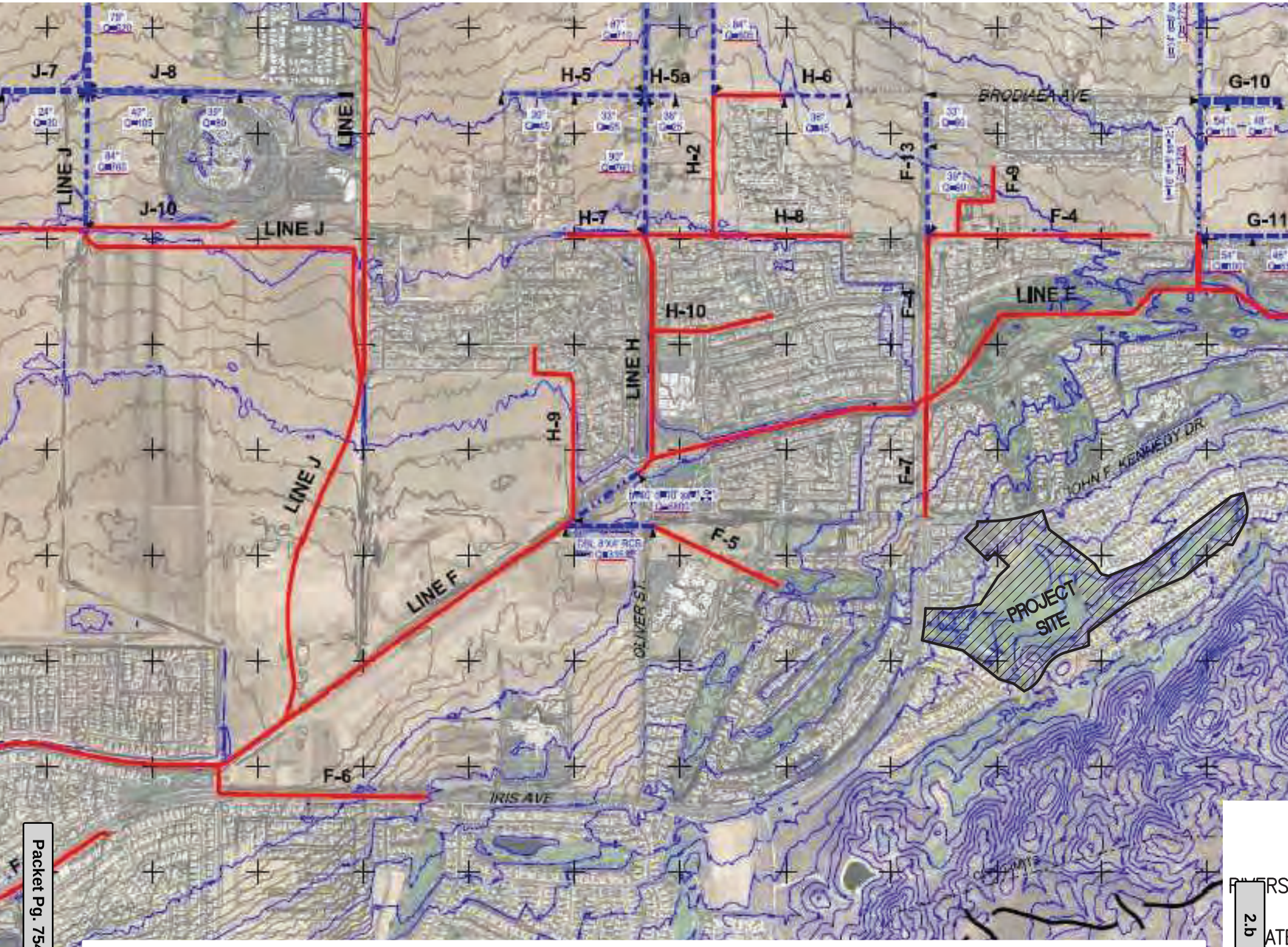
HYDROLOGY MANUAL

N

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR SUNNYMEAD

PLATE C-I.17


J-7
J-8
H-5
H-5a
H-6
BRODIAEA AVE
G-10
LINE J
LINE I
H-2
F-13
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J-10
LINE J
H-7
H-8
F-4
G-11
LINE E
H-10
LINE H
F-1
H-9
LINE J
F-7
JOHN F. KENNEDY DR.
F-5
PROJECT SITE
LINE F
OLIVER ST.
F-6
IRIS AVE

RAINFALL INTENSITY—INCHES PER HOUR

SUNNYMEAD – MORENO			WOODCREST		
DURATION MINUTES	FREQUENCY 10 YEAR	FREQUENCY 100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	FREQUENCY 100 YEAR
5	2.84	4.16	5	3.37	5.30
6	2.59	3.79	6	3.05	4.79
7	2.40	3.51	7	2.80	4.40
8	2.25	3.29	8	2.60	4.09
9	2.12	3.10	9	2.44	3.83
10	2.01	2.94	10	2.30	3.62
11	1.92	2.80	11	2.19	3.43
12	1.83	2.68	12	2.08	3.27
13	1.76	2.58	13	1.99	3.13
14	1.70	2.48	14	1.91	3.01
15	1.64	2.40	15	1.84	2.89
16	1.59	2.32	16	1.78	2.79
17	1.54	2.25	17	1.72	2.70
18	1.50	2.19	18	1.67	2.62
19	1.46	2.13	19	1.62	2.54
20	1.42	2.08	20	1.57	2.47
22	1.35	1.98	22	1.49	2.34
24	1.30	1.90	24	1.42	2.23
26	1.25	1.82	26	1.36	2.14
28	1.20	1.76	28	1.31	2.05
30	1.16	1.70	30	1.26	1.98
32	1.12	1.64	32	1.22	1.91
34	1.09	1.59	34	1.19	1.85
36	1.06	1.55	36	1.14	1.79
38	1.03	1.51	38	1.11	1.74
40	1.00	1.47	40	1.07	1.69
45	.95	1.39	45	1.01	1.58
50	.90	1.31	50	.95	1.49
55	.86	1.25	55	.90	1.42
60	.82	1.20	60	.86	1.35
65	.79	1.15	65	.82	1.29
70	.76	1.11	70	.79	1.24
75	.73	1.07	75	.76	1.19
80	.71	1.04	80	.73	1.15
85	.69	1.01	85	.71	1.11
SLOPE = .500			SLOPE = .550		

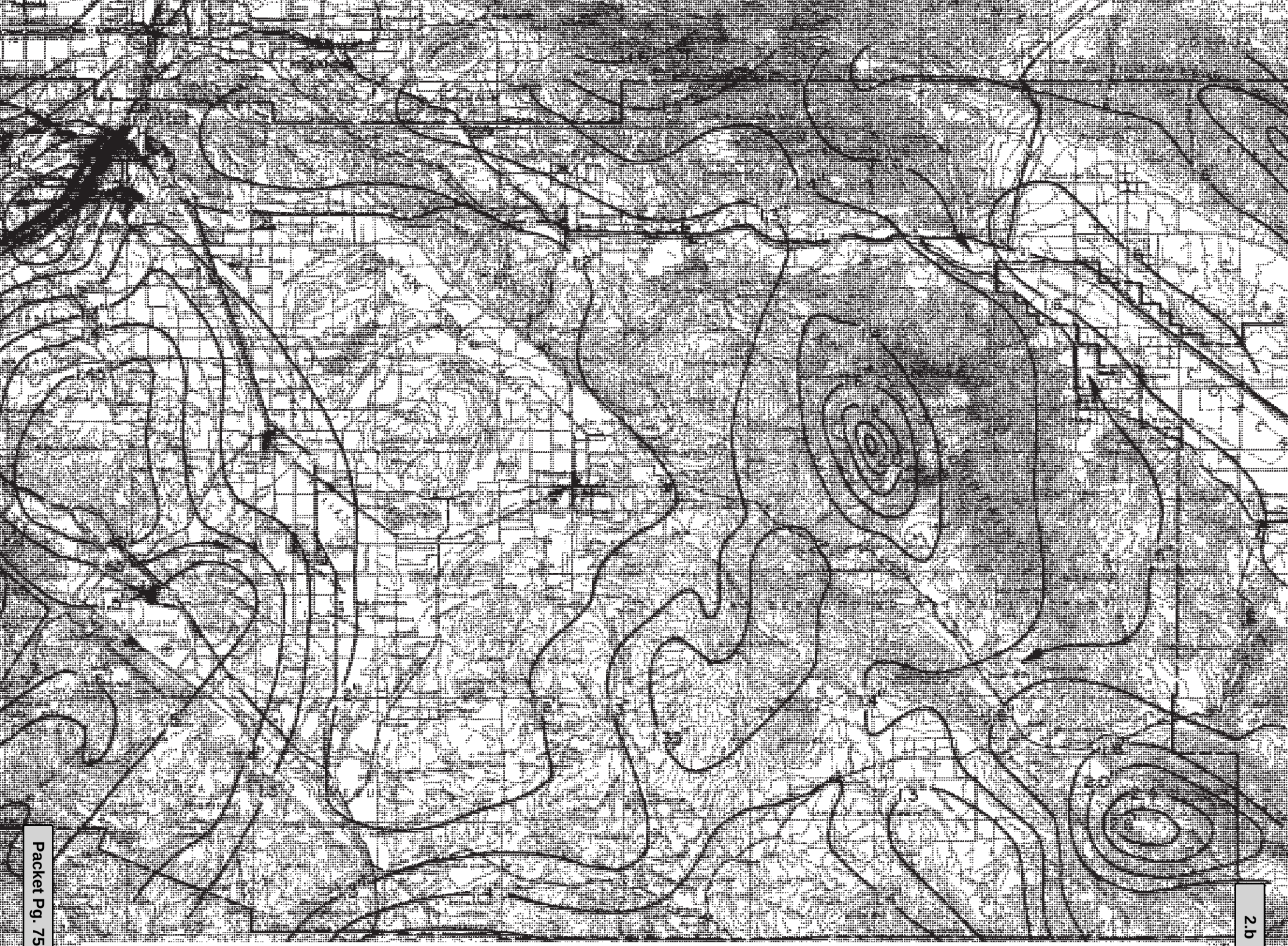
RCFC & WCD

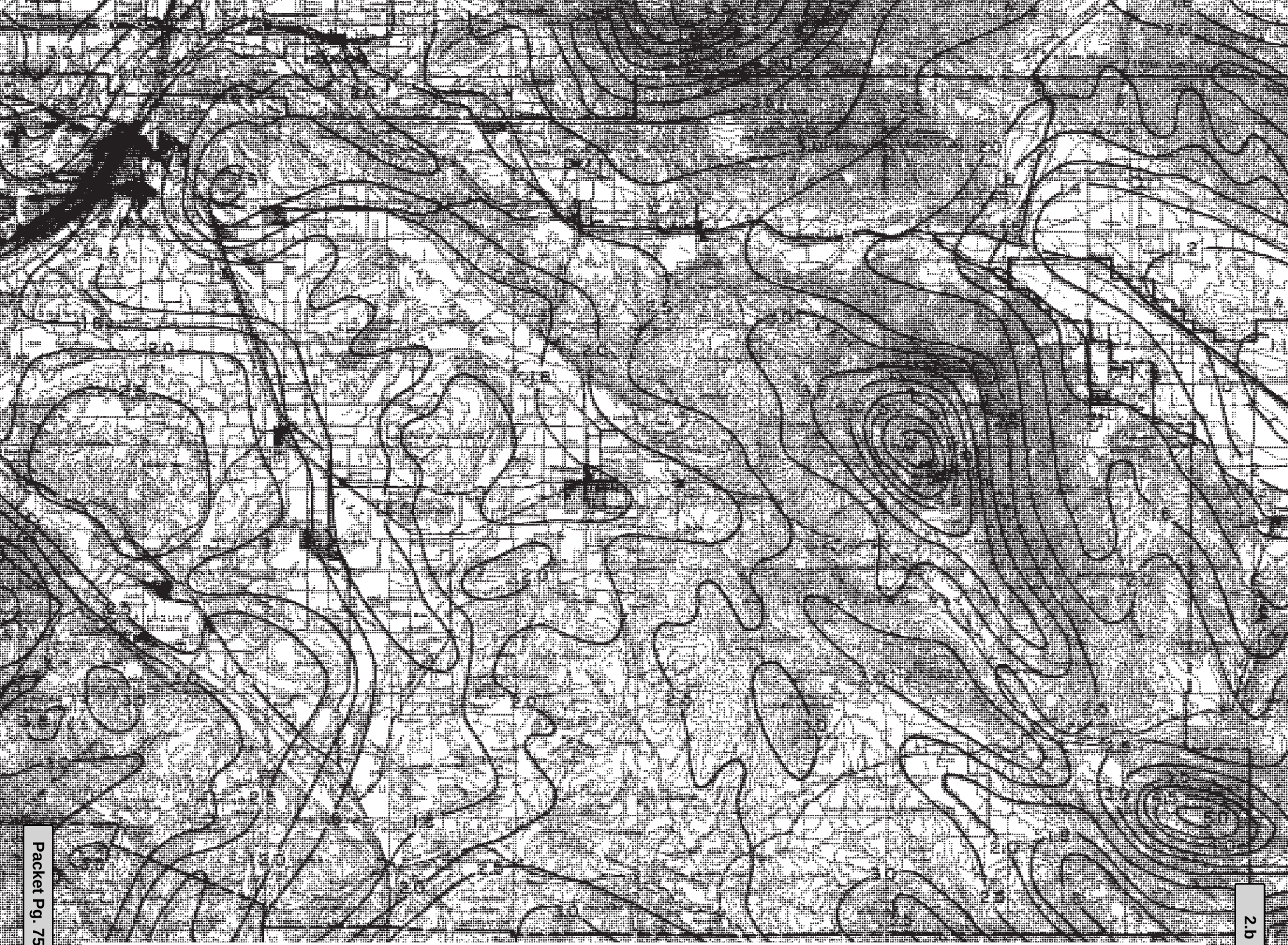
HYDROLOGY MANUAL

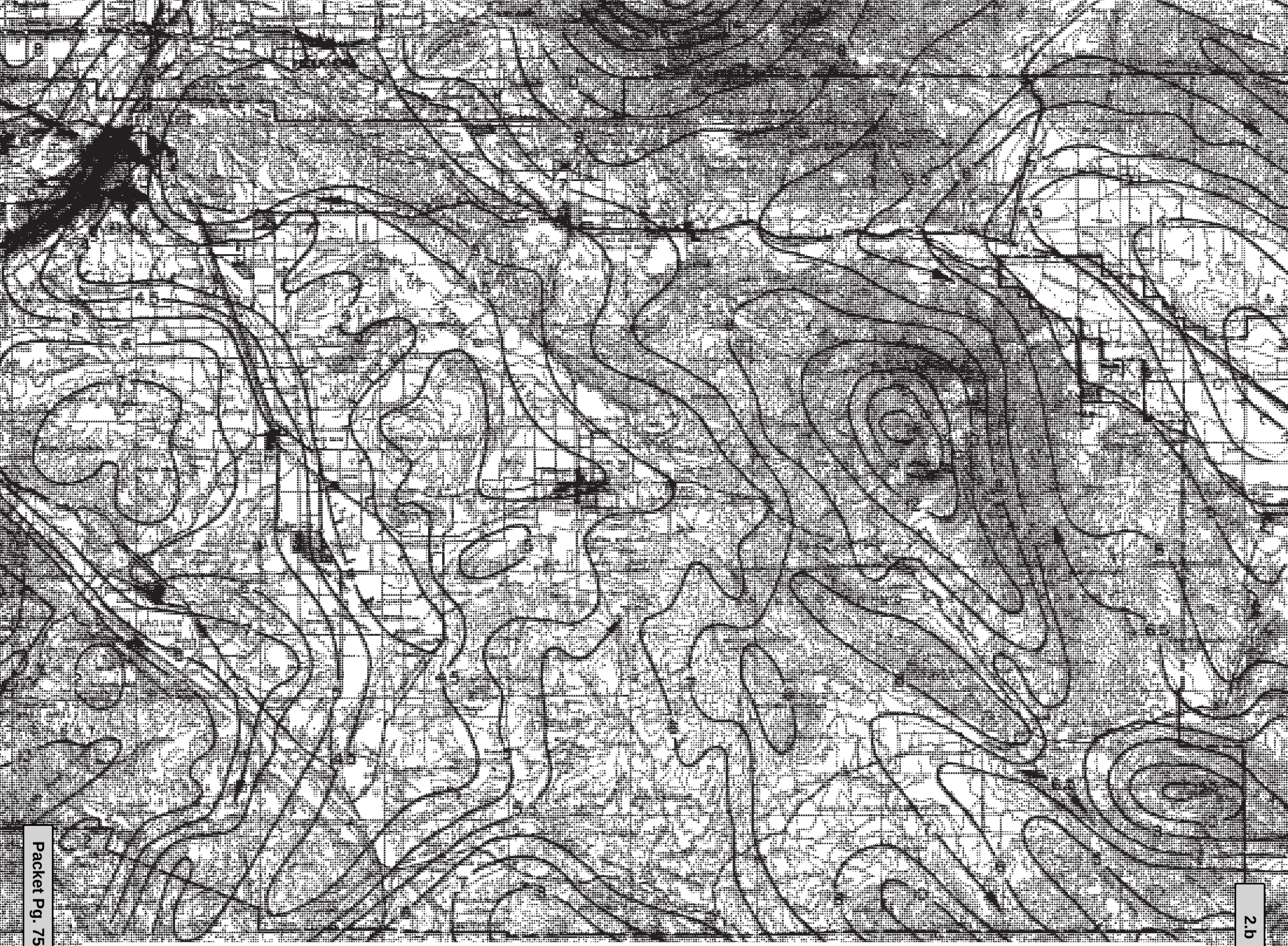
STANDARD
INTENSITY – DURATION
CURVES DATA

PLATE D-4.1 (6 of 6)

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)







APPENDIX A

HYDROLOGY RATIONAL STUDIES

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
       Rational Hydrology Study        Date: 07/19/17  File:856pre10.out
------------------------------------------------------------------------
MORENO VALLEY RANCH APARTMENTS
PRE-DEVELOPED
10 YEAR - 1 HOUR
(Job 856)
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6311

------------------------------------------------------------------------
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 [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity =  2.010(In/Hr)
10 year storm 60 minute intensity =  0.820(In/Hr)
100 year storm 10 minute intensity =  2.940(In/Hr)
100 year storm 60 minute intensity =  1.200(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.820(In/Hr)
Slope of intensity duration curve = 0.5000



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   755.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    83.500(Ft.)
Slope =    0.11060  s(percent)=      11.06
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.620 min.
Rainfall intensity =      1.607(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.737
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  79.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      5.629(CFS)
Total initial stream area =        4.750(Ac.)
Pervious area fraction = 1.000
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      4.750(Ac.)
Runoff from this stream =      5.629(CFS)
Time of concentration =   15.62 min.
Rainfall intensity =     1.607(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1667.000(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    65.500(Ft.)
Slope =    0.06550  s(percent)=       6.55
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.409 min.
Rainfall intensity =      1.442(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.679
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  74.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.819(CFS)
Total initial stream area =       3.900(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.900(Ac.)
Runoff from this stream =      3.819(CFS)
Time of concentration =   19.41 min.
Rainfall intensity =     1.442(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   890.000(Ft.)
Top (of initial area) elevation =  1651.500(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    50.000(Ft.)
Slope =    0.05618  s(percent)=       5.62
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.103 min.
Rainfall intensity =      1.453(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.637
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
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Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      6.622(CFS)
Total initial stream area =        7.150(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      7.150(Ac.)
Runoff from this stream =      6.622(CFS)
Time of concentration =   19.10 min.
Rainfall intensity =     1.453(In/Hr)
Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1         5.629     15.62                 1.607
2         3.819     19.41                 1.442
3         6.622     19.10                 1.453
Largest stream flow has longer or shorter time of concentration
Qp =      6.622 + sum of
          Qb         Ia/Ib
           5.629 *    0.904 =      5.090
          Qa          Tb/Ta
           3.819 *    0.984 =      3.759
Qp =     15.471

Total of 3 streams to confluence:
Flow rates before confluence point:
       5.629       3.819       6.622
Area of streams before confluence:
        4.750        3.900        7.150
Results of confluence:
Total flow rate =     15.471(CFS)
Time of concentration =    19.103 min.
Effective stream area after confluence =     15.800(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       17.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1601.500(Ft.)
End of natural channel elevation =   1595.000(Ft.)
Length of natural channel  =   415.000(Ft.)
Estimated mean flow rate at midpoint of channel =     16.578(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   3.57(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0157
```

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Corrected/adjusted channel slope =  0.0157
Travel time =    1.94 min.     TC =   21.04  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.672
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  74.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.385(In/Hr) for a    10.0 year storm
Subarea runoff =      2.104(CFS) for      2.260(Ac.)
Total runoff =     17.576(CFS)   Total area =      18.060(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       17.000 to Point/Station       17.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.060(Ac.)
Runoff from this stream =     17.576(CFS)
Time of concentration =   21.04 min.
Rainfall intensity =     1.385(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       14.000 to Point/Station       17.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   980.000(Ft.)
Top (of initial area) elevation =  1681.000(Ft.)
Bottom (of initial area) elevation =  1595.000(Ft.)
Difference in elevation =    86.000(Ft.)
Slope =    0.08776  s(percent)=       8.78
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.159 min.
Rainfall intensity =      1.491(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.642
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.234(CFS)
Total initial stream area =       3.380(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       17.000 to Point/Station       17.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.380(Ac.)
Runoff from this stream =      3.234(CFS)
Time of concentration =   18.16 min.
Rainfall intensity =     1.491(In/Hr)
```

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Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1        17.576     21.04                 1.385
2         3.234     18.16                 1.491
Largest stream flow has longer time of concentration
Qp =     17.576 + sum of
         Qb          Ia/Ib
          3.234 *    0.929 =      3.005
Qp =     20.580

Total of 2 streams to confluence:
Flow rates before confluence point:
      17.576       3.234
Area of streams before confluence:
       18.060        3.380
Results of confluence:
Total flow rate =     20.580(CFS)
Time of concentration =    21.042 min.
Effective stream area after confluence =     21.440(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     21.440(Ac.)
Runoff from this stream =     20.580(CFS)
Time of concentration =   21.04 min.
Rainfall intensity =     1.385(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       16.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   750.000(Ft.)
Top (of initial area) elevation =  1673.000(Ft.)
Bottom (of initial area) elevation =  1603.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.09333  s(percent)=       9.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.117 min.
Rainfall intensity =      1.582(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.719
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.800
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  77.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      2.582(CFS)
Total initial stream area =        2.270(Ac.)
Pervious area fraction = 1.000
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Process from Point/Station       16.000 to Point/Station       20.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
Top of natural channel elevation =   1603.000(Ft.)
End of natural channel elevation =   1577.000(Ft.)
Length of natural channel  =   485.000(Ft.)
Estimated mean flow rate at midpoint of channel =      3.748(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.57(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0536
Corrected/adjusted channel slope =  0.0536
Travel time =    1.77 min.     TC =   17.89  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.643
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.502(In/Hr) for a    10.0 year storm
Subarea runoff =      1.981(CFS) for      2.050(Ac.)
Total runoff =      4.563(CFS)   Total area =       4.320(Ac.)


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Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.320(Ac.)
Runoff from this stream =      4.563(CFS)
Time of concentration =   17.89 min.
Rainfall intensity =     1.502(In/Hr)


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Process from Point/Station       18.000 to Point/Station       20.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   250.000(Ft.)
Top (of initial area) elevation =  1593.000(Ft.)
Bottom (of initial area) elevation =  1577.000(Ft.)
Difference in elevation =    16.000(Ft.)
Slope =    0.06400  s(percent)=       6.40
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.199 min.
Rainfall intensity =      1.898(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.684
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
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Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      0.766(CFS)
Total initial stream area =        0.590(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.590(Ac.)
Runoff from this stream =      0.766(CFS)
Time of concentration =   11.20 min.
Rainfall intensity =     1.898(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       20.580     21.04                 1.385
2        4.563     17.89                 1.502
3        0.766     11.20                 1.898
Largest stream flow has longer time of concentration
Qp =     20.580 + sum of
         Qb         Ia/Ib
          4.563 *    0.922 =      4.207
         Qb         Ia/Ib
          0.766 *    0.730 =      0.559
Qp =     25.346

Total of 3 streams to confluence:
Flow rates before confluence point:
      20.580       4.563       0.766
Area of streams before confluence:
       21.440        4.320        0.590
Results of confluence:
Total flow rate =     25.346(CFS)
Time of concentration =    21.042 min.
Effective stream area after confluence =     26.350(Ac.)
End of computations, total study area =           26.35 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  72.7
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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
       Rational Hydrology Study        Date: 07/19/17  File:856pre100.out
------------------------------------------------------------------------
MORENO VALLEY RANCH APARTMENTS
PRE-DEVELOPED
100 YEAR - 1 HOUR
(Job 856)
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6311

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity =  2.010(In/Hr)
10 year storm 60 minute intensity =  0.820(In/Hr)
100 year storm 10 minute intensity =  2.940(In/Hr)
100 year storm 60 minute intensity =  1.200(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.5000



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       10.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   755.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    83.500(Ft.)
Slope =    0.11060  s(percent)=      11.06
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   15.620 min.
Rainfall intensity =      2.352(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.782
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  79.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      8.737(CFS)
Total initial stream area =        4.750(Ac.)
Pervious area fraction = 1.000
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      4.750(Ac.)
Runoff from this stream =      8.737(CFS)
Time of concentration =   15.62 min.
Rainfall intensity =     2.352(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       11.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1667.000(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    65.500(Ft.)
Slope =    0.06550  s(percent)=       6.55
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.409 min.
Rainfall intensity =      2.110(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.736
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  74.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      6.060(CFS)
Total initial stream area =       3.900(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.900(Ac.)
Runoff from this stream =      6.060(CFS)
Time of concentration =   19.41 min.
Rainfall intensity =     2.110(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       12.000 to Point/Station       13.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   890.000(Ft.)
Top (of initial area) elevation =  1651.500(Ft.)
Bottom (of initial area) elevation =  1601.500(Ft.)
Difference in elevation =    50.000(Ft.)
Slope =    0.05618  s(percent)=       5.62
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.103 min.
Rainfall intensity =      2.127(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.702
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
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Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.678(CFS)
Total initial stream area =        7.150(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       13.000 to Point/Station       13.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      7.150(Ac.)
Runoff from this stream =     10.678(CFS)
Time of concentration =   19.10 min.
Rainfall intensity =     2.127(In/Hr)
Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                 (In/Hr)


1         8.737     15.62                2.352
2         6.060     19.41                2.110
3        10.678     19.10                2.127
Largest stream flow has longer or shorter time of concentration
Qp =     10.678 + sum of
          Qb          Ia/Ib
           8.737 *    0.904 =      7.901
          Qa          Tb/Ta
           6.060 *    0.984 =      5.964
Qp =     24.543

Total of 3 streams to confluence:
Flow rates before confluence point:
       8.737       6.060      10.678
Area of streams before confluence:
        4.750        3.900        7.150
Results of confluence:
Total flow rate =     24.543(CFS)
Time of concentration =    19.103 min.
Effective stream area after confluence =     15.800(Ac.)


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Process from Point/Station       13.000 to Point/Station       17.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
______________________________________________________________________________
Top of natural channel elevation =   1601.500(Ft.)
End of natural channel elevation =   1595.000(Ft.)
Length of natural channel  =   415.000(Ft.)
Estimated mean flow rate at midpoint of channel =     26.298(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.04(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0157
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Corrected/adjusted channel slope =  0.0157
Travel time =    1.71 min.     TC =   20.81  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.732
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  74.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.037(In/Hr) for a   100.0 year storm
Subarea runoff =      3.369(CFS) for      2.260(Ac.)
Total runoff =     27.912(CFS)   Total area =      18.060(Ac.)


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Process from Point/Station       17.000 to Point/Station       17.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.060(Ac.)
Runoff from this stream =     27.912(CFS)
Time of concentration =   20.81 min.
Rainfall intensity =     2.037(In/Hr)


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Process from Point/Station       14.000 to Point/Station       17.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   980.000(Ft.)
Top (of initial area) elevation =  1681.000(Ft.)
Bottom (of initial area) elevation =  1595.000(Ft.)
Difference in elevation =    86.000(Ft.)
Slope =    0.08776  s(percent)=       8.78
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.159 min.
Rainfall intensity =      2.181(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.706
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      5.206(CFS)
Total initial stream area =       3.380(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       17.000 to Point/Station       17.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.380(Ac.)
Runoff from this stream =      5.206(CFS)
Time of concentration =   18.16 min.
Rainfall intensity =     2.181(In/Hr)
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Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1        27.912     20.81                 2.037
2         5.206     18.16                 2.181
Largest stream flow has longer time of concentration
Qp =     27.912 + sum of
         Qb          Ia/Ib
          5.206 *    0.934 =      4.862
Qp =     32.775

Total of 2 streams to confluence:
Flow rates before confluence point:
      27.912       5.206
Area of streams before confluence:
       18.060        3.380
Results of confluence:
Total flow rate =     32.775(CFS)
Time of concentration =    20.815 min.
Effective stream area after confluence =     21.440(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     21.440(Ac.)
Runoff from this stream =     32.775(CFS)
Time of concentration =   20.81 min.
Rainfall intensity =     2.037(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       15.000 to Point/Station       16.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   750.000(Ft.)
Top (of initial area) elevation =  1673.000(Ft.)
Bottom (of initial area) elevation =  1603.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.09333  s(percent)=       9.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.117 min.
Rainfall intensity =      2.315(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.768
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.200
Decimal fraction soil group C = 0.800
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  77.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.036(CFS)
Total initial stream area =        2.270(Ac.)
Pervious area fraction = 1.000
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       16.000 to Point/Station       20.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------------
Top of natural channel elevation =   1603.000(Ft.)
End of natural channel elevation =   1577.000(Ft.)
Length of natural channel  =   485.000(Ft.)
Estimated mean flow rate at midpoint of channel =      5.858(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   5.07(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0536
Corrected/adjusted channel slope =  0.0536
Travel time =    1.59 min.     TC =   17.71  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.708
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.209(In/Hr) for a   100.0 year storm
Subarea runoff =      3.206(CFS) for      2.050(Ac.)
Total runoff =      7.242(CFS)   Total area =       4.320(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.320(Ac.)
Runoff from this stream =      7.242(CFS)
Time of concentration =   17.71 min.
Rainfall intensity =     2.209(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       18.000 to Point/Station       20.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   250.000(Ft.)
Top (of initial area) elevation =  1593.000(Ft.)
Bottom (of initial area) elevation =  1577.000(Ft.)
Difference in elevation =    16.000(Ft.)
Slope =    0.06400  s(percent)=       6.40
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.199 min.
Rainfall intensity =      2.778(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.740
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
```

```
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      1.213(CFS)
Total initial stream area =        0.590(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       20.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.590(Ac.)
Runoff from this stream =      1.213(CFS)
Time of concentration =   11.20 min.
Rainfall intensity =     2.778(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       32.775     20.81                2.037
2        7.242     17.71                2.209
3        1.213     11.20                2.778
Largest stream flow has longer time of concentration
Qp =     32.775 + sum of
         Qb         Ia/Ib
          7.242 *    0.922 =      6.680
         Qb         Ia/Ib
          1.213 *    0.734 =      0.890
Qp =     40.345

Total of 3 streams to confluence:
Flow rates before confluence point:
      32.775       7.242       1.213
Area of streams before confluence:
       21.440        4.320        0.590
Results of confluence:
Total flow rate =     40.345(CFS)
Time of concentration =    20.815 min.
Effective stream area after confluence =     26.350(Ac.)
End of computations, total study area =           26.35 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number =  72.7
```

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

```
                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
       Rational Hydrology Study        Date: 07/20/17  File:856post10.out
------------------------------------------------------------------------
Moreno Valley Ranch Apartments, MV
Post-developed condition
10 year - 1 hour
(Job 856)
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6311

------------------------------------------------------------------------
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 [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity =  2.010(In/Hr)
10 year storm 60 minute intensity =  0.820(In/Hr)
100 year storm 10 minute intensity =  2.940(In/Hr)
100 year storm 60 minute intensity =  1.200(In/Hr)

Storm event year =  10.0
Calculated rainfall intensity data:
1 hour intensity =  0.820(In/Hr)
Slope of intensity duration curve = 0.5000



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       21.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   670.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1640.000(Ft.)
Difference in elevation =    45.000(Ft.)
Slope =    0.06716  s(percent)=       6.72
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.574 min.
Rainfall intensity =      2.169(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.815
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      5.075(CFS)
Total initial stream area =        2.870(Ac.)
Pervious area fraction = 0.350
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       21.000 to Point/Station       23.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1635.000(Ft.)
Downstream point/station elevation =  1611.000(Ft.)
Pipe length  =   365.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     5.075(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     5.075(CFS)
Normal flow depth in pipe =    6.39(In.)
Flow top width inside pipe =   11.98(In.)
Critical Depth =   11.05(In.)
Pipe flow velocity =     11.94(Ft/s)
Travel time through pipe =    0.51 min.
Time of concentration (TC) =     9.08 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      2.870(Ac.)
Runoff from this stream =      5.075(CFS)
Time of concentration =    9.08 min.
Rainfall intensity =     2.107(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       22.000 to Point/Station       23.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   450.000(Ft.)
Top (of initial area) elevation =  1636.000(Ft.)
Bottom (of initial area) elevation =  1616.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.04444  s(percent)=       4.44
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.942 min.
Rainfall intensity =      2.254(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.800
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      3.534(CFS)
Total initial stream area =        1.960(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.960(Ac.)
Runoff from this stream =      3.534(CFS)
Time of concentration =    7.94 min.
Rainfall intensity =     2.254(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       23.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   370.000(Ft.)
Top (of initial area) elevation =  1619.000(Ft.)
Bottom (of initial area) elevation =  1616.000(Ft.)
Difference in elevation =     3.000(Ft.)
Slope =    0.00811  s(percent)=       0.81
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.320 min.
Rainfall intensity =      1.977(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.791
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.360(CFS)
Total initial stream area =        0.870(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.870(Ac.)
Runoff from this stream =      1.360(CFS)
Time of concentration =   10.32 min.
Rainfall intensity =     1.977(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        5.075      9.08                2.107
2        3.534      7.94                2.254
3        1.360     10.32                1.977
Largest stream flow has longer or shorter time of concentration
Qp =      5.075 + sum of
         Qb          Ia/Ib
          3.534 *    0.935 =      3.305
         Qa          Tb/Ta
          1.360 *    0.880 =      1.197
Qp =      9.577

Total of 3 streams to confluence:
Flow rates before confluence point:
       5.075       3.534       1.360
Area of streams before confluence:
        2.870        1.960        0.870
Results of confluence:
Total flow rate =      9.577(CFS)
Time of concentration =     9.084 min.
Effective stream area after confluence =      5.700(Ac.)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       32.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1611.000(Ft.)
Downstream point/station elevation =  1597.000(Ft.)
Pipe length  =   920.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.577(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     9.577(CFS)
Normal flow depth in pipe =   11.51(In.)
Flow top width inside pipe =   17.29(In.)
Critical Depth =   14.33(In.)
Pipe flow velocity =      8.02(Ft/s)
Travel time through pipe =    1.91 min.
Time of concentration (TC) =    11.00 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.700(Ac.)
Runoff from this stream =      9.577(CFS)
Time of concentration =   11.00 min.
Rainfall intensity =     1.916(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       32.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   920.000(Ft.)
Top (of initial area) elevation =  1616.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =    14.000(Ft.)
Slope =    0.01522  s(percent)=       1.52
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.099 min.
Rainfall intensity =      1.755(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.782
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      5.725(CFS)
Total initial stream area =        4.170(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.170(Ac.)
Runoff from this stream =      5.725(CFS)
Time of concentration =   13.10 min.
Rainfall intensity =     1.755(In/Hr)
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Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1         9.577     11.00                 1.916
2         5.725     13.10                 1.755
Largest stream flow has longer or shorter time of concentration
Qp =      9.577 + sum of
          Qa          Tb/Ta
           5.725 *    0.839 =      4.805
Qp =     14.382

Total of 2 streams to confluence:
Flow rates before confluence point:
       9.577       5.725
Area of streams before confluence:
        5.700        4.170
Results of confluence:
Total flow rate =     14.382(CFS)
Time of concentration =    10.995 min.
Effective stream area after confluence =      9.870(Ac.)


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      9.870(Ac.)
Runoff from this stream =     14.382(CFS)
Time of concentration =   11.00 min.
Rainfall intensity =     1.916(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       20.000 to Point/Station       27.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   630.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1627.000(Ft.)
Difference in elevation =    58.000(Ft.)
Slope =    0.09206  s(percent)=       9.21
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.855 min.
Rainfall intensity =      2.266(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.834
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      5.350(CFS)
Total initial stream area =        2.830(Ac.)
Pervious area fraction = 0.350
```

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Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      2.830(Ac.)
Runoff from this stream =      5.350(CFS)
Time of concentration =    7.85 min.
Rainfall intensity =     2.266(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       22.000 to Point/Station       26.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   135.000(Ft.)
Top (of initial area) elevation =  1636.000(Ft.)
Bottom (of initial area) elevation =  1635.000(Ft.)
Difference in elevation =     1.000(Ft.)
Slope =    0.00741  s(percent)=       0.74
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.021 min.
Rainfall intensity =      2.397(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.834
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.100
Decimal fraction soil group C = 0.900
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.599(CFS)
Total initial stream area =       0.800(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       26.000 to Point/Station       29.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1630.000(Ft.)
Downstream point/station elevation =  1614.000(Ft.)
Pipe length  =   450.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.599(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     1.599(CFS)
Normal flow depth in pipe =    4.56(In.)
Flow top width inside pipe =    9.00(In.)
Critical Depth =    6.98(In.)
Pipe flow velocity =      7.10(Ft/s)
Travel time through pipe =    1.06 min.
Time of concentration (TC) =     8.08 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      0.800(Ac.)
Runoff from this stream =      1.599(CFS)
Time of concentration =    8.08 min.
Rainfall intensity =     2.235(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       28.000 to Point/Station       29.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   420.000(Ft.)
Top (of initial area) elevation =  1624.500(Ft.)
Bottom (of initial area) elevation =  1619.000(Ft.)
Difference in elevation =     5.500(Ft.)
Slope =    0.01310  s(percent)=       1.31
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.865 min.
Rainfall intensity =      2.022(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.811
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      3.656(CFS)
Total initial stream area =        2.230(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 3
Stream flow area =      2.230(Ac.)
Runoff from this stream =      3.656(CFS)
Time of concentration =    9.86 min.
Rainfall intensity =     2.022(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        5.350      7.85                2.266
2        1.599      8.08                2.235
3        3.656      9.86                2.022
Largest stream flow has longer or shorter time of concentration
Qp =      5.350 + sum of
         Qa          Tb/Ta
          1.599 *    0.972 =      1.555
         Qa          Tb/Ta
          3.656 *    0.796 =      2.911
Qp =      9.816

Total of 3 streams to confluence:
Flow rates before confluence point:
       5.350       1.599       3.656
Area of streams before confluence:
        2.830        0.800        2.230
Results of confluence:
Total flow rate =      9.816(CFS)
Time of concentration =     7.855 min.
Effective stream area after confluence =      5.860(Ac.)
```

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Process from Point/Station       29.000 to Point/Station       31.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1614.000(Ft.)
Downstream point/station elevation =  1612.500(Ft.)
Pipe length  =    90.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     9.816(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     9.816(CFS)
Normal flow depth in pipe =   11.34(In.)
Flow top width inside pipe =   17.38(In.)
Critical Depth =   14.50(In.)
Pipe flow velocity =      8.36(Ft/s)
Travel time through pipe =    0.18 min.
Time of concentration (TC) =     8.03 min.


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Process from Point/Station       31.000 to Point/Station       31.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      5.860(Ac.)
Runoff from this stream =      9.816(CFS)
Time of concentration =    8.03 min.
Rainfall intensity =     2.241(In/Hr)


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Process from Point/Station       24.000 to Point/Station       30.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   225.000(Ft.)
Top (of initial area) elevation =  1619.000(Ft.)
Bottom (of initial area) elevation =  1617.500(Ft.)
Difference in elevation =     1.500(Ft.)
Slope =    0.00667  s(percent)=       0.67
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.796 min.
Rainfall intensity =      2.142(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.797
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      0.853(CFS)
Total initial stream area =        0.500(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       31.000 to Point/Station       31.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      0.500(Ac.)
Runoff from this stream =      0.853(CFS)
Time of concentration =    8.80 min.
Rainfall intensity =     2.142(In/Hr)
```

```
Summary of stream data:

Stream    Flow rate       TC             Rainfall Intensity
 No.        (CFS)        (min)                  (In/Hr)


1         9.816       8.03                  2.241
2         0.853       8.80                  2.142
Largest stream flow has longer or shorter time of concentration
Qp =       9.816 + sum of
          Qa           Tb/Ta
           0.853 *     0.913 =       0.779
Qp =      10.595

Total of 2 streams to confluence:
Flow rates before confluence point:
       9.816       0.853
Area of streams before confluence:
        5.860        0.500
Results of confluence:
Total flow rate =      10.595(CFS)
Time of concentration =      8.034 min.
Effective stream area after confluence =       6.360(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       31.000 to Point/Station       32.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1612.500(Ft.)
Downstream point/station elevation =  1597.000(Ft.)
Pipe length  =   150.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.595(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    10.595(CFS)
Normal flow depth in pipe =    9.12(In.)
Flow top width inside pipe =   10.25(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.56(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =     8.18 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      6.360(Ac.)
Runoff from this stream =     10.595(CFS)
Time of concentration =    8.18 min.
Rainfall intensity =     2.220(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       34.000 to Point/Station       32.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   435.000(Ft.)
Top (of initial area) elevation =  1644.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =    42.000(Ft.)
Slope =    0.09655  s(percent)=       9.66
```

```
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.709 min.
Rainfall intensity =      2.452(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.838
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      2.158(CFS)
Total initial stream area =        1.050(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      1.050(Ac.)
Runoff from this stream =      2.158(CFS)
Time of concentration =    6.71 min.
Rainfall intensity =     2.452(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       10.595      8.18                 2.220
2        2.158      6.71                 2.452
Largest stream flow has longer time of concentration
Qp =     10.595 + sum of
         Qb         Ia/Ib
          2.158 *    0.905 =      1.954
Qp =     12.549

Total of 2 streams to confluence:
Flow rates before confluence point:
      10.595       2.158
Area of streams before confluence:
        6.360        1.050
Results of confluence:
Total flow rate =     12.549(CFS)
Time of concentration =     8.185 min.
Effective stream area after confluence =      7.410(Ac.)


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      7.410(Ac.)
Runoff from this stream =     12.549(CFS)
Time of concentration =    8.18 min.
Rainfall intensity =     2.220(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
```

```
 No.       (CFS)       (min)                (In/Hr)


1       14.382     11.00            1.916
2       12.549      8.18            2.220
Largest stream flow has longer time of concentration
Qp =     14.382 + sum of
         Qb         Ia/Ib
         12.549 *    0.863 =     10.827
Qp =     25.209

Total of 2 main streams to confluence:
Flow rates before confluence point:
      14.382      12.549
Area of streams before confluence:
        9.870        7.410


Results of confluence:
Total flow rate =     25.209(CFS)
Time of concentration =    10.995 min.
Effective stream area after confluence  =     17.280(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       32.000 to Point/Station       42.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1597.000(Ft.)
Downstream point/station elevation =  1595.000(Ft.)
Pipe length  =    50.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    25.209(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    25.209(CFS)
Normal flow depth in pipe =   14.16(In.)
Flow top width inside pipe =   19.69(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.62(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    11.05 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       42.000 to Point/Station       42.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     17.280(Ac.)
Runoff from this stream =     25.209(CFS)
Time of concentration =   11.05 min.
Rainfall intensity =     1.911(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       25.000 to Point/Station       33.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   650.000(Ft.)
Top (of initial area) elevation =  1607.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =     5.000(Ft.)
Slope =    0.00769  s(percent)=       0.77
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
```

```
Initial area time of concentration =   13.066 min.
Rainfall intensity =      1.757(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.782
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.375(CFS)
Total initial stream area =        1.000(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       42.000 to Point/Station       42.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =      1.375(CFS)
Time of concentration =   13.07 min.
Rainfall intensity =     1.757(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       25.209     11.05                 1.911
2        1.375     13.07                 1.757
Largest stream flow has longer or shorter time of concentration
Qp =     25.209 + sum of
         Qa          Tb/Ta
          1.375 *    0.846 =      1.163
Qp =     26.372

Total of 2 streams to confluence:
Flow rates before confluence point:
      25.209       1.375
Area of streams before confluence:
       17.280        1.000
Results of confluence:
Total flow rate =     26.372(CFS)
Time of concentration =    11.052 min.
Effective stream area after confluence =     18.280(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       42.000 to Point/Station       43.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  1595.000(Ft.)
Downstream point/station elevation =  1584.000(Ft.)
Pipe length  =   340.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    26.372(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    26.372(CFS)
Normal flow depth in pipe =   15.96(In.)
Flow top width inside pipe =   17.94(In.)
Critical depth could not be calculated.
Pipe flow velocity =     13.45(Ft/s)
```

```
Travel time through pipe =    0.42 min.
Time of concentration (TC) =    11.47 min.


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Process from Point/Station       43.000 to Point/Station       43.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.280(Ac.)
Runoff from this stream =     26.372(CFS)
Time of concentration =   11.47 min.
Rainfall intensity =     1.875(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       32.000 to Point/Station       38.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   315.000(Ft.)
Top (of initial area) elevation =  1602.000(Ft.)
Bottom (of initial area) elevation =  1593.500(Ft.)
Difference in elevation =     8.500(Ft.)
Slope =    0.02698  s(percent)=       2.70
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.609 min.
Rainfall intensity =      2.303(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.819
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.150(CFS)
Total initial stream area =        0.610(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       38.000 to Point/Station       43.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1588.000(Ft.)
Downstream point/station elevation =  1584.000(Ft.)
Pipe length  =   160.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.150(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     1.150(CFS)
Normal flow depth in pipe =    4.18(In.)
Flow top width inside pipe =    8.98(In.)
Critical Depth =    5.91(In.)
Pipe flow velocity =      5.73(Ft/s)
Travel time through pipe =    0.47 min.
Time of concentration (TC) =     8.07 min.
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       43.000 to Point/Station       43.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.610(Ac.)
Runoff from this stream =      1.150(CFS)
Time of concentration =    8.07 min.
Rainfall intensity =     2.235(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       26.372     11.47                 1.875
2        1.150      8.07                 2.235
Largest stream flow has longer time of concentration
Qp =     26.372 + sum of
         Qb         Ia/Ib
          1.150 *    0.839 =      0.965
Qp =     27.337

Total of 2 streams to confluence:
Flow rates before confluence point:
      26.372       1.150
Area of streams before confluence:
       18.280        0.610
Results of confluence:
Total flow rate =     27.337(CFS)
Time of concentration =    11.474 min.
Effective stream area after confluence =     18.890(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       43.000 to Point/Station       50.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1584.000(Ft.)
Downstream point/station elevation =  1580.000(Ft.)
Pipe length  =   240.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    27.337(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    27.337(CFS)
Normal flow depth in pipe =   18.42(In.)
Flow top width inside pipe =   20.27(In.)
Critical Depth =   21.77(In.)
Pipe flow velocity =     10.57(Ft/s)
Travel time through pipe =    0.38 min.
Time of concentration (TC) =    11.85 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.890(Ac.)
Runoff from this stream =     27.337(CFS)
Time of concentration =   11.85 min.
Rainfall intensity =     1.845(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       38.000 to Point/Station       39.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   250.000(Ft.)
Top (of initial area) elevation =  1593.500(Ft.)
Bottom (of initial area) elevation =  1590.000(Ft.)
Difference in elevation =     3.500(Ft.)
Slope =    0.01400  s(percent)=       1.40
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.910 min.
Rainfall intensity =      2.258(In/Hr) for a    10.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.800
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      0.669(CFS)
Total initial stream area =        0.370(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.370(Ac.)
Runoff from this stream =      0.669(CFS)
Time of concentration =    7.91 min.
Rainfall intensity =     2.258(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       35.000 to Point/Station       50.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1660.000(Ft.)
Bottom (of initial area) elevation =  1585.000(Ft.)
Difference in elevation =    75.000(Ft.)
Slope =    0.07500  s(percent)=       7.50
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.891 min.
Rainfall intensity =      1.461(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.638
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.480(CFS)
Total initial stream area =        3.730(Ac.)
Pervious area fraction = 1.000
```

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Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      3.730(Ac.)
Runoff from this stream =      3.480(CFS)
Time of concentration =   18.89 min.
Rainfall intensity =     1.461(In/Hr)


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Process from Point/Station       36.000 to Point/Station       37.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   750.000(Ft.)
Top (of initial area) elevation =  1673.000(Ft.)
Bottom (of initial area) elevation =  1603.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.09333  s(percent)=       9.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.117 min.
Rainfall intensity =      1.582(In/Hr) for a    10.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.653
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      2.396(CFS)
Total initial stream area =       2.320(Ac.)
Pervious area fraction = 1.000


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Process from Point/Station       37.000 to Point/Station       50.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
Top of natural channel elevation =   1603.000(Ft.)
End of natural channel elevation =   1585.000(Ft.)
Length of natural channel  =   485.000(Ft.)
Estimated mean flow rate at midpoint of channel =      3.052(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   3.63(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0371
Corrected/adjusted channel slope =  0.0371
Travel time =    2.23 min.     TC =   18.34  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.641
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
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Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      1.483(In/Hr) for a    10.0 year storm
Subarea runoff =      1.207(CFS) for      1.270(Ac.)
Total runoff =      3.604(CFS)   Total area =       3.590(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 4
Stream flow area =      3.590(Ac.)
Runoff from this stream =      3.604(CFS)
Time of concentration =   18.34 min.
Rainfall intensity =     1.483(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       27.337     11.85                 1.845
2        0.669      7.91                 2.258
3        3.480     18.89                 1.461
4        3.604     18.34                 1.483
Largest stream flow has longer or shorter time of concentration
Qp =     27.337 + sum of
         Qb         Ia/Ib
          0.669 *    0.817 =      0.546
         Qa          Tb/Ta
          3.480 *    0.627 =      2.183
         Qa          Tb/Ta
          3.604 *    0.646 =      2.329
Qp =     32.395

Total of 4 streams to confluence:
Flow rates before confluence point:
      27.337       0.669       3.480       3.604
Area of streams before confluence:
       18.890        0.370        3.730        3.590
Results of confluence:
Total flow rate =     32.395(CFS)
Time of concentration =    11.852 min.
Effective stream area after confluence =     26.580(Ac.)
End of computations, total study area =           26.58 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.529
Area averaged RI index number =  63.2
```

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                Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2012 Version 8.0
       Rational Hydrology Study        Date: 07/20/17  File:856post100.out
------------------------------------------------------------------------
Moreno Valley Ranch Apartments, MV
Post-developed condition
100 year - 1 hour
(Job 856)
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

 English (in-lb) Units used in input data file

------------------------------------------------------------------------


Program License Serial Number 6311

------------------------------------------------------------------------
Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) =  100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity =  2.010(In/Hr)
10 year storm 60 minute intensity =  0.820(In/Hr)
100 year storm 10 minute intensity =  2.940(In/Hr)
100 year storm 60 minute intensity =  1.200(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity =  1.200(In/Hr)
Slope of intensity duration curve = 0.5000



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Process from Point/Station       20.000 to Point/Station       21.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   670.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1640.000(Ft.)
Difference in elevation =    45.000(Ft.)
Slope =    0.06716  s(percent)=       6.72
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.574 min.
Rainfall intensity =      3.174(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.837
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      7.622(CFS)
Total initial stream area =        2.870(Ac.)
Pervious area fraction = 0.350
```

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Process from Point/Station       21.000 to Point/Station       23.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1635.000(Ft.)
Downstream point/station elevation =  1611.000(Ft.)
Pipe length  =   365.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.622(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     7.622(CFS)
Normal flow depth in pipe =    8.38(In.)
Flow top width inside pipe =   11.02(In.)
Critical depth could not be calculated.
Pipe flow velocity =     13.02(Ft/s)
Travel time through pipe =    0.47 min.
Time of concentration (TC) =     9.04 min.


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Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      2.870(Ac.)
Runoff from this stream =      7.622(CFS)
Time of concentration =    9.04 min.
Rainfall intensity =     3.091(In/Hr)


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Process from Point/Station       22.000 to Point/Station       23.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   450.000(Ft.)
Top (of initial area) elevation =  1636.000(Ft.)
Bottom (of initial area) elevation =  1616.000(Ft.)
Difference in elevation =    20.000(Ft.)
Slope =    0.04444  s(percent)=       4.44
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.942 min.
Rainfall intensity =      3.298(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.824
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      5.327(CFS)
Total initial stream area =        1.960(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.960(Ac.)
Runoff from this stream =      5.327(CFS)
Time of concentration =    7.94 min.
Rainfall intensity =     3.298(In/Hr)
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       24.000 to Point/Station       23.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   370.000(Ft.)
Top (of initial area) elevation =  1619.000(Ft.)
Bottom (of initial area) elevation =  1616.000(Ft.)
Difference in elevation =     3.000(Ft.)
Slope =    0.00811  s(percent)=       0.81
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.320 min.
Rainfall intensity =      2.893(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.816
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      2.055(CFS)
Total initial stream area =        0.870(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       23.000 to Point/Station       23.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      0.870(Ac.)
Runoff from this stream =      2.055(CFS)
Time of concentration =   10.32 min.
Rainfall intensity =     2.893(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        7.622      9.04                3.091
2        5.327      7.94                3.298
3        2.055     10.32                2.893
Largest stream flow has longer or shorter time of concentration
Qp =      7.622 + sum of
         Qb         Ia/Ib
          5.327 *    0.937 =      4.993
         Qa          Tb/Ta
          2.055 *    0.876 =      1.800
Qp =     14.415

Total of 3 streams to confluence:
Flow rates before confluence point:
       7.622       5.327       2.055
Area of streams before confluence:
        2.870        1.960        0.870
Results of confluence:
Total flow rate =     14.415(CFS)
Time of concentration =     9.042 min.
Effective stream area after confluence =      5.700(Ac.)
```

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Process from Point/Station       23.000 to Point/Station       32.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1611.000(Ft.)
Downstream point/station elevation =  1597.000(Ft.)
Pipe length  =   920.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    14.415(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    14.415(CFS)
Normal flow depth in pipe =   13.41(In.)
Flow top width inside pipe =   20.18(In.)
Critical Depth =   16.91(In.)
Pipe flow velocity =      8.89(Ft/s)
Travel time through pipe =    1.73 min.
Time of concentration (TC) =    10.77 min.


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.700(Ac.)
Runoff from this stream =     14.415(CFS)
Time of concentration =   10.77 min.
Rainfall intensity =     2.833(In/Hr)


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Process from Point/Station       23.000 to Point/Station       32.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   920.000(Ft.)
Top (of initial area) elevation =  1616.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =    14.000(Ft.)
Slope =    0.01522  s(percent)=       1.52
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.099 min.
Rainfall intensity =      2.568(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.809
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      8.661(CFS)
Total initial stream area =        4.170(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.170(Ac.)
Runoff from this stream =      8.661(CFS)
Time of concentration =   13.10 min.
Rainfall intensity =     2.568(In/Hr)
```

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Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1        14.415     10.77                 2.833
2         8.661     13.10                 2.568
Largest stream flow has longer or shorter time of concentration
Qp =     14.415 + sum of
          Qa          Tb/Ta
           8.661 *    0.822 =      7.119
Qp =     21.534

Total of 2 streams to confluence:
Flow rates before confluence point:
      14.415       8.661
Area of streams before confluence:
        5.700        4.170
Results of confluence:
Total flow rate =     21.534(CFS)
Time of concentration =    10.767 min.
Effective stream area after confluence =      9.870(Ac.)


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      9.870(Ac.)
Runoff from this stream =     21.534(CFS)
Time of concentration =   10.77 min.
Rainfall intensity =     2.833(In/Hr)
Program is now starting with Main Stream No. 2


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Process from Point/Station       20.000 to Point/Station       27.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Initial area flow distance =   630.000(Ft.)
Top (of initial area) elevation =  1685.000(Ft.)
Bottom (of initial area) elevation =  1627.000(Ft.)
Difference in elevation =    58.000(Ft.)
Slope =    0.09206  s(percent)=       9.21
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.855 min.
Rainfall intensity =      3.317(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.852
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      7.995(CFS)
Total initial stream area =        2.830(Ac.)
Pervious area fraction = 0.350
```

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Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      2.830(Ac.)
Runoff from this stream =      7.995(CFS)
Time of concentration =    7.85 min.
Rainfall intensity =     3.317(In/Hr)


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Process from Point/Station       22.000 to Point/Station       26.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   135.000(Ft.)
Top (of initial area) elevation =  1636.000(Ft.)
Bottom (of initial area) elevation =  1635.000(Ft.)
Difference in elevation =     1.000(Ft.)
Slope =    0.00741  s(percent)=       0.74
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.021 min.
Rainfall intensity =      3.508(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.852
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.100
Decimal fraction soil group C = 0.900
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  67.70
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      2.390(CFS)
Total initial stream area =        0.800(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       26.000 to Point/Station       29.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1630.000(Ft.)
Downstream point/station elevation =  1614.000(Ft.)
Pipe length  =   450.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.390(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     2.390(CFS)
Normal flow depth in pipe =    5.91(In.)
Flow top width inside pipe =    8.55(In.)
Critical Depth =    8.21(In.)
Pipe flow velocity =      7.78(Ft/s)
Travel time through pipe =    0.96 min.
Time of concentration (TC) =     7.98 min.


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Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      0.800(Ac.)
Runoff from this stream =      2.390(CFS)
Time of concentration =    7.98 min.
Rainfall intensity =     3.289(In/Hr)
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Process from Point/Station       28.000 to Point/Station       29.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   420.000(Ft.)
Top (of initial area) elevation =  1624.500(Ft.)
Bottom (of initial area) elevation =  1619.000(Ft.)
Difference in elevation =     5.500(Ft.)
Slope =    0.01310  s(percent)=       1.31
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.865 min.
Rainfall intensity =      2.959(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.833
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      5.497(CFS)
Total initial stream area =        2.230(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       29.000 to Point/Station       29.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 3
Stream flow area =      2.230(Ac.)
Runoff from this stream =      5.497(CFS)
Time of concentration =    9.86 min.
Rainfall intensity =     2.959(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        7.995      7.85                3.317
2        2.390      7.98                3.289
3        5.497      9.86                2.959
Largest stream flow has longer or shorter time of concentration
Qp =      7.995 + sum of
         Qa          Tb/Ta
          2.390 *    0.984 =      2.351
         Qa          Tb/Ta
          5.497 *    0.796 =      4.377
Qp =     14.723

Total of 3 streams to confluence:
Flow rates before confluence point:
       7.995       2.390       5.497
Area of streams before confluence:
        2.830        0.800        2.230
Results of confluence:
Total flow rate =     14.723(CFS)
Time of concentration =     7.855 min.
Effective stream area after confluence =      5.860(Ac.)
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Process from Point/Station       29.000 to Point/Station       31.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1614.000(Ft.)
Downstream point/station elevation =  1612.500(Ft.)
Pipe length  =    90.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    14.723(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    14.723(CFS)
Normal flow depth in pipe =   13.20(In.)
Flow top width inside pipe =   20.30(In.)
Critical Depth =   17.08(In.)
Pipe flow velocity =      9.26(Ft/s)
Travel time through pipe =    0.16 min.
Time of concentration (TC) =     8.02 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       31.000 to Point/Station       31.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      5.860(Ac.)
Runoff from this stream =     14.723(CFS)
Time of concentration =    8.02 min.
Rainfall intensity =     3.283(In/Hr)


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Process from Point/Station       24.000 to Point/Station       30.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   225.000(Ft.)
Top (of initial area) elevation =  1619.000(Ft.)
Bottom (of initial area) elevation =  1617.500(Ft.)
Difference in elevation =     1.500(Ft.)
Slope =    0.00667  s(percent)=       0.67
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.796 min.
Rainfall intensity =      3.134(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.821
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.287(CFS)
Total initial stream area =        0.500(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       31.000 to Point/Station       31.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      0.500(Ac.)
Runoff from this stream =      1.287(CFS)
Time of concentration =    8.80 min.
Rainfall intensity =     3.134(In/Hr)
```

```
Summary of stream data:

Stream    Flow rate      TC            Rainfall Intensity
 No.        (CFS)       (min)                (In/Hr)


1        14.723      8.02                 3.283
2         1.287      8.80                 3.134
Largest stream flow has longer or shorter time of concentration
Qp =     14.723 + sum of
         Qa          Tb/Ta
          1.287 *    0.911 =      1.173
Qp =     15.896

Total of 2 streams to confluence:
Flow rates before confluence point:
      14.723       1.287
Area of streams before confluence:
        5.860        0.500
Results of confluence:
Total flow rate =     15.896(CFS)
Time of concentration =     8.017 min.
Effective stream area after confluence =      6.360(Ac.)


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Process from Point/Station       31.000 to Point/Station       32.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1612.500(Ft.)
Downstream point/station elevation =  1597.000(Ft.)
Pipe length  =   150.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    15.896(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    15.896(CFS)
Normal flow depth in pipe =    9.83(In.)
Flow top width inside pipe =   14.26(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.64(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =     8.15 min.


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      6.360(Ac.)
Runoff from this stream =     15.896(CFS)
Time of concentration =    8.15 min.
Rainfall intensity =     3.256(In/Hr)


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Process from Point/Station       34.000 to Point/Station       32.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   435.000(Ft.)
Top (of initial area) elevation =  1644.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =    42.000(Ft.)
Slope =    0.09655  s(percent)=       9.66
```

```
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    6.709 min.
Rainfall intensity =      3.589(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.855
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      3.222(CFS)
Total initial stream area =        1.050(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      1.050(Ac.)
Runoff from this stream =      3.222(CFS)
Time of concentration =    6.71 min.
Rainfall intensity =     3.589(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       15.896      8.15                 3.256
2        3.222      6.71                 3.589
Largest stream flow has longer time of concentration
Qp =     15.896 + sum of
         Qb         Ia/Ib
          3.222 *    0.907 =      2.923
Qp =     18.819

Total of 2 streams to confluence:
Flow rates before confluence point:
      15.896       3.222
Area of streams before confluence:
        6.360        1.050
Results of confluence:
Total flow rate =     18.819(CFS)
Time of concentration =     8.151 min.
Effective stream area after confluence =      7.410(Ac.)


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Process from Point/Station       32.000 to Point/Station       32.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      7.410(Ac.)
Runoff from this stream =     18.819(CFS)
Time of concentration =    8.15 min.
Rainfall intensity =     3.256(In/Hr)
Summary of stream data:
```

```
Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       21.534     10.77            2.833
2       18.819      8.15            3.256
Largest stream flow has longer time of concentration
Qp =     21.534 + sum of
         Qb         Ia/Ib
         18.819 *    0.870 =     16.373
Qp =     37.907

Total of 2 main streams to confluence:
Flow rates before confluence point:
      21.534      18.819
Area of streams before confluence:
        9.870        7.410


Results of confluence:
Total flow rate =     37.907(CFS)
Time of concentration =    10.767 min.
Effective stream area after confluence  =     17.280(Ac.)


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Process from Point/Station       32.000 to Point/Station       42.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1597.000(Ft.)
Downstream point/station elevation =  1595.000(Ft.)
Pipe length  =    50.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    37.907(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    37.907(CFS)
Normal flow depth in pipe =   16.80(In.)
Flow top width inside pipe =   21.99(In.)
Critical depth could not be calculated.
Pipe flow velocity =     16.13(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    10.82 min.


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Process from Point/Station       42.000 to Point/Station       42.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     17.280(Ac.)
Runoff from this stream =     37.907(CFS)
Time of concentration =   10.82 min.
Rainfall intensity =     2.826(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       25.000 to Point/Station       33.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   650.000(Ft.)
Top (of initial area) elevation =  1607.000(Ft.)
Bottom (of initial area) elevation =  1602.000(Ft.)
Difference in elevation =     5.000(Ft.)
Slope =    0.00769  s(percent)=       0.77
```

```
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.066 min.
Rainfall intensity =      2.571(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.809
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      2.080(CFS)
Total initial stream area =        1.000(Ac.)
Pervious area fraction = 0.350


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Process from Point/Station       42.000 to Point/Station       42.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      1.000(Ac.)
Runoff from this stream =      2.080(CFS)
Time of concentration =   13.07 min.
Rainfall intensity =     2.571(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       37.907     10.82                2.826
2        2.080     13.07                2.571
Largest stream flow has longer or shorter time of concentration
Qp =     37.907 + sum of
         Qa          Tb/Ta
          2.080 *    0.828 =      1.722
Qp =     39.629

Total of 2 streams to confluence:
Flow rates before confluence point:
      37.907       2.080
Area of streams before confluence:
       17.280        1.000
Results of confluence:
Total flow rate =     39.629(CFS)
Time of concentration =    10.819 min.
Effective stream area after confluence =     18.280(Ac.)


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Process from Point/Station       42.000 to Point/Station       43.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1595.000(Ft.)
Downstream point/station elevation =  1584.000(Ft.)
Pipe length  =   340.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    39.629(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    39.629(CFS)
Normal flow depth in pipe =   19.13(In.)
Flow top width inside pipe =   19.31(In.)
Critical depth could not be calculated.
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Pipe flow velocity =     14.76(Ft/s)
Travel time through pipe =    0.38 min.
Time of concentration (TC) =    11.20 min.


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Process from Point/Station       43.000 to Point/Station       43.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.280(Ac.)
Runoff from this stream =     39.629(CFS)
Time of concentration =   11.20 min.
Rainfall intensity =     2.777(In/Hr)


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Process from Point/Station       32.000 to Point/Station       38.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   315.000(Ft.)
Top (of initial area) elevation =  1602.000(Ft.)
Bottom (of initial area) elevation =  1593.500(Ft.)
Difference in elevation =     8.500(Ft.)
Slope =    0.02698  s(percent)=       2.70
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.609 min.
Rainfall intensity =      3.370(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.840
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  62.50
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.726(CFS)
Total initial stream area =        0.610(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       38.000 to Point/Station       43.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1588.000(Ft.)
Downstream point/station elevation =  1584.000(Ft.)
Pipe length  =   160.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.726(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     1.726(CFS)
Normal flow depth in pipe =    5.34(In.)
Flow top width inside pipe =    8.84(In.)
Critical Depth =    7.24(In.)
Pipe flow velocity =      6.32(Ft/s)
Travel time through pipe =    0.42 min.
Time of concentration (TC) =     8.03 min.
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       43.000 to Point/Station       43.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.610(Ac.)
Runoff from this stream =      1.726(CFS)
Time of concentration =    8.03 min.
Rainfall intensity =     3.280(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       39.629     11.20                 2.777
2        1.726      8.03                 3.280
Largest stream flow has longer time of concentration
Qp =     39.629 + sum of
         Qb         Ia/Ib
          1.726 *    0.847 =      1.461
Qp =     41.090

Total of 2 streams to confluence:
Flow rates before confluence point:
      39.629       1.726
Area of streams before confluence:
       18.280        0.610
Results of confluence:
Total flow rate =     41.090(CFS)
Time of concentration =    11.203 min.
Effective stream area after confluence =     18.890(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       43.000 to Point/Station       50.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  1584.000(Ft.)
Downstream point/station elevation =  1580.000(Ft.)
Pipe length  =   240.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    41.090(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    41.090(CFS)
Normal flow depth in pipe =   22.88(In.)
Flow top width inside pipe =   19.43(In.)
Critical Depth =   25.25(In.)
Pipe flow velocity =     11.44(Ft/s)
Travel time through pipe =    0.35 min.
Time of concentration (TC) =    11.55 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 1
Stream flow area =     18.890(Ac.)
Runoff from this stream =     41.090(CFS)
Time of concentration =   11.55 min.
Rainfall intensity =     2.735(In/Hr)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       38.000 to Point/Station       39.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =   250.000(Ft.)
Top (of initial area) elevation =  1593.500(Ft.)
Bottom (of initial area) elevation =  1590.000(Ft.)
Difference in elevation =     3.500(Ft.)
Slope =    0.01400  s(percent)=       1.40
TC = k(0.370)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    7.910 min.
Rainfall intensity =      3.305(In/Hr) for a   100.0 year storm
CONDOMINIUM subarea type
Runoff Coefficient = 0.824
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  56.00
Pervious area fraction =  0.350; Impervious fraction =  0.650
Initial subarea runoff =      1.008(CFS)
Total initial stream area =        0.370(Ac.)
Pervious area fraction = 0.350


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      0.370(Ac.)
Runoff from this stream =      1.008(CFS)
Time of concentration =    7.91 min.
Rainfall intensity =     3.305(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       35.000 to Point/Station       50.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
Initial area flow distance =  1000.000(Ft.)
Top (of initial area) elevation =  1660.000(Ft.)
Bottom (of initial area) elevation =  1585.000(Ft.)
Difference in elevation =    75.000(Ft.)
Slope =    0.07500  s(percent)=       7.50
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   18.891 min.
Rainfall intensity =      2.139(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.703
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      5.608(CFS)
Total initial stream area =        3.730(Ac.)
Pervious area fraction = 1.000
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      3.730(Ac.)
Runoff from this stream =      5.608(CFS)
Time of concentration =   18.89 min.
Rainfall intensity =     2.139(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       36.000 to Point/Station       37.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Initial area flow distance =   750.000(Ft.)
Top (of initial area) elevation =  1673.000(Ft.)
Bottom (of initial area) elevation =  1603.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.09333  s(percent)=       9.33
TC = k(0.710)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   16.117 min.
Rainfall intensity =      2.315(In/Hr) for a   100.0 year storm
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.715
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.841(CFS)
Total initial stream area =       2.320(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       37.000 to Point/Station       50.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
Top of natural channel elevation =   1603.000(Ft.)
End of natural channel elevation =   1585.000(Ft.)
Length of natural channel  =   485.000(Ft.)
Estimated mean flow rate at midpoint of channel =      4.892(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   4.04(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
       Normal channel slope =  0.0371
Corrected/adjusted channel slope =  0.0371
Travel time =    2.00 min.     TC =   18.12  min.


 Adding area flow to channel
UNDEVELOPED (fair cover) subarea
Runoff Coefficient = 0.706
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
```

```
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Rainfall intensity =      2.184(In/Hr) for a   100.0 year storm
Subarea runoff =      1.959(CFS) for      1.270(Ac.)
Total runoff =      5.800(CFS)   Total area =       3.590(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station       50.000 to Point/Station       50.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 4
Stream flow area =      3.590(Ac.)
Runoff from this stream =      5.800(CFS)
Time of concentration =   18.12 min.
Rainfall intensity =     2.184(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       41.090     11.55                2.735
2        1.008      7.91                3.305
3        5.608     18.89                2.139
4        5.800     18.12                2.184
Largest stream flow has longer or shorter time of concentration
Qp =     41.090 + sum of
         Qb         Ia/Ib
          1.008 *    0.827 =      0.834
         Qa          Tb/Ta
          5.608 *    0.612 =      3.430
         Qa          Tb/Ta
          5.800 *    0.638 =      3.698
Qp =     49.052

Total of 4 streams to confluence:
Flow rates before confluence point:
      41.090       1.008       5.608       5.800
Area of streams before confluence:
       18.890        0.370        3.730        3.590
Results of confluence:
Total flow rate =     49.052(CFS)
Time of concentration =    11.552 min.
Effective stream area after confluence =     26.580(Ac.)
End of computations, total study area =           26.58 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.529
Area averaged RI index number =  63.2
```

APPENDIX B

Water Quality Facility Sizing Calculations

(Note this worksheet shall ***only*** be used in conjunction with BMP designs from the ***LID BMP Design Handbook***)

pany Name	WAI	Date	3/2/2017
gned by	Mariela Anguelov	Case No	
pany Project Number/Name			Reserve at Rancho Belago, MV

BMP Identification

' NAME / ID: Infiltration Basin

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Percentile, 24-hour Rainfall Depth,
the Isohyetal Map in Handbook Appendix E

D_{85}= 0.68 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 1 BLDGS	*157,392*	*Roofs*	*1*	*0.89*	*140393.7*			
DMA 1 LNDSC	*282,498*	*Ornamental Landscaping*	*0.1*	*0.11*	*31204.2*			
DMA 1 DWYs PARKING	*367,248*	*Concrete or Asphalt*	*1*	*0.89*	*327585.2*			
	807138	***Total***			499183.1	0.68	*28287*	*31500*

s:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID: Infiltr Basin	Legend: Required Entries / Calculated Cells

Company Name: WAI
Designed by: Mariela Anguelov
Date: 7/19/2017
County/City Case No.:

Design Volume

a) Tributary area (BMP subarea)	A_T =	18.53	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	28,287	ft^3

Maximum Depth

a) Infiltration rate	I =	2	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	4.0	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)		50	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		10	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	4.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	4.0	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	4	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	7072	ft^2
d) Proposed Design Surface Area	A_D =	8060	ft^2

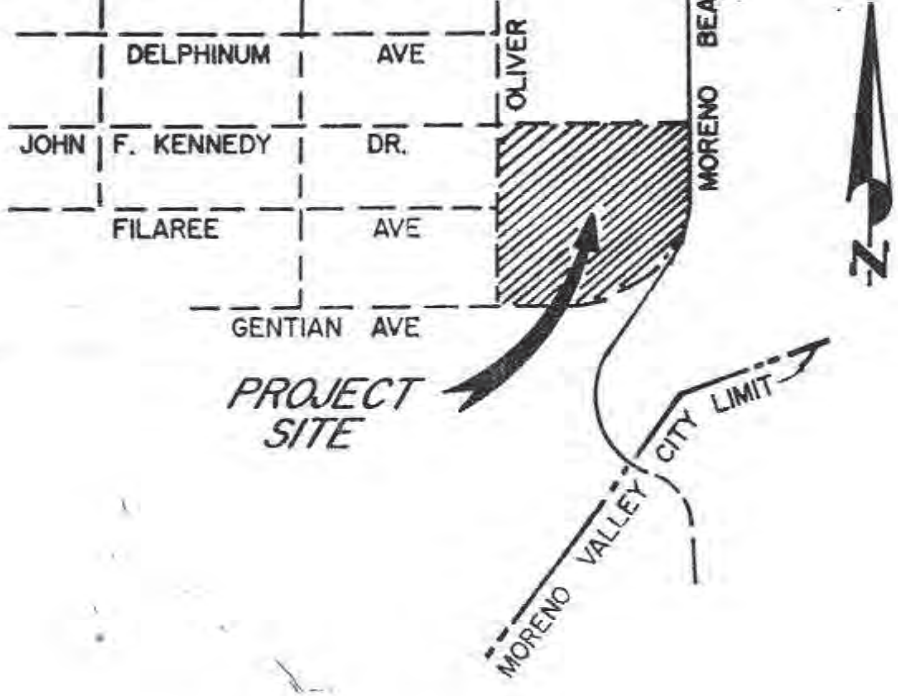
Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	141	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1.5	ft
c) Forebay surface area (minimum)	Area =	94	ft^2
d) Full height notch-type weir	Width (W) =	4.0	in

Notes:

APPENDIX C

Reference Drawings



VICINITY MAP

NOT TO SCALE

3. THE CONTRACTOR SHALL BE
PROPOSE WORK AREA AND
UTILITIES. PERMITEE MU
OURS PRIOR TO COMMENCEME

4. IT SHALL BE THE RES
CONTRACTOR TO APPLY TO
DEPARTMENT, PERMIT SECTI
WORK ON EXISTING CITY MA
WITHIN OFFERS OF DEDICA

5. CONSTRUCTION INSPECTION
COUNTY FLOOD CONTROL.
1288. THE DISTRICT MU
CONSTRUCTION.

6. ALL STATIONING REFERS
OTHERWISE NOTES.

7. STATIONING FOR LATERALS
CENTERLINE-CENTERLINE IN

8. FORTY-EIGHT HOURS BEF
SERVICE ALERT 1-800-422-

9. ALL ELEVATIONS ARE IN
U.S.C. AND G.S. DATUM.

10. ALL CROSS SECTIONS ARE

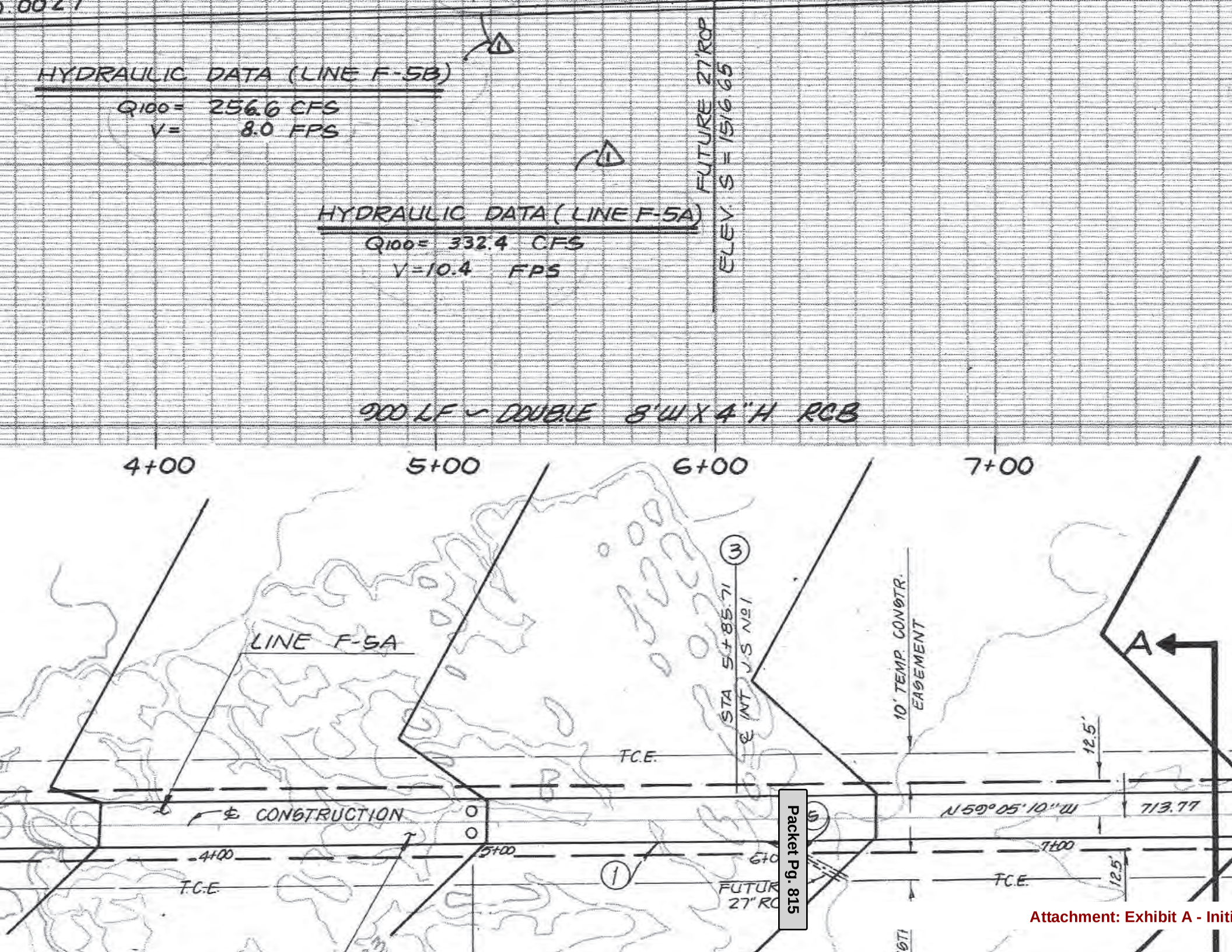
11. ELEVATIONS OF UTILITIES
NOTED.

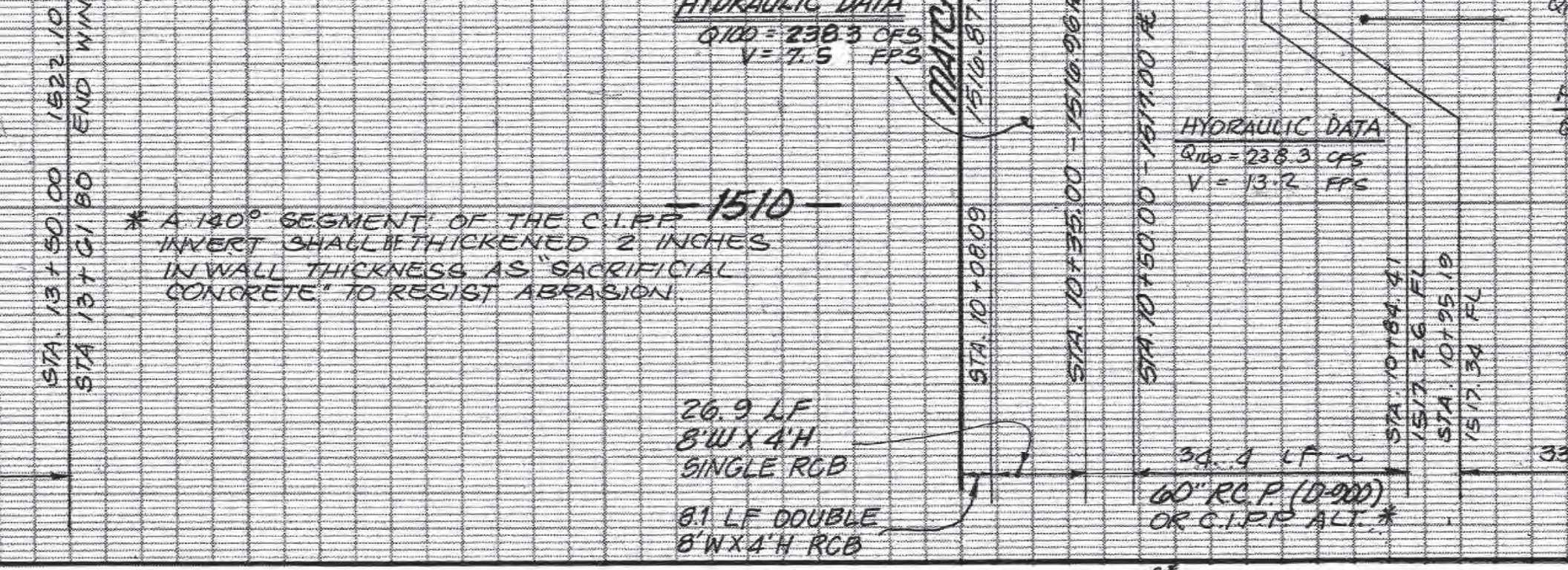
12. NOTICE TO CONTRACTOR:
UNDERGROUND UTILITY PIPE
WERE OBTAINED BY A SEARC
BEST OF OUR KNOWLEDGE.
EXCEPT FOR THOSE SHOWN
REQUIRED TO TAKE DUE PR
UTILITY LINES SHOWN AND
PLANS OR NOT RECORDED.

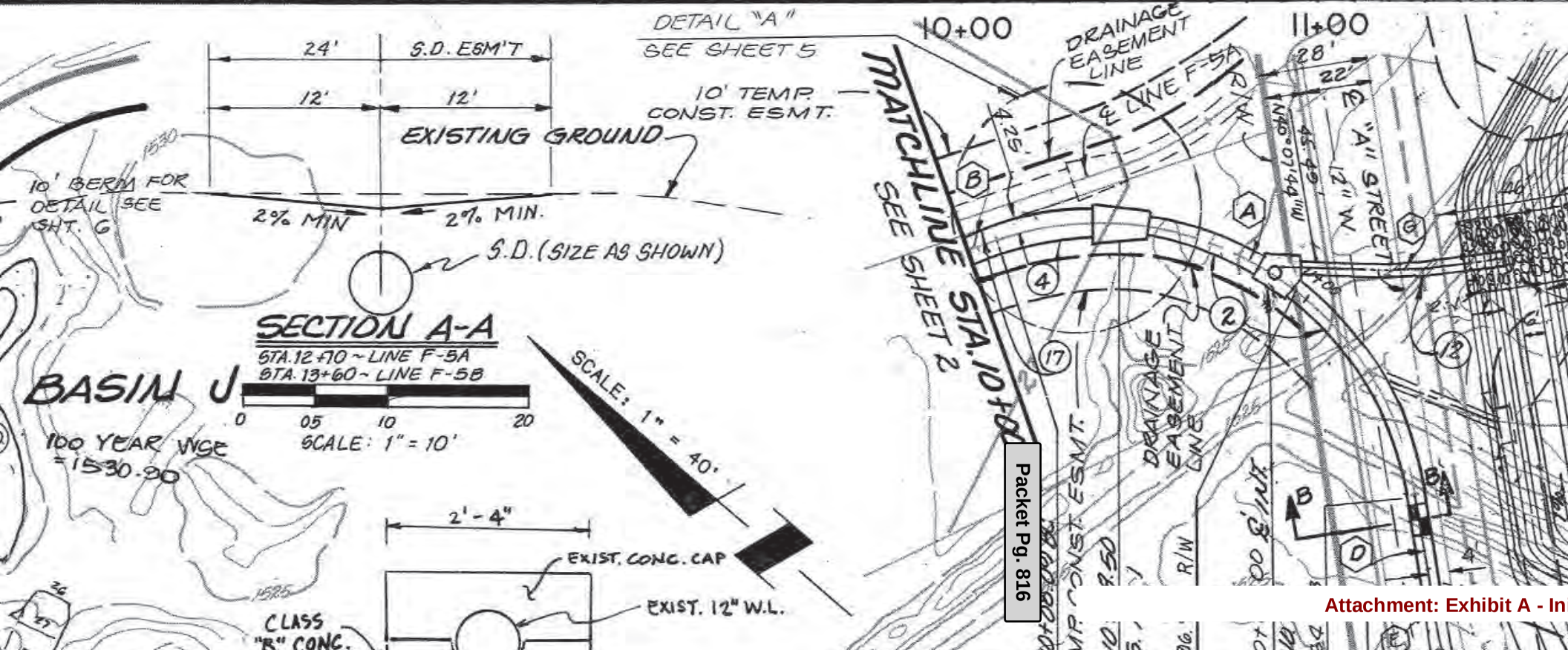
13. ALL BACKFILL TO BE 90%
SPECIFIED AND SHALL B
ENGINEER PRIOR TO PAVI
DEVELOPER'S EXPENSE.

14. OPENINGS RESULTING FROM
EXISTING CULVERTS, PIP
ABANDONED SHALL BE SEALE

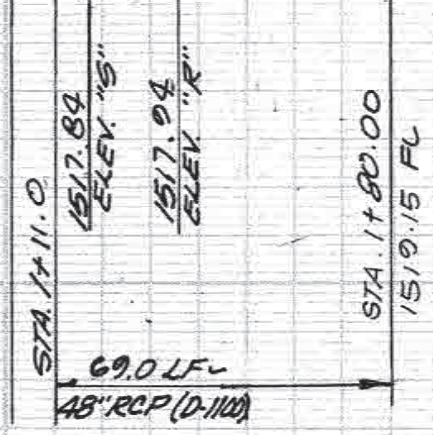
TO LOS ANGELES COUNTY







V = 9.7 FPS

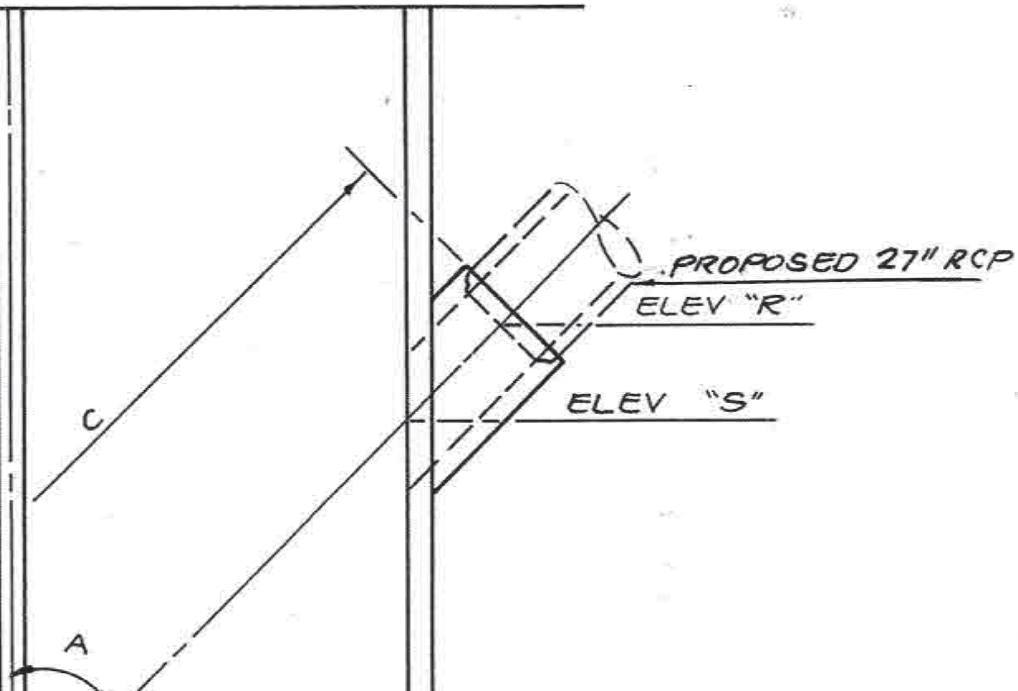


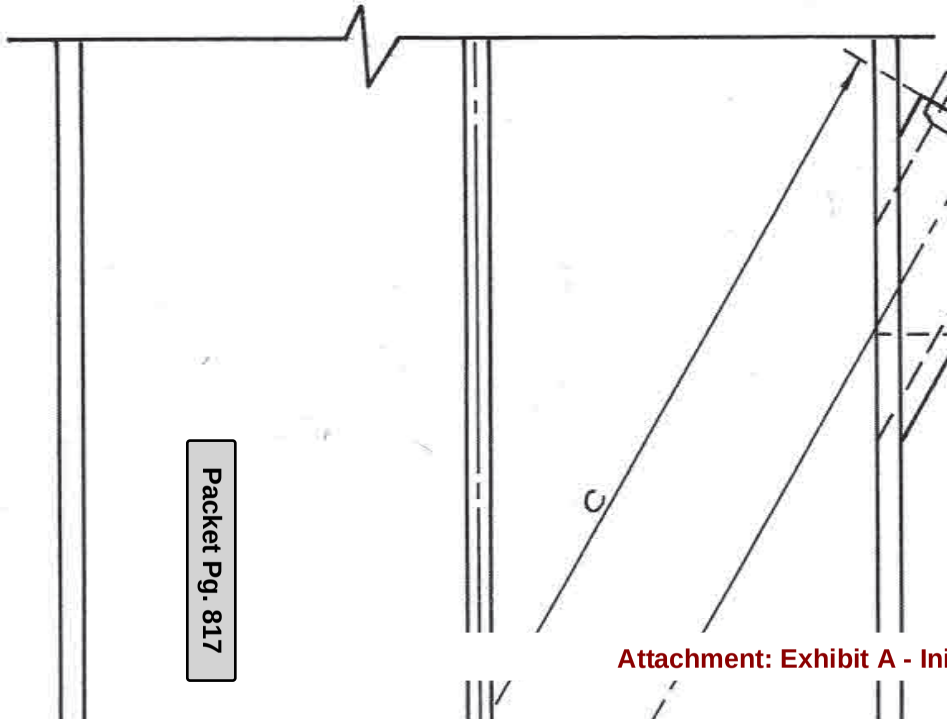
48" PIPE AND INLET STRUCTURE WILL BE MAINTAINED BY THE CITY OF MORENO VALLEY

TEMP. INLET CONNECTOR PIPE PROFILE

STA. 1 + 85.00 LINE F-5B
FOR PLAN VIEW SEE SHT. 3
SCALE: HORIZ. 1" = 40'
VERT. 1" = 4'

1+00





"c" bars

ALL SECTION
THRU 14'

IFORNIA
NSPORTATION

CULVERT

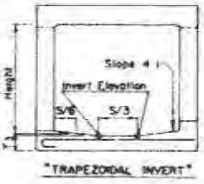
D81

ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS

STRUCTURE DESIGN
ENGINEER

4, 1988
DATE

J. E. ROBERTS
No. 11428
Exp. 12-31-88
CIVIL
STATE OF CALIFORNIA

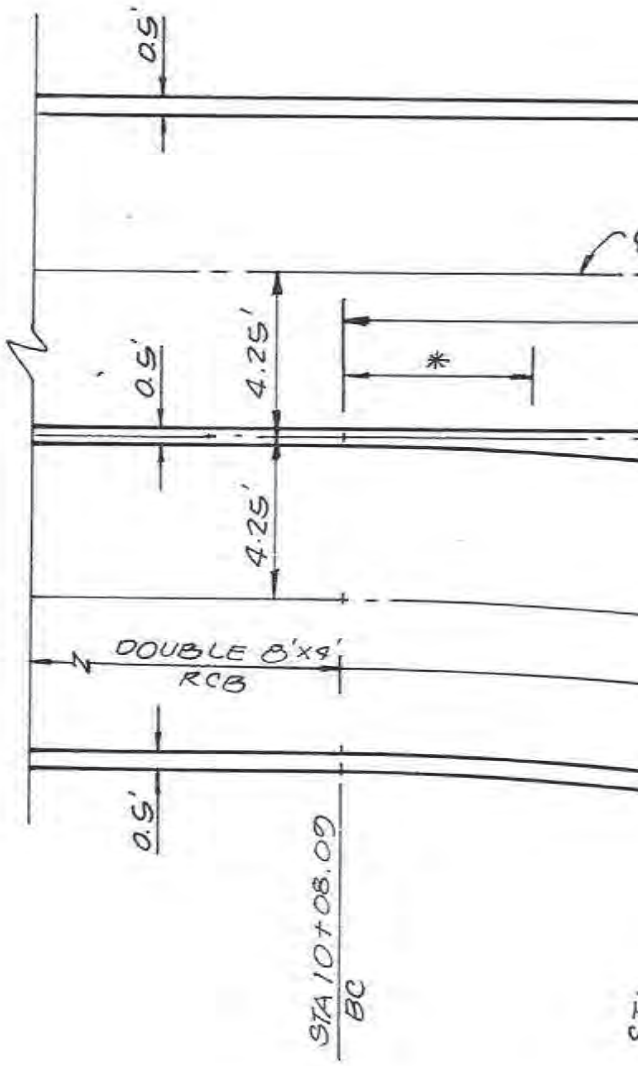


"TRAPEZOIDAL INVERT"

those shown in table,
and reinforcement
ntities

D80

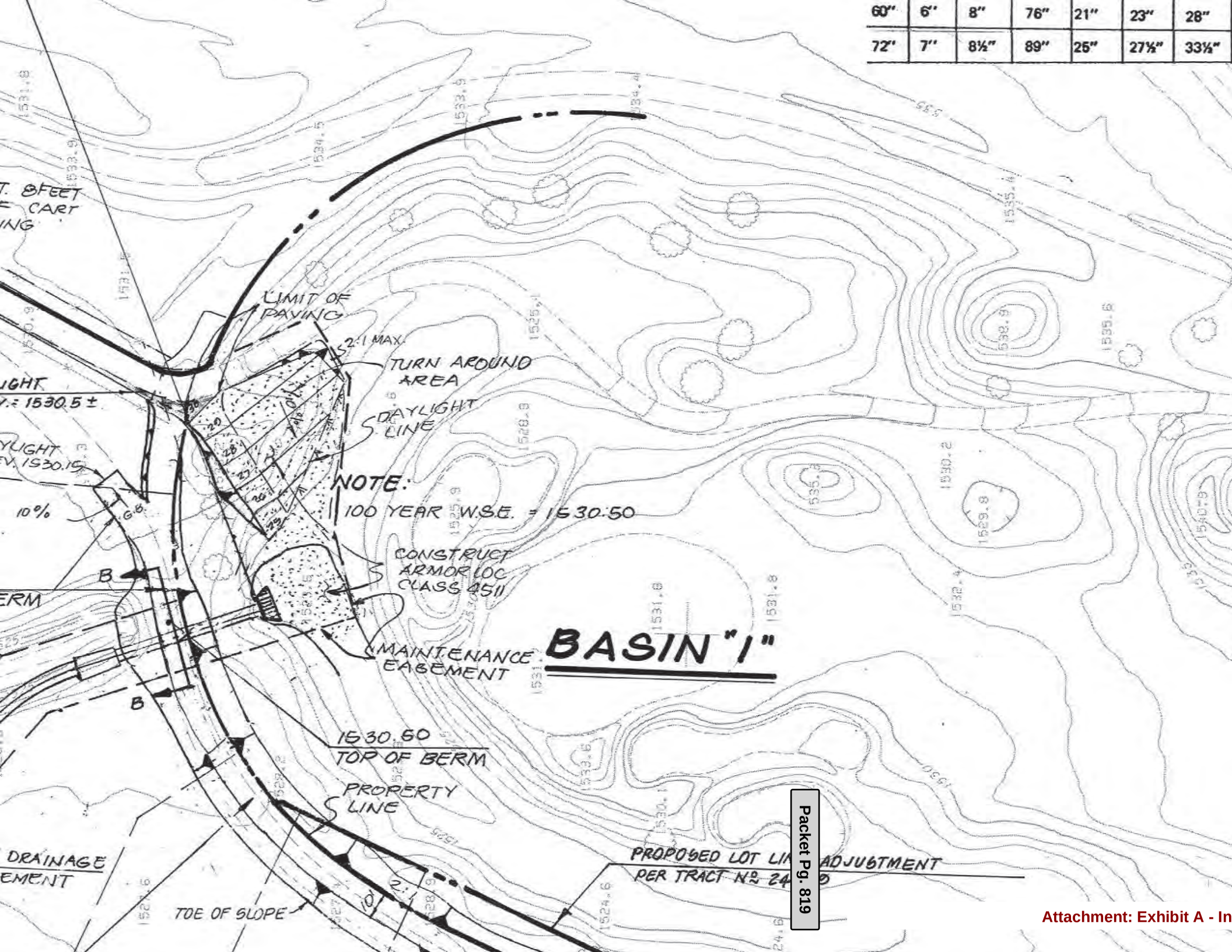
TYPE
NOT

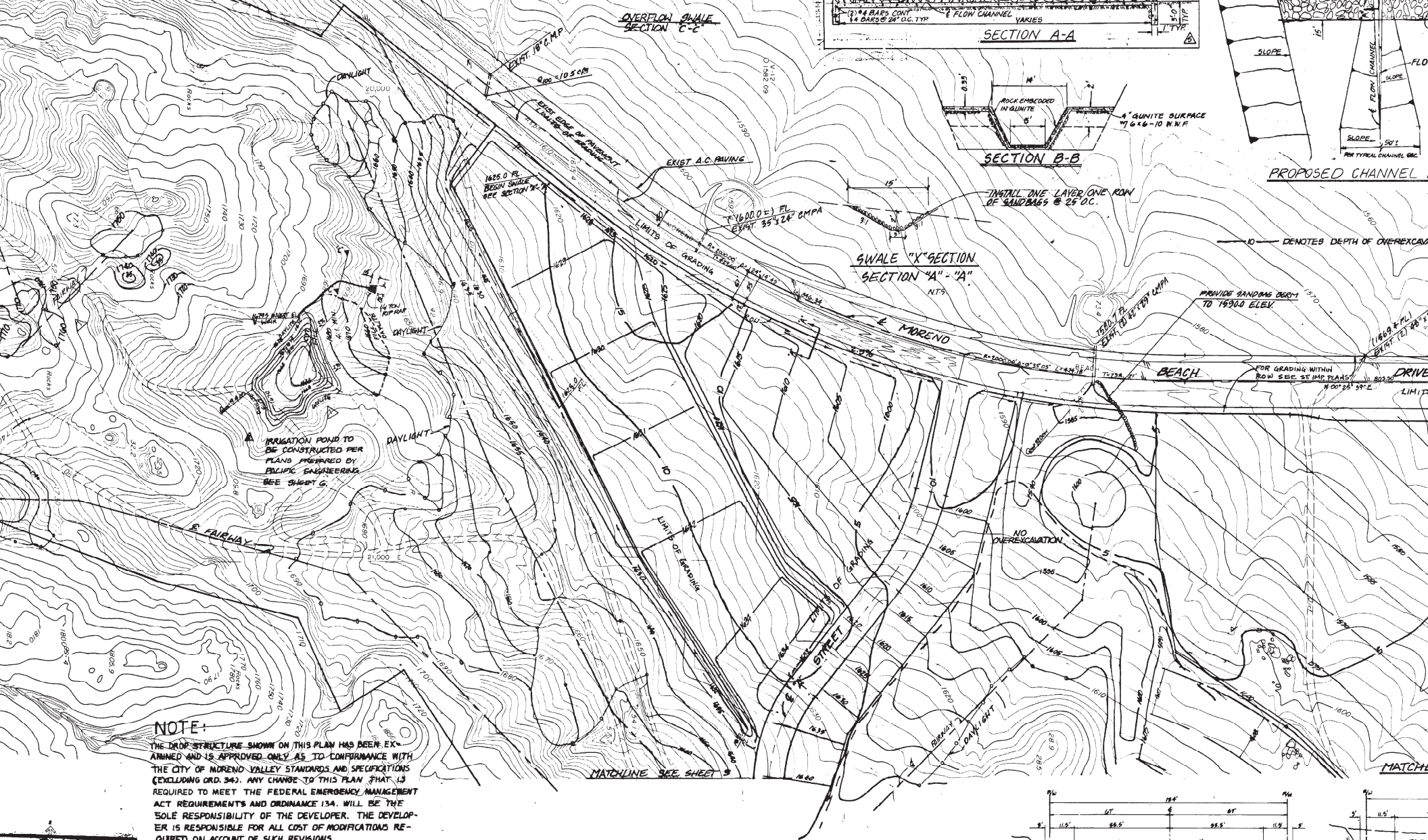


Packet Pg. 818

Attachment: Exhibit A - Ini

60"	6"	8"	76"	21"	23"	28"
72"	7"	8½"	89"	25"	27½"	33½"

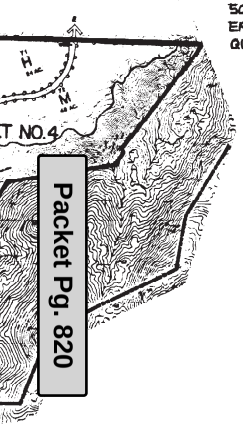


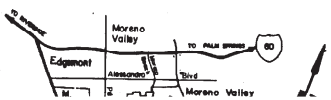


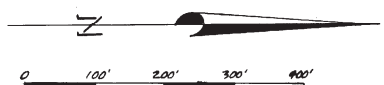
NOTE:
THE DROP STRUCTURE SHOWN ON THIS PLAN HAS BEEN EXAMINED AND IS APPROVED ONLY AS TO CONFORMANCE WITH THE CITY OF MORENO VALLEY STANDARDS AND SPECIFICATIONS (EXCLUDING ORD. 343). ANY CHANGE TO THIS PLAN THAT IS REQUIRED TO MEET THE FEDERAL EMERGENCY MANAGEMENT ACT REQUIREMENTS AND ORDINANCE 134, WILL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER. THE DEVELOPER IS RESPONSIBLE FOR ALL COST OF MODIFICATIONS REQUIRED ON ACCOUNT OF SUCH REVISIONS.

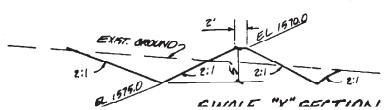
ENGINEER'S ESTIMATE OF QUANTITIES

	CUT	FILL
RAW VOLUMES	905,700 cy	528,000 cy
SUBSIDENCE		41,700
OVER-EXCAVATION	923,700	923,700
SUBTOTAL	1,829,400	1,554,900
SHRINKAGE 15%	274,500	
TOTAL	1,554,900 cy	1,654,900 cy





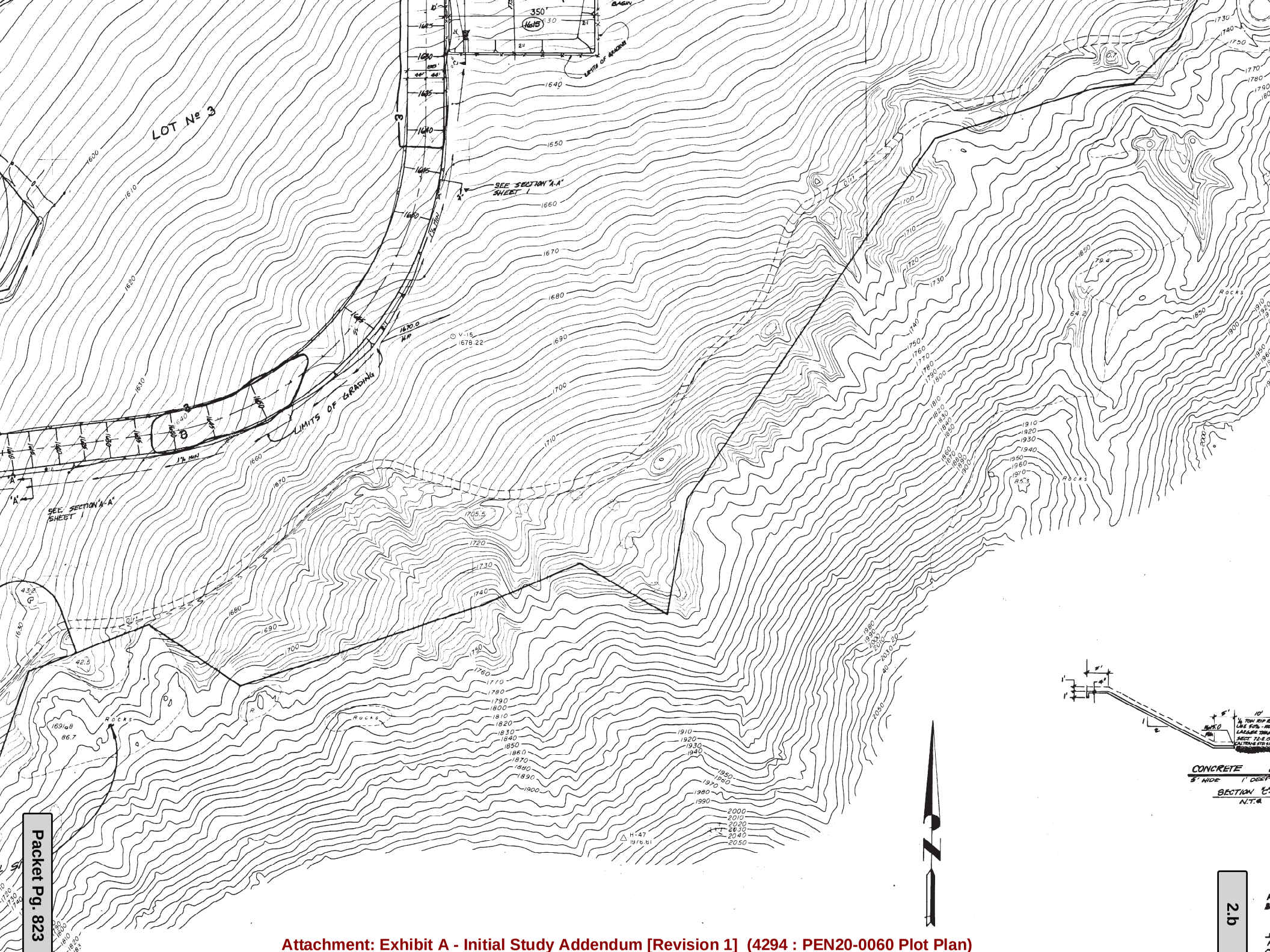





LAKE BOTTOM ELEVATION=1533.0
NORMAL WATER SURFACE ELEVATION =1541.0
PROPOSED 100 YR WATER SURFACE LIMITS
TOE OF SLOPE
SEE DROP STRUCTURE DETAIL SHT. 1
FAIRWAY 7
FAIRWAY 10
LIMITS OF GRADING
DAYLIGHT
Wash
V-14
1553.51
JFK DRIVE
CONST. 120 LF 36" CMP @ 1%
Q100 = 70 CFS
SEE SECTION K-K SHEET 1
SEE SECTION A-A SHEET 1
APPROVED BY CITY OF MORENO
FOR CITY ENGINEER
CITY OF MORENO VALLEY
Packet Pg. 821
2.b
Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)

FOR CITY ENGINEER

DATE



EROSION CONTROL NOTES

1. A standby crew for emergency work shall be available at all times during the rainy season. Necessary materials shall be available on site and stockpiled at convenient locations to facilitate rapid construction of temporary devices or to repair any damaged erosion control measures when rain is imminent.

2. Devices shall not be moved or modified without the approval of the City Inspector.

3. All removable protective devices shown shall be in place at the end of each working day, when the five-day rain probability forecast exceeds 40 percent.

4. After a rainstorm, all silt and debris shall be removed from check berms and desilting basins. Any graded slope surface protection measures damaged during a rainstorm shall also be immediately repaired.

5. The faces of cut and fill slopes shall be prepared and maintained to control against erosion. Erosion protection shall consist of effective planting of all slopes in excess of five (5) feet high unless otherwise approved by the City Engineer. Slopes exceeding fifteen (15) feet high may require an adequate sprinkler system, as determined by the City Engineer. The slope protection shall be installed as soon as practicable and prior to calling for final inspection.

6. Fill slopes at the tract perimeter must drain away from the top of the slope at the conclusion of each working day.

7. Placement of devices to reduce erosion damage within the tract must be shown on the plan.

8. Grading permits will not be issued without an approved erosion control plan. Erosion control shall be implemented during the rainy season (October 15 thru April 15), and additionally prior to any forecasted storm.

GRADING NOTES, CONTINUED

25. All grading shall comply with the requirements of the City of Moreno Valley grading ordinance and the preliminary soils report and be done under the direction and supervision of the Soils Engineer.

26. An approved, precise grading plan will be required prior to building permits being issued.

27. An as-built grading plan shall be submitted at the completion of work.

28. Strict adherence to dust control requirements shall be enforced.

29. Hours of operation are 7:00 AM to 6:00 PM, Monday through Friday.

30. Adjacent streets are to be cleaned daily of all dirt and debris that is the result of this operation.

31. It shall be the Contractor's responsibility to verify the location of all utilities or structures above or below ground, shown or not shown on these plans. He will be held responsible for all damage to any utilities or structures caused by his operation.

32. Separate permits shall be required for any improvement work in the public right-of-way.

33. All backfill of trenches to be certified by a Soils Engineer (90% minimum compaction).

34. All areas shall slope a minimum of 1% to street, drive or swale, unless otherwise shown.

35. All slope to be a maximum of 1 1/2 to 1 cut, 2 to 1 fill.

36. All slope adjacent to public right-of-way shall be a mixmum of 3 to 1 slope, or a 2 to 1 slope will be permitted beginning 5 feet from the right-of-way.

37. All slopes 4 feet or higher shall be planted and comply with the requirements of

38. All walls to constructed per City Standards and the Concrete Masonry Design Manual.

39. Separate permits shall be required for all walls.

40. Repair or replace damaged or altered public improvements, as required by the City Engineer.

41. Fire hydrant meter permit shall be secured from Eastern Municipal Water District prior to issuance of a grading permit.

42. If grading results in import or export, a plan of truck travel shall be submitted for approval.

GRADING NOTES

1. No grading shall be started without first notifying the Inspection Division. A pre-grading meeting at the site is required before start of clearing and grading with the following people present: Owner, Grading Contractor, Design Civil Engineer, Soils Engineer, Geologist, City Grading Inspectors, City Maintenance representative, Archaeologists or their representatives.

2. The permitee or his agent shall notify the City Engineer when the grading operation is ready for each of the following inspections: [Phone (714) 242-824B]
   A) Intial Inspection. When the permitee is ready to begin work but not less than two days before any clearing or grading is started.
   B) Toe Inspection. After the natural ground or bedrock is exposed and prepared to receive fill, but before fill is placed.
   C) Excavation Inspection. After the excavation is started, but before the vertical depth of the fill exceeds ten feet.
   D) Fill Inspection. After the fill placement is started, but before the vertical height of the fill exceeds ten feet.
   E) Drainage Device Inspection. After forming of terrace drains, down-drains or filler after placement of pipe in subdrains, but before any concrete or filler material is placed.
   F) Rough Grading Inspection. When all rough grading has been completed, this inspection may be called for without the inspector necessarily having previously reviewed and approved the required reports.
   G) Final Grading and Improvement Inspection. When all work (including installation of all drainage structures, other protective devices and all other improvements which include landscaping and irrigation systems) has been completed and the as-graded plan, professional certifications and the required reports have been submitted.

3. Cut and fill slopes shall be no steeper than 2 horizontal to 1 vertical.

4. Fills shall be compacted throughout to 90% density as determined by U.B.C. Standard Nos. 70-1 and 70-2, and certified by the Soils Engineer.

5. Areas to receive fill shall be properly prepared and approved by the City Engineer or his representative and Soils Engineer prior to placing of fill.

6. Fills shall be benched with approved material.

7. All existing fills shall be approved by the Soils Engineer and City Engineer or his representative before any additional fills are added.

8. The existing irrigation lines and cisterns shall be removed or crushed in place and backfilled and approved by the grading inspector and Soils Engineer.

9. Slopes exceeding five feet in height must be planted with an approved plant material. In addition slopes exceeding 15 feet in height must be provided with an approved irrigation system.

10. The Design Civil Engineer, prior to rough grade approval, shall provide a minimum of one blue top per finished pad, set at the highest point in the finished drainage swale. The elevation of the floor shall also be provided to insure proper clearance and fall to drainage swale. These elevations shall be noted on the building plans.

11. All trench backfills shall be tested and approved by the site Soils Engineer per the Grading and Excavation Code.

12. Subdrain outlets shall be completed at the beginning of the subdrain construction.

13. The exact location of the subdrains shall be surveyed in the field for line and grade, and the location shall be shown on the as-built grading plans.

14. All cut slopes shall be investigated both during and after grading by an Engineering Geologist to determine if any slope stability problem exists Should excavation disclose any geological hazards or potential geological hazards, the Engineering Geologist shall recommend necessary treatment to the City Grading Engineer for approval.

15. Where support or buttressing of cut and natural slopes is determined to be necessary by the Engineering Geologist and Soils Engineer, the Soils Engineer will submit design, location and calculations to the City Grading Engineer prior to construction. The Engineering Geologist and Soils Engineer will inspect and control the construction of the buttressing and certify to the stability of the slope and adjacent structures upon completion.

16. When cut pads are brought to near grade, the Engineering Geologist shall determine if the bedrock is extensively fractured or faulted and will readily transmit water. If considered necessary by the Engineering Geologist and Soils Engineer, a compacted fill blanket will be placed.

17. The Engineering Geologist shall perform periodic inspections and submit a complete report and map upon completion of the rough grading.

18. The final compaction report and approval from the Soils Engineer shall contain the type of field testing performed. The method of obtaining the in-place density, whether sand cone, nuclear gage, or drive ring and shall be so noted for each test. Sufficient maximum density determinations shall be performed to verify the accuracy of the maximum density curves used by the field technician.

19. The Soils Engineer and Engineering Geologist shall be responsible for the quality of the work performed, and shall exercise sufficient control during grading to insure compliance with the plans, specifications, and code within their purview.

20. The Design Civil Engineer shall provide written approval that the grading operation is in compliance with approved plans, specifications and applicable codes.

21. Dust shall be controlled by watering.

22. Sanitary facilities shall be maintained on the site.

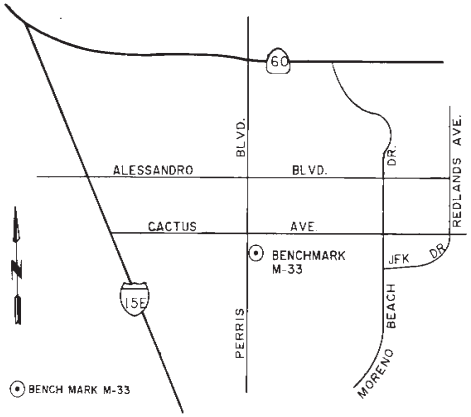
23. The location and protection of all utilities is the responsibility of the permittee.

24. All existing drainage courses on the project site must continue to function, especially during storm conditions and approved protective measures and temporary drainage provisions must be used to protect adjoining properties during the grading project. In all cases, the contractor and/or developer shall be held liable for any damage due to obstructing the natural drainage patterns.

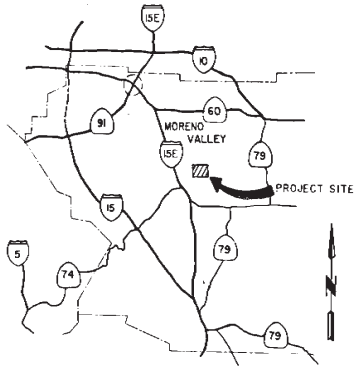
RIVERSIDE COUNTY , CALIFORNIA
CONSTRUCTION PLANS FOR

MORENO BEACH DRIVE
JOHN F. KENNEDY DR.
CACTUS AVENUE

IN THE
CITY OF MORENO VALLEY



LOCATION MAP
N.T.S.



VICINITY MAP
N.T.S.

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF THE PROPOSED WORK AREA, AND RELOCATION COST OF ALL EXISTING UTILITIES. PERMITTEE MUST INFORM CITY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION AT (714-242-8248).
2. THE DEVELOPER WILL INSTALL STREET NAME SIGNS CONFORMING TO CITY ORDINANCE No. 55. BLUE DOT FIRE HYDRANT VALVES SHALL BE INSTALLED PER CITY STANDARD.
3. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE RIVERSIDE COUNTY ROAD DEPARTMENT IMPROVEMENT STANDARDS AND SPECIFICATIONS, DATED 1982, COUNTY ORDINANCE No. 461 AND SUBSEQUENT AMENDMENTS AS ADOPTED BY CITY OF MORENO VALLEY BY Ord. No.1.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER TO INSTALL STREET CENTERLINE MONUMENTS AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 461.
5. ALL UNDERGROUND FACILITIES, INCLUDING LATERALS, SHALL BE IN PLACE PRIOR TO PAVING. THE STREET SECTION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: SEWER, WATER, ELECTRIC, GAS, DRAINAGE.
6. CURB DEPRESSIONS AND DRIVEWAY APPROACHES WILL BE INSTALLED AND CONSTRUCTED ACCORDING TO COUNTY STANDARD No. 206 AND/OR No. 207, AS DIRECTED IN THE FIELD.
7. ALL STREET SECTIONS ARE TENTATIVE. ADDITIONAL SOIL TEST SHALL BE TAKEN AFTER ROUGH GRADING TO DETERMINE THE EXACT STREET SECTION REQUIREMENTS. USE STANDARD No. 401 IF EXPANSIVE SOILS ARE ENCOUNTERED.
8. ASPHALTIC EMULSION (FOG SEAL) SHALL BE APPLIED NOT LESS THAN FOURTEEN DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING AND SHALL BE APPLIED AT A RATE OF 0.05 GALLON PER SQUARE YARD. ASPHALTIC EMULSION SHALL CONFORM TO SECTIONS 37, 39 AND 94 OF THE STATE STANDARD SPECIFICATIONS.
9. ALL BACKFILL TO BE 90% RELATIVE COMPACTION UNLESS OTHERWISE SPECIFIED AND SHALL BE CERTIFIED BY THE CITY'S SOILS ENGINEER PRIOR TO PAVING. RETESTING SHALL BE AT THE DEVELOPER' EXPENSE.
10. INSTALL STREET TREES IN ACCORDANCE WITH ORDINANCE No. 460.53.
11. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR TO APPLY TO THE CITY OF MORENO VALLEY ENGINEERING DEPARTMENT PERMIT SECTION FOR AN ENCROACHMENT PERMIT FOR ALL WORK ON EXISTING CITY MAINTAINED ROADS, AND FOR UTILITY WORK WITHIN OFFERS OF DEDICATION FOR PUBLIC USE.
12. CITY APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DEVELOPER FROM RESPONSIBILITY FOR THE CORRECTION OF ERROR & OMISSION DISCOVERED DURING CONSTRUCTION. UPON REQUEST, THE REQUIRED PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
13. PRIME COAT REQUIRED PRIOR TO PAVING ALL GRADES IN EXCESS OF TEN PERCENT.
14. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION,1985 EDITION, INCLUDING SUPPLEMENTS, EXCEPT AS OTHERWISE NOTED ON THE PROJECT PLANS.
15. THE EXACT THICKNESS OF ANY ASPHALT OVERLAY SHALL BE DETERMINED BY A COMBINATION OF SOILS TESTING FOR STRUCTURAL SOUNDNESS OF THE EXISTING ROADWAY SECTION, CONFORMANCE WITH SECTION 8 (EARTHWORK) OF THE RIVERSIDE COUNTY ROAD IMPROVEMENT STANDARDS AND SPECIFICATIONS, CONFORMANCE TO THE LATEST TRAFFIC INDEX RATING AND TO THE DIRECTION OF THE CITY ENGINEER FOR REMOVAL OR REPAIR OF UNSUITABLE PAVED SECTIONS.PAVEMENT AREAS WHICH HAVE BEEN DETERMINED TO BE UNSUITABLE FOR OVERLAY DUE TO CRACKING, SUBSIDENCE, IRREGULAR SURFACE, AGE, MATERIAL COMPOSITION, OR WATER DAMAGE, SHALL BE REPAIRED AT THE DIRECTION OF THE CITY ENGINEER. THE CIVIL ENGINEER SHALL REVISE THE STREET IMPROVEMENT PLANS IN THE AFFECTED AREA UPON NOTIFICATION BY THE CONTRACTOR OR THE CITY ENGINEER.
16. ALL SIGNING, STRIPING, PAVEMENT MARKINGS AND RAISED PAVEMENT MARKER INSTALLATION SHALL CONFORM TO APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS AND STANDARD PLANS OF THE STATE OF CALIFORNIA (CALTRANS) AND THESE PLANS AND SPECIAL PROVISIONS.

CAST-IN-PLACE-PIPE RECOMMENDATIONS

1. FOR QUALITY CONTROL DURING PLACEMENT, EMPLOY AN EXPERIENCED R.C.E. OR TECHNICIAN HAVING SUITABLE CIPP EXPERIENCE.
2. CONTROL CONCRETE BY MEANS OF 6" x 12" TEST CYLINDERS-MIN. OR 1 SET, OF FOUR (4) CYLINDERS/100 C.Y. AND NOT LESS THAN TWO (2) SETS CYLINDERS PER EACH DAYS POUR.
3. SUPPLYING BATCH PLANT SHALL BE INSPECTED AT THE START OF CONSTRUCTION AND NOT LESS THAN ONCE EACH WEEK THEREAFTER TO OBSERVE PLANT OPERATIONS, BATCH WEIGHTS, & OTHER CONCRETE CONTROL MEASURES.
4. CONCRETE MIXES SHALL NOT HAVE LESS THAN SIX (6) SACKS OF PORTLAND CEMENT / CU. YD. & SHALL CONTAIN AIR ENTRAINMENT & WATER REDUCING ADMIXTURES.
5. CONCRETE MIX DESIGNS SHALL BE SUBMITTED BY CONTRACTOR FOR APPROVAL PRIOR TO START OF CONSTRUCTION.
6. IF & WHEN FLOW VELOCITY EXCEEDS 10 F.P.S. A 140° SEGMENT OF THE CIPP INVERT SHALL BE THICKENED 2 INCHES IN WALL THICKNESS AS "SACRIFICIAL CONCRETE" TO RESIST ABRASION.
7. MAXIMUM PERMISSIBLE CONCRETE SLUMP SHALL BE 2-1/2" 1-1/2" MIN. TO 2-1/2" MAX.
8. CONTRACTOR SHALL ALLOW INSPECTOR INTO PIPE WHILE UNDER CONSTRUCTION & "ROD" FOR WALL THICKNESS AT A MIN. OF 25 C.Y. OF THE POUR.
9. AT THE END OF ALL POURS AND AT THE END OF EACH WORKING DAY THE CONTRACTOR SHALL INSTALL #4 DOWELS [illegible] 12" INTO THE LAST POUR AT 12" CENTERS AROUND CIRCUMFERENCE OF CAST-IN-PLACE PIPE.

FILTER BLANKET GRADATION	
SIZE	PERCENT PASSING BY WEIGHT
2½"	[illegible]
1½"	55 - 90
⅜"	40 - 80
#4	10 - 20
#200	0 - 5

PRIVATE ENGINEERING NOTE
(NOT REQUIRED BY GOVERNING AGENCY)

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF DESIGN PROFESSIONAL.

DEVELOPER/OWNER

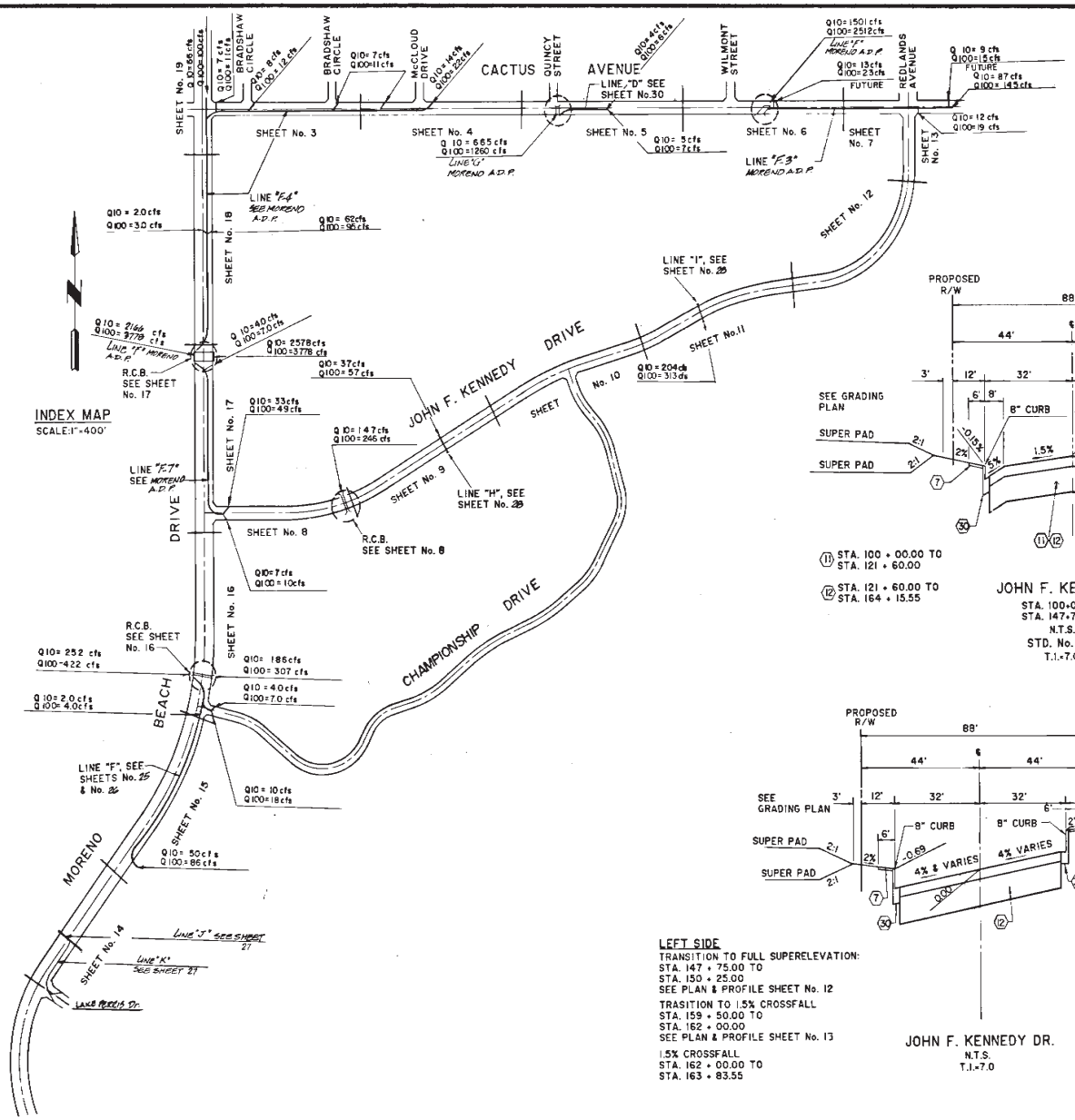
LANDMARK LAND COMPANY OF CALIFORNIA, INC.
P.O. BOX 1138
MORENO VALLEY CA. 92382
(714) 247 - 6202
(714) 795 - 8941

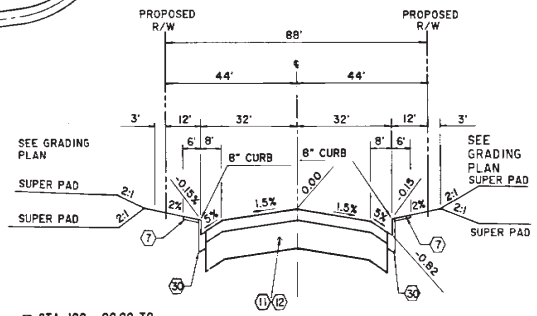
UTILITY AGENCIES	TELEPHONE NUMBERS
SOUTHERN CALIFORNIA GAS CO.	(800) 422 - 4133
SOUTHERN CALIFORNIA EDISON CO.	(714) 686 - 6153
EASTERN MUNICIPAL WATER DIST. (SEWER & WATER)	(714) 925 - 7676
GENERAL TELEPHONE	(800) 422 - 4133
UNDERGROUND SERVICE ALERT	(800) 422 - 4133

R.C.E. 12977 3-30-89 DATE 6/2/87 APPROVED BY TIM D. SERLET		AS SHOWN	RIVERSIDE COUNTY BENCH MARK M-33 RESET 184' EASTERLY OF PERRIS BLVD. AND 1' NORTHERLY OF CENTERLINE OF CACTUS AVE. DATED 4-16-87

CITY OF MORENO VALLEY
STREET IMPROVEMENT PLANS
TITLE SHEET

SHEET 1 OF 2



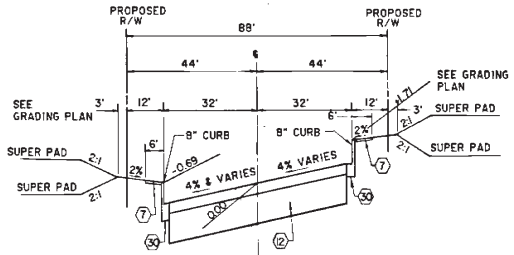


(11) STA. 100 + 00.00 TO STA. 121 + 60.00

(12) STA. 121 + 60.00 TO STA. 164 + 15.55

JOHN F. KENNEDY DR.
STA. 100+00.00 TO
STA. 147+75.00
N.T.S.
STD. No. 102
T.I.=7.0

SEE SHEET No.2 FOR STREET CONST. NOTES



LEFT SIDE
TRANSITION TO FULL SUPERELEVATION:
STA. 147 + 75.00 TO
STA. 150 + 25.00
SEE PLAN & PROFILE SHEET No. 12

TRASITION TO 1.5% CROSSFALL
STA. 159 + 50.00 TO
STA. 162 + 00.00
SEE PLAN & PROFILE SHEET No. 13

1.5% CROSSFALL
STA. 162 + 00.00 TO
STA. 163 + 83.55

JOHN F. KENNEDY DR.
N.T.S.
T.I.=7.0

RIGHT SIDE
TRANSITION TO FULL SUPERELEV.
STA. 147 + 75.00 TO
STA. 150 + 25.00
SEE PLAN & PROFILE SHEET No.12
FULL SUPERELEV. (4% CROSSFALL) (LEFT AND RIGHT)
STA. 150 + 25.00 TO
STA. 159 + 50.00
TRANSITION TO 1% CROSSFALL
STA. 159 + 50.00 TO
STA. 163 + 83.55
SEE PLAN & PROFILE SHEET No.13

SEE SHEET No.2 FOR STREET CONST. NOTES

CONSTRUCTION NOTES & ESTIMATED QUANTITIES

No.	ITEM DESCRIPTION	ITEM	DESCRIPTION
	STORM DRAIN QUANTITIES		
(60)	~~CONSTRUCT 4'H x 10'W R.C.B. PER PLAN AND PER CALTRANS STD. D80.~~		L.F.
(61)	~~CONSTRUCT 4'H x 5'W R.C.B. PER PLAN AND PER CALTRANS STD.D80.~~		L.F.
(62)	~~CONSTRUCT TRANSITION STRUCTURE PER R.C.F.C. DIST. STD.No.TS302.~~		EA.
(63)	~~CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. JS226 A=30°00'00" B=48" C=15.8', STATION POINT =17+89.66 & 6.0'.~~		EA.
(64)	~~CONSTRUCT 54" C.I.P.P. PER PLAN.~~		L.F.
(65)	~~CONSTRUCT MANHOLE PER R.C.F.C. DIST. - STD. MH253.~~		EA.
(66)	~~CONSTRUCT MANHOLE WITH TRANSITION STRUCTURE PER R.C.F.C. STD. No. MH252 AND TS301.~~		EA.
(67)	CONSTRUCT CATCH BASIN PER R.C.F.C. DIST. STD. No.CB100. AND LOCAL DEPRESSION PER RCFC STD. No LD 201.	7	EA.
(68)	~~CONSTRUCT UNDERDRAIN PER RIV CO. STD OR EQUIVALENT~~	1	EA.
(69)	~~CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. JS226 A= 76°33'49" B=18" C=4.6' STATION POINT = 17+89.66 6.0'.~~	~~1~~	EA.
(70)	~~CONSTRUCT 38.71 L.F. OF 18" R.C.P. ID-2000 CONNECTOR PIPE. SEE PROFILE ON SHEET No. 27.~~	~~39~~	L.F.
(71)	CONSTRUCT CONC. BULKHEAD PER R.C.F.C. DIST. STD. No. MB16	1	EA.
(72)	CONSTRUCT MANHOLE PER R.C.F.C DIST. STD. 254.	1	EA.
(73)	CONSTRUCT 48" C.I.P.P. PER PLAN. (ADD 2" TO INVERT)	153	L.F.
(74)	CONSTRUCT MANHOLE PER R.C.F.C. DIST. STD. No. M.H. 252.	4	EA.
(75)	CONSTRUCT 36" C.I.P.P. PER PLAN. (ADD 2" TO INVERT)	1610	L.F.
(76)	CONSTRUCT HEADWALL PER CALTRANS STD D89.	5	EA
(77)	CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. JS227.	4	EA.
(78)	~~CONSTRUCT 57.46 L.F. OF 18" R.C.P. (D-2000) PER PLAN AND PROFILE HEREON.~~	~~58~~	L.F.
(79)	CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. JS229	1	EA.
(80)	~~CONSTRUCT 42" C.I.P.P. PER PLAN~~	~~390~~	L.F.
(81)	CONSTRUCT 30" C.I.P.P. PER PLAN OR R.C.P. (D-1250).	345	L.F.
(82)	~~CONSTRUCT TYPE IX INLET V=4.6' AND 51.38 L.F. OF 24" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE ON SHEET No. 29.~~	~~1~~	EA.
(83)	CONSTRUCT DOUBLE TYPE IX INLET V= 5.0' AND 52.00 L.F. OF 24" RCP (D-2000), AND 3.00' L.F. OF 21" C.M.P. CONNECTOR PIPE. SEE PROFILE ON SHEET No. 8	1	EA.
(84)	~~CONSTRUCT TYPE IX INLET V=4.6' AND 51.90 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE ON SHEET No. 29.~~	~~1~~	EA.
(85)	~~CONSTRUCT WARPED A.C. PAVED INLET PER DETAIL. SEE SHEET No.29.~~	~~6~~	EA.
(86)	~~CONSTRUCT TYPE IX INLET V=4.6' & 5.18 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE HEREON.~~	~~2~~	EA
(87)	~~CONSTRUCT TYPE IX INLET V=6.05.~~	~~1~~	EA.
(88)	~~CONSTRUCT 24" C.I.P.P. OR R.C.P. PER PLAN.~~	~~281~~	L.F.
(89)	CONSTRUCT 24" R.C.P. PER PLAN, OR C.I.P.P. PER PLAN.	530	L.F.
(90)	~~CONSTRUCT 23.26 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE HEREON.~~	~~1~~	EA.
(91)	~~CONSTRUCT 34.25 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE HEREON.~~	~~1~~	EA.
(92)	CONSTRUCT MANHOLE PER R.C.F.C. DISTRICT STD. No. MH251.	2	EA.
(93)	~~CONSTRUCT 64.41 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE HEREON.~~	~~1~~	EA.
(94)	~~CONSTRUCT 36" R.C.P. (1200-D) OR C.I.P.P. PER PLAN.~~	~~120~~	L.F.
(95)	CONSTRUCT 54" R.C.P. (1200-D) OR C.I.P.P. PER PLAN	260	L.F.
(96)	CONSTRUCT DOUBLE HEADWALL PER CALTRANS STD. D89.	2	EA
(97)	CONSTRUCT LIGHT CLASS RIP-RAP AS SHOWN.	40	TONS
(98)	CONSTRUCT 18" R.C.P. (2000-D).	263	L.F.
(99)	~~CONSTRUCT TYPE "B" WINGWALL PER CALTRANS STD. D84, L=14.5'H=5.7'~~	~~1~~	EA.
(100)	~~CONSTRUCT 36" R.C.P. (D-2000) PER PLAN.~~	~~41~~	L.F.
(101)	~~CONSTRUCT 27.66 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE. SEE PROFILE HEREON.~~	~~1~~	EA.
(102)	CONSTRUCT TRANSITION STRUCTURE PER R.C.F.C. DIST. STD. TS303 D=36', D=48", L=8.0'.	1	EA.
(103)	CONSTRUCT INLET DEBRIS COLLECTOR PER DETAIL ON SHEET 24	3	EA
(104)	CONSTRUCT TRANSITION STRUCTURE NO.3 PER RCFC STD TS 303 L=10' D=24" D=48"	1	EA.
(105)	~~CONSTRUCT JUNCTION STRUCTURE PER RCFC DIST STD. NO. JS226 A=C7°18'00", B=24", C=42", D=42", E=2.4', F=4.4', G=4.2', L=3.2'~~	~~1~~	EA.
(106)	~~CONSTRUCT JUNCTION STRUCTURE PER RCFC DIST STD. NO. JS226 A=60°00'00", B=24", C=4.1', D=42", E=2.9', F=1.6', G=1.3', L=3.4'~~	~~1~~	EA.
(107)	~~CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. NO. JS226 A=60°00'00", B=18", C=4.1', D=36", E=2.3', F=1.4', G=1.2', L=2.6'~~	~~1~~	EA.
(108)	~~CONSTRUCT JUNCTION STRUCTURE PER RCFC DIST. STD. NO. JS226 A=60°00'00", B=18", C=3.6', D=30", E=2.2', F=1.9', G=1.6', L=2.6'~~	~~1~~	EA.
(109)	~~CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. JS229~~	~~1~~	EA.
(110)	CONSTRUCT 6' WIDE, 4" THICK CONCRETE "V" DITCH.	82	L.F.
(111)	~~CONSTRUCT CONCRETE BLANKET PER R.C.F.C. DIST. STD. M903.~~	~~6~~	L.F.
(112)	PLACE FILTER BLANKET PER GRADATION TABLE (SHT 1).	58	C.Y.

PREPARED UNDER THE DIRECTION OF
REGISTERED CIVIL ENGINEER NO. 12977
EXPIRATION DATE 3-30-89 DATE
APPROVED BY
TIM D. SERLET
RCE 28738 EXP 9-30-90

J. F. DAVIDSON ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
P.O. BOX 493, RIVERSIDE, CA 92502, (714) 686-0844
11200 SO. MT. VERNON AVE., #D, COLTON, CA 92324, (714) 825-1082
73-080 EL PASEO, #103, PALM DESERT, CA 92260, (619) 346-3691

SCALE: AS SHOWN
BENCH MARK: SEE SHEET No. 1
DATE

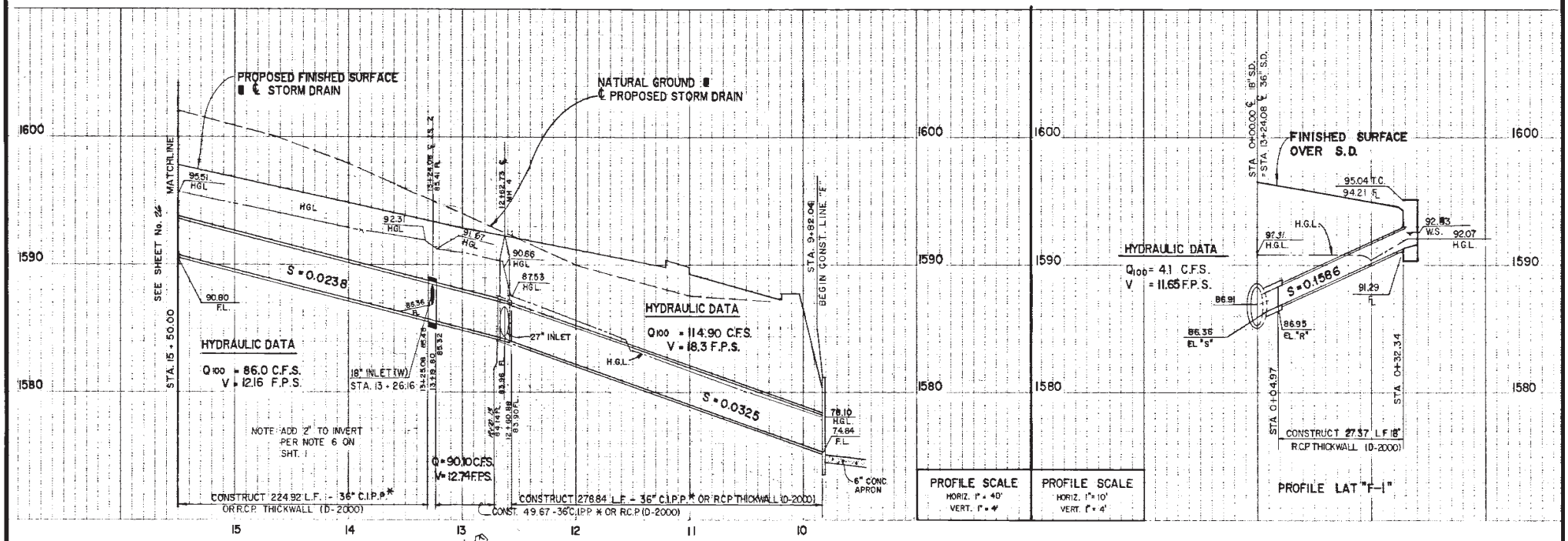
CITY OF MORENO VALLEY
TYPICAL CROSS SECTIONS
INDEX SHEET

RE NO. 870

Packet Pg. 826

2.b

Attachment: Exhibit A - Initial Study Addendum [Revision 1] (4294 : PEN20-0060 Plot Plan)



STA. 12+62.73 ℄ LINE "F" — STA. 13+24.08 ℄ LINE "F"

MH # 4 DATA		J.S. NO. 2 DATA	
A	51° 43' 56"	A	45° 38' 42"
B	27"	B	18"
C	5.1'	C	5.00'
D	36"	D	36"
E	3.4'	E	3.28'
F	.53	F	1.49'
G	45	G	1.28'
L	9.25	G	3.15'
R	1584.80	R	86.95'
S	1584.44	S	86.36'

NOTE: SEE CHAMPIONSHIP DRIVE STREET PLANS SHEET 9

CONSTRUCTION NOTES:

(47) CONSTRUCT CATCH BASIN PER R.C.F.C. DIST. STD. No. CB 100. AND LOCAL DEPRESSION PER R.C.F.C. STD. No. LD 201

(54) CONSTRUCT MANHOLE PER R.C.F.C. DIST. STD. MH. 252.

(55) CONSTRUCT 36" C.I.P.P. PER PLAN. ADD 2" TO INVERT SEE NOTE NO. 6 ON SHEET NO. 1.

(57) CONSTRUCT JUNCTION STRUCTURE PER R.C.F.C. DIST. STD. No. J-S 227

(72) CONSTRUCT 27.66 L.F. OF 18" R.C.P. (D-2000) CONNECTOR PIPE SEE PROFILE HEREON.

NOTE: FOR STORM DRAIN DETAILS AT THIS INT. SEE CHAMPIONSHIP DR. STORM DRAIN PLANS & ST. PLANS SHEET 2

(68) CONSTRUCT MANHOLE NO. 4 PER R.C.F.C. DIST. STD. NO. MH 254.

PREPARED UNDER THE DIRECTION OF
REGISTERED CIVIL ENGINEER NO. 12977
EXPIRATION DATE 3-30-89 DATE 12/1/87
APPROVED BY
TIM D. BEECE RCE 28738 EXP 9-30-90 / /

J. F. DAVIDSON ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
P.O. BOX 493, RIVERSIDE, CA 92502 (714) 686-0644
11200 SO. MT. VERNON AVE., #D, COLTON, CA 92324 (714) 825-1082
73-900 EL PASEO, #103, PALM DESERT, CA 92260 (619) 346-5691

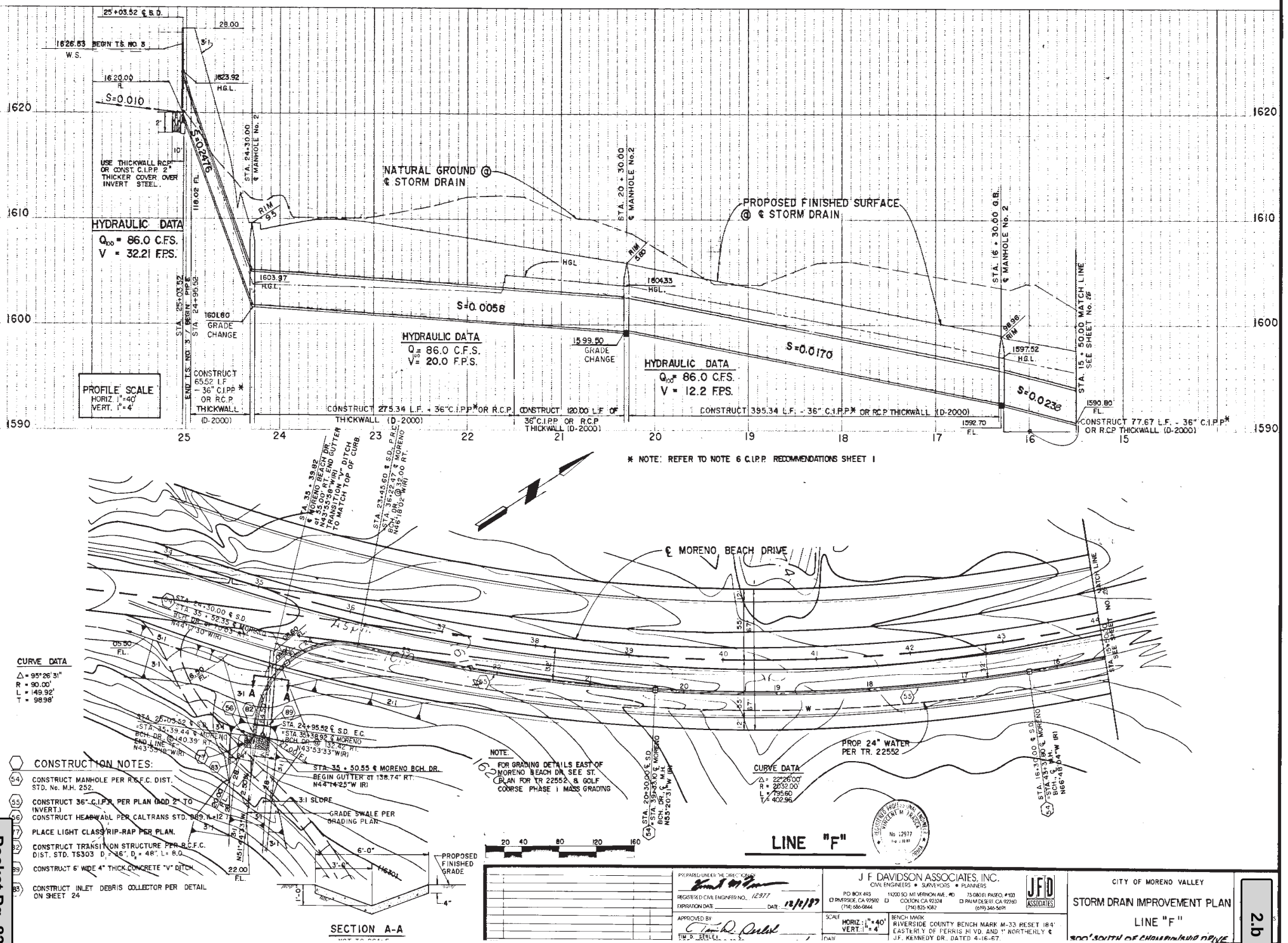
SCALE HORIZ.: 1" = 40' VERT.: 1" = 4'
DATE
BENCH MARK: RIVERSIDE COUNTY BENCH MARK M-33 RESET 18" EASTERLY OF PERRIS BLVD. AND 1' NORTHERLY ℄ J.F. KENNEDY DR., DATED 4-16-67.

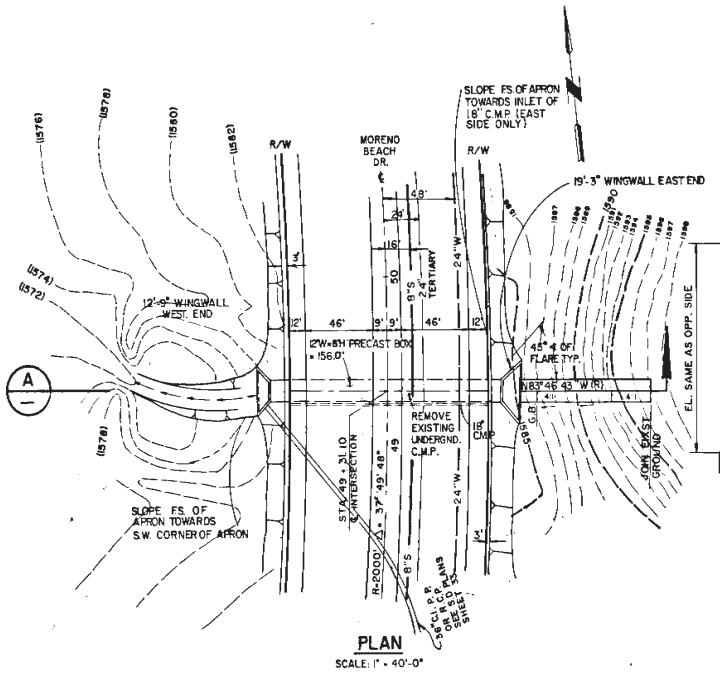
CITY OF MORENO VALLEY
STORM DRAIN IMPROVEMENT PLAN
LINE "F"
MORENO BEACH @ CHAMPIONSHIP DR.
FILE NO. 87-

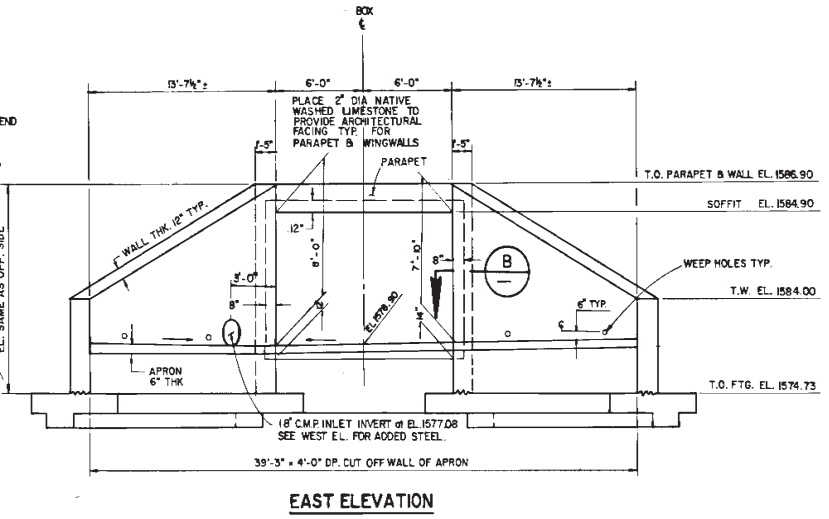
REGISTERED PROFESSIONAL ENGINEER VINCENT M. TRACEY No. 12977 Exp. 3-31-89 CIVIL STATE OF CALIFORNIA

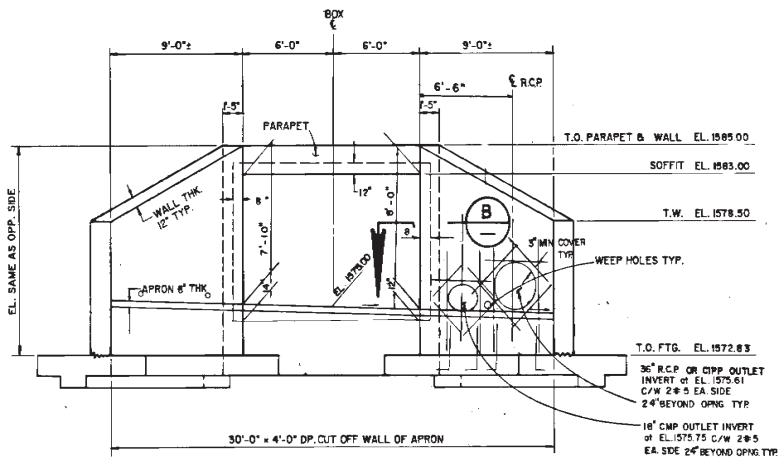
2.b

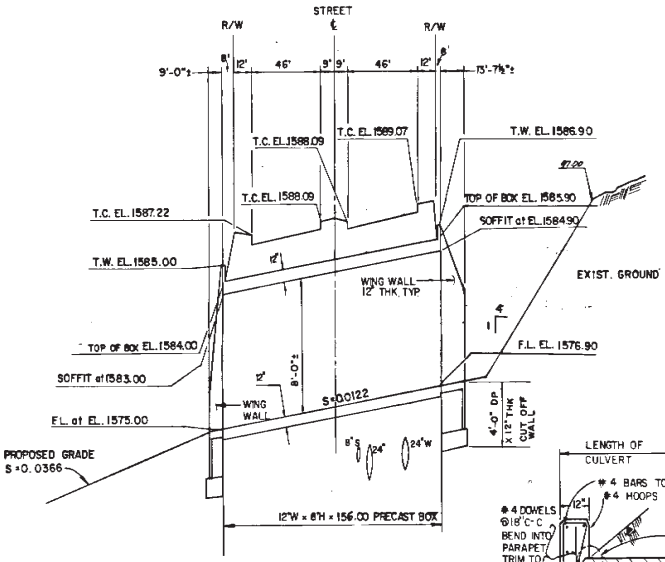
Packet Pg. 827

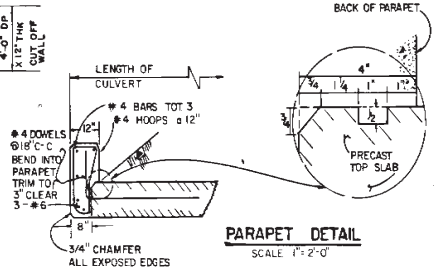

25+03.52 ℄ S.D.
28.00
1626.63 BEGIN T.S. NO. 3
W.S.
16 20.00 FL
1623.92 H.G.L.
S=0.010
USE THICKWALL R.C.P. OR CONST. C.I.P.P. 2" THICKER COVER OVER INVERT STEEL.
S=0.2416
STA. 24+30.00 ℄ MANIHOLE No. 2
NATURAL GROUND @ ℄ STORM DRAIN
PROPOSED FINISHED SURFACE @ ℄ STORM DRAIN
STA. 20 + 30.00 ℄ MANHOLE No.2
STA. 16 + 30.00 ℄ MANHOLE No. 2
STA. 15 + 50.00 MATCH LINE SEE SHEET No. 26
RIM 595
RIM 580
RIM 598
HGL
1603.97 H.G.L.
1604.33 HGL
1597.52 H.G.L.
1610
1620
1600
1590
HYDRAULIC DATA
Q₁₀₀ = 86.0 C.F.S.
V = 32.21 F.P.S.
S=0.0058
1601.80 GRADE CHANGE
HYDRAULIC DATA
Q₁₀₀ = 86.0 C.F.S.
V = 20.0 F.P.S.
1599.50 GRADE CHANGE
S=0.0170
HYDRAULIC DATA
Q₁₀₀ = 86.0 C.F.S.
V = 12.2 F.P.S.
S=0.0238
1590.80 FL.
1592.70 FL.
PROFILE SCALE
HORIZ. 1"=40'
VERT. 1"=4'
CONSTRUCT 65.52 L.F. - 36" C.I.P.P. * OR R.C.P. THICKWALL (D-2000)
CONSTRUCT 275.34 L.F. - 36" C.I.P.P.* OR R.C.P. THICKWALL (D-2000)
CONSTRUCT 120.00 L.F. OF 36" C.I.P.P. OR R.C.P. THICKWALL (D-2000)
CONSTRUCT 395.34 L.F. - 36" C.I.P.P.* OR R.C.P. THICKWALL (D-2000)
CONSTRUCT 77.67 L.F. - 36" C.I.P.P.* OR R.C.P. THICKWALL (D-2000)
25 24 23 22 21 20 19 18 17 16 15
* NOTE: REFER TO NOTE 6 C.I.P.P. RECOMMENDATIONS SHEET 1
℄ MORENO BEACH DRIVE
CURVE DATA
Δ = 95°26'31"
R = 90.00'
L = 149.92'
T = 98.98'
CONSTRUCTION NOTES:
(54) CONSTRUCT MANHOLE PER R.C.F.C. DIST. STD. No. M.H. 252.
(55) CONSTRUCT 36" C.I.P.P. PER PLAN (ADD 2' TO INVERT.)
(56) CONSTRUCT HEADWALL PER CALTRANS STD. B69.1-12
(77) PLACE LIGHT CLASS RIP-RAP PER PLAN.
(82) CONSTRUCT TRANSITION STRUCTURE PER R.C.F.C. DIST. STD. TS303 D₁ = 46", D₂ = 48", L = 8.0
(89) CONSTRUCT 6' WIDE 4" THICK CONCRETE "V" DITCH
(83) CONSTRUCT INLET DEBRIS COLLECTOR PER DETAIL ON SHEET 24
NOTE FOR GRADING DETAILS EAST OF MORENO BEACH DR. SEE ST. PLAN FOR TR 22552 & GOLF COURSE PHASE I MASS GRADING
CURVE DATA
Δ = 22°26'00"
R = 2932.00'
L = 795.60
T = 402.96
PROP. 24" WATER PER TR. 22552
3:1 SLOPE
GRADE SWALE PER GRADING PLAN
PROPOSED FINISHED GRADE
6'-0"
3'-6"
1'-0"
4"
22.00 FL.
SECTION A-A
20 40 80 120 160
LINE "F"
PREPARED UNDER THE DIRECTION OF
REGISTERED CIVIL ENGINEER NO. 12977
EXPIRATION DATE
DATE: 12/9/87
APPROVED BY
TIM D. SERLET
DATE
J. F. DAVIDSON ASSOCIATES, INC.
CIVIL ENGINEERS • SURVEYORS • PLANNERS
P.O. BOX 493 RIVERSIDE, CA 92502 (714) 686-0844
11200 SO. MT. VERNON AVE., #D COLTON, CA 92324 (714) 825-1082
73-080 EL PASEO, #103 PALM DESERT, CA 92260 (619) 346-5691
JFD ASSOCIATES
SCALE HORIZ. 1"=40' VERT. 1"=4'
BENCH MARK
RIVERSIDE COUNTY BENCH MARK M-33 RESET 184' EASTERLY OF PERRIS BLVD. AND 1' NORTHERLY ℄ J.F. KENNEDY DR. DATED 4-16-67.
CITY OF MORENO VALLEY
STORM DRAIN IMPROVEMENT PLAN
LINE "F"
500' SOUTH OF CHAMPIONSHIP DRIVE
FILE NO. 87

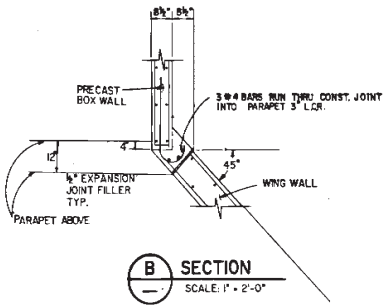












GENERAL NOTES:

1. ALL CONSTRUCTION TO BE FULLY COMPLIED WITH THE STANDARD SPECIFICATIONS AND STANDARD PLANS JULY 1984 CALTRANS.
2. ALL CONSTRUCTION TO BE IN CONFORMANCE WITH THE REGULATIONS OF CAL-OSHA.
3. REINFORCED CONCRETE BOX CULVERT TO BE SINGLE 12'(W) × 8'(H) R.C.B. WITH "FLAT INVERT" PER PLANS & CALCULATIONS, SUBMITTED BY ASSOCIATED CONCRETE SECTION (B) & (A) FOR DIMENSIONING ONLY.
4. PARAPETS TO BE CONSTRUCTED PER PLANS
5. WING WALLS TO BE PER CALTRANS STANDARD PLAN No. D84 TYPE A.
6. WING WALL HEIGHT "H" AND TOP OF FOOTING ELEVATION "a" (CALTRANS STANDARD No. D84) ARE SHOWN IN SECTIONS (B) & (C).
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING OF PROPOSED WORK AREA, AND RELOCATION COST OF ALL EXISTING UTILITIES. PERMITTEE MUST INFORM CITY OF CONSTRUCTION SCHEDULE AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION AT TELEPHONE No. (714) 242-8248.
8. ALL BACKFILL TO BE 90 % RELATIVE COMPACTION UNLESS OTHERWISE SPECIFIED AND SHALL BE CERTIFIED BY CITY'S SOIL ENGINEER PRIOR TO PAVING. RETESTING SHALL BE AT DEVELOPER'S EXPENSE.
9. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR CONTRACTOR TO APPLY TO THE CITY OF MORENO VALLEY ENGINEERING DEPARTMENT PERMIT SECTION FOR THE ENCROACHMENT PERMIT FOR ALL WORK ON EXISTING CITY MAINTAINED ROADS, AND FOR UTILITIES WITHIN OFFERS OR DEDICATION FOR PUBLIC USE.
10. 6" THICK CONCRETE APRONS TO BE CONSTRUCTED AS PER CALTRANS STANDARD PLAN No. D86-A.

ESTIMATED QUANTITIES

ITEM	DESCRIPTION	QUANTITY	UNIT
1.	CONSTRUCT (1) 12'×8' BOX PER PLAN BY ASSOC. CONC.	156.00	L.F.
2.	CONSTRUCT PARAPET PER DETAIL HEREON	30.00	L.F.
3.	CONSTRUCT 4'×12" THICK CUT OFF WALL PER STD. PLAN D86-A.	70.00	L.F.
4.	CONSTRUCT BOX CULVERT WING WALL PER STD. PLAN D84 TYPE A.	64.00	L.F.
5.	CONSTRUCT 6" THICK P.C.C. APRON PER STD. PLAN No. D86-A.	275.00	L.F.

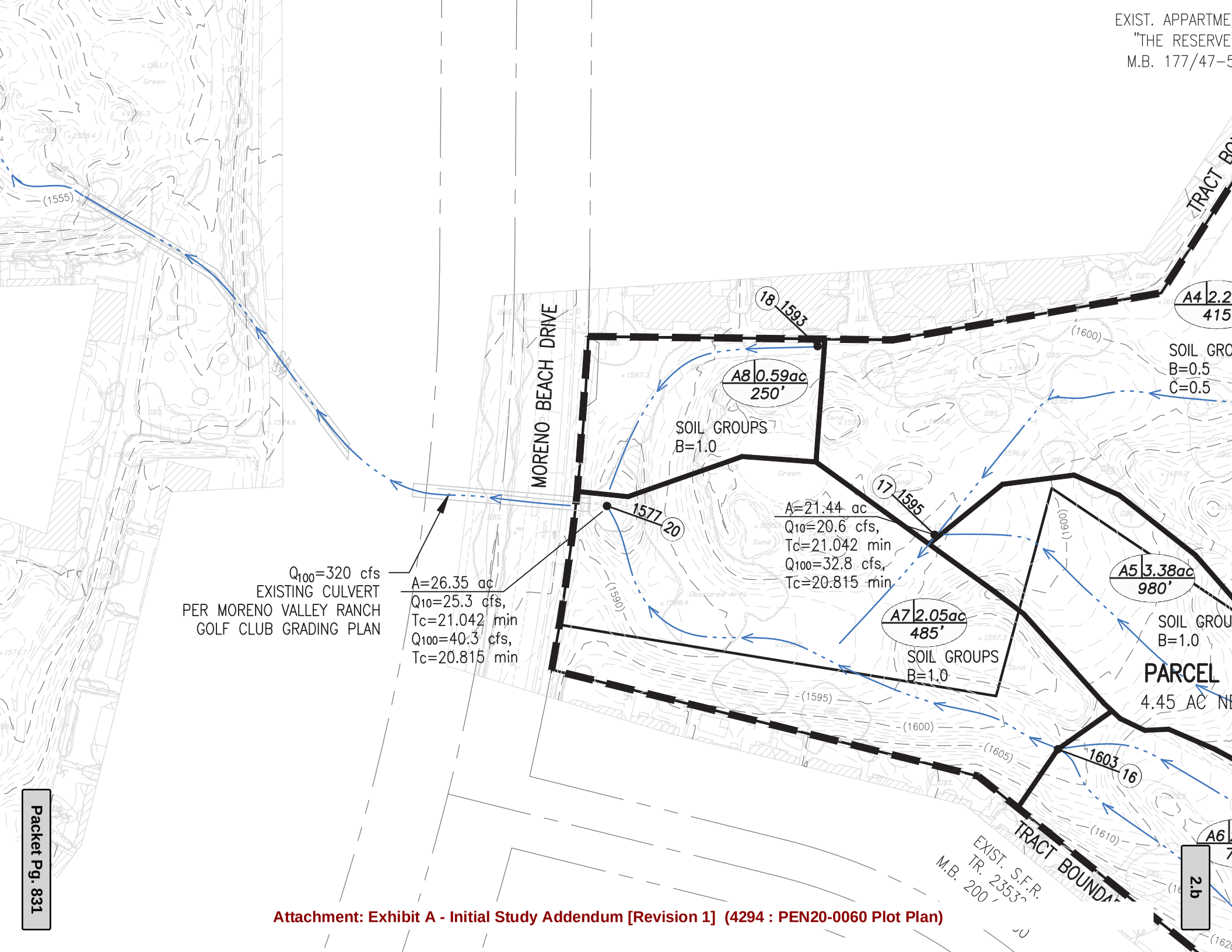
PREPARED UNDER THE DIRECTION OF
REGISTERED CIVIL ENGINEER NO. 19156
EXPIRATION DATE 9-30-89 DATE
APPROVED BY
CITY ENGINEER DATE

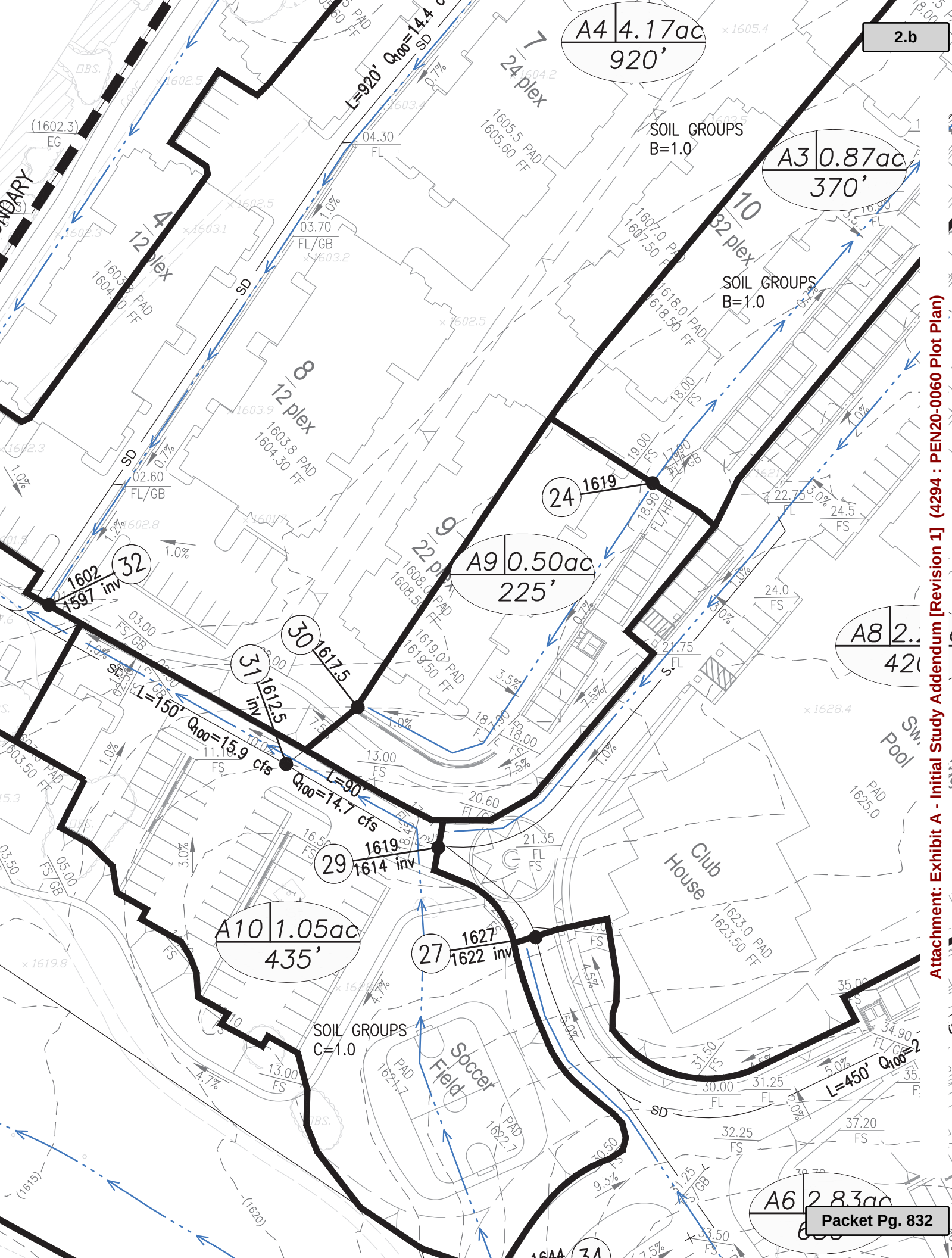
J. F. DAVIDSON ASSOCIATES, INC.
CIVIL ENGINEERS ◆ SURVEYORS ◆ PLANNERS
P.O. BOX 493, RIVERSIDE, CA 92502 (714) 686-0844
11200 SO. MT. VERNON AVE. #D, COLTON, CA 92324 (714) 825-1062
73-080 EL PASEO #103, PALM DESERT, CA 92260 (619) 340-5691

SCALE: AS SHOWN
DATE:
BENCH MARK: RIVERSIDE COUNTY BENCH MARK M-33 RESET 184' EASTERLY OF PERRIS BLVD. AND 1' NORTHERLY OF ℄ J.F. KENNEDY DR. DATED 4-16-67.

CITY OF MORENO VALLEY
STRUCTURAL PLAN FOR
MORENO BEACH DRIVE
GOLF UNDERCROSSING
STATION 49 + 31.10

ATTACHED EXHIBITS


EXIST. APPARTME
"THE RESERVE
M.B. 177/47-5
TRACT BO
MORENO BEACH DRIVE
18
1593
A8 0.59ac
250'
SOIL GROUPS
B=1.0
A4 2.2
415
SOIL GRO
B=0.5
C=0.5
17
1595
A=21.44 ac
Q10=20.6 cfs,
Tc=21.042 min
Q100=32.8 cfs,
Tc=20.815 min
1577
20
Q100=320 cfs
EXISTING CULVERT
PER MORENO VALLEY RANCH
GOLF CLUB GRADING PLAN
A=26.35 ac
Q10=25.3 cfs,
Tc=21.042 min
Q100=40.3 cfs,
Tc=20.815 min
A5 3.38ac
980'
SOIL GROU
B=1.0
A7 2.05ac
485'
SOIL GROUPS
B=1.0
PARCEL
4.45 AC NE
1603
16
TRACT BOUNDA
EXIST. S.F.R.
TR. 2353
M.B. 200
A6
(1555)
(1600)
(1590)
(1595)
(1605)
(1610)



APPENDIX G

LOR GEOTECHNICAL GROUP, INC.
Soil Engineering ▲ Geology ▲ Environmental

PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED APARTMENT COMPLEX
MORENO VALLEY RANCH GOLF COURSE
128905 JOHN F. KENNEDY DRIVE
MORENO VALLEY, CALIFORNIA

PROJECT NO. 33289.1
FEBRUARY 21, 2017

Prepared For:

ROC III CA Belago, LLC.
c/o Bridge Investment Group Holdings
2611 South Coast Highway, 101, Suite 205
Cardiff, California 92007

Attention:Mr. Eric Heffner

LOR GEOTECHNICAL GROUP, INC.
Soil Engineering ▲ Geology ▲ Environmental

February 21, 2017

ROC III CA Belago, LLC
c/o Bridge Investment Group Holdings
2611 South Coast Highway, 101, Suite 205
Cardiff, California 92007

Project No. 32289.1

Attention: Mr. Eric Heffner

Subject: Preliminary Geotechnical Investigation, Proposed Apartment Complex, Moreno Valley Ranch Golf Course, 28905 John F. Kennedy Drive, Moreno Valley, California.

LOR Geotechnical Group, Inc. is pleased to present this report summarizing our geotechnical investigation for the proposed multi-family residential structures and associated improvements to be located within the existing driving range of the Moreno Valley Ranch Golf Course in the City of Moreno Valley.

In summary, it is our opinion that the site can be developed from a geotechnical perspective, provided the recommendations presented in the attached report are incorporated into design and construction. The following executive summary reviews some of the important elements of the project, however, this summary should not be solely relied upon.

To provide adequate support for the proposed structures, we recommend that a compacted fill mat be constructed beneath footings and slabs. The compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils and/or bedrock materials. Any undocumented fill material and all loose alluvial and weathered bedrock materials should be removed from areas to receive engineered compacted fill. Bedrock materials were encountered at various depths within most of our explorations. The data developed during this investigation indicates that removals of approximately 2 to 7 feet below existing grades, and deeper locally, within currently planned structural areas.

The on-site soils were tested and found to have a very low expansion potential. Soluble sulfate content testing of the on-site soils found them to have negligible soluble sulfate content. The on-site soils were found to have poor R-value quality. Infiltration testing found favorable infiltration characterstics.

LOR Geotechnical Group, Inc.

TABLE OF CONTENTS

TABLE OF CONTENTS

INTRODUCTION

During August of 2016 through February of 2017, a Preliminary Geotechnical Investigation was performed by LOR Geotechnical Group, Inc. for the proposed apartment complex to be located within the existing Moreno Valley Ranch Golf Course driving range, 28905 John F. Kennedy Drive in the City of Moreno Valley, California. The purpose of this investigation was to provide a technical evaluation of the geologic setting of the site and to provide geotechnical design recommendations for the proposed residential type development. The scope of our services included:

- Review of available pertinent geotechnical literature, reports, maps, and agency information pertinent to the study area;
- Geologic field reconnaissance mapping to verify the aerial distribution of earth units and significance of surficial features as compiled from documents, literature and reports reviewed,
- A subsurface field investigation to determine the physical soil conditions pertinent to the proposed development;
- Laboratory testing of selected soil samples obtained during the field investigation;
- Infiltration testing via the double ring infiltrometer method;
- Development of geotechnical recommendations for site grading and foundation design; and
- Preparation of this report summarizing our findings, and providing conclusions and recommendations for site development.

The approximate location of the site is shown on the attached Index Map, Enclosure A-1, within Appendix A.

To orient our investigation at the site, you provided us with a Site Plan of the site. The existing site topography and proposed development are shown on this map. A copy of this map was utilized as a base for our Site Plan, Enclosure A-2, within the pocket of Appendix A.

PROJECT CONSIDERATIONS

Information furnished to this firm indicates the proposed project will consist of the construction of an apartment complex and associated improvements on the 20 ± acre site.

Based on the Conceptual Grading Plan provided, grading will incorporate nominal cuts on the order of 21 feet and fills on the order of 10 feet. Cut slopes with gradients of 2 horizontal to 1 vertical up to approximately 23 feet tall and cut slopes with gradients of 1.5 horizontal to 1 vertical up to approximately 27 feet tall are also proposed. Although, the type of construction for the apartment buildings has not yet been stated, it will most likely consist of wood frame and stucco with structures up to three stories in height. Moderate foundation loads are associated with such structures.

EXISTING SITE CONDITIONS

The subject site is an irregular shaped parcel comprising approximately 20 acres located south of John F. Kennedy Drive and east of Moreno Beach Drive, within the driving range of the existing Moreno Valley Ranch Golf Course, in the City of Moreno Valley, California. The topography of the site is generally planar within the northern portion of the site, becoming hummocky and rising at an average gradient of approximately 9 horizontal to 1 vertical southeasterly. The highest elevation of the site is in the southwestern corner, at approximately 1,686 feet and the lowest is in the northeastern corner, at approximately 1,597 feet. The planar topography in the far northern portion is broken by a small outcropping of rocks.

At the time of our investigation the majority of the subject site was vacant of structures and contained a layer of dry grass. However, the perimeter areas along the west and east sides, adjacent to hole 1 mountain on the east-southeast and hole 9 mountain on the west-southwest, contained a landscaped strip consisting of trees and a concrete cart path. A pump house is located within the landscape strip on the east-northeast and a weather station is present in the landscape strip on the west-southwest.

The site is bordered on the north by the existing golf course club house and an apartment complex, both followed by John F. Kennedy Drive. As previously mentioned, hole 1 mountain borders the site on the east-southeast and hole 9

mountain borders the site on the west-southwest. Championship Drive and some tract residential homes border the site on the south.

SUBSURFACE FIELD INVESTIGATION

Our subsurface field exploration program was conducted on August 11, 2016 and consisted of drilling 8 exploratory borings with a truck-mounted CME 55 drill rig equipped with a 8-inch diameter hollow stem augers. The borings were extended to depths ranging from approximately 15 feet to 41 feet below the existing ground surface. The approximate locations of our exploratory borings are presented on the enclosed Plate, Enclosure A-2, within Appendix A.

Logs of the subsurface conditions encountered in the exploratory borings were maintained by a geologist from this firm. Bulk samples of the encountered materials were obtained and returned to our geotechnical laboratory in sealed containers for further testing and evaluation. Relatively undisturbed samples were obtained at maximum intervals of 5 feet and returned to our geotechnical laboratory in sealed containers for further testing and evaluation. A detailed description of the subsurface field exploration program and boring are presented in Appendix B.

LABORATORY TESTING PROGRAM

Selected soil samples obtained during the field investigation were subjected to laboratory testing to evaluate their physical and engineering properties. Laboratory testing included in-place moisture content and dry density, laboratory compaction characteristics, direct shear, sieve analysis, sand equivalent, R-value, expansion index, and soluble sulfate content. A detailed description of the laboratory testing program and the test results are presented in Appendix C.

GEOLOGIC CONDITIONS

Regional Geologic Setting

The subject site is situated within the northeastern portion of the Peninsular Ranges Geomorphic Province of southern California. This province incorporates several northwest trending mountain ranges, such as the Santa Ana and San Jacinto Mountains, which extend from the Transverse Ranges Geomorphic Province, northeast

of Los Angeles, into the Baja California Peninsula. Lying in between these small ranges are a series of valleys and basins, such as the Elsinore Valley and the Perris Plain. The Elsinore Valley is a linear, fault controlled, valley along the eastern side of the Santa Ana Mountains extending from Corona south to Temecula. The eastern margin of this valley is joined by a higher, relatively flat, plain which extends east to the San Jacinto Mountains, called the Perris Plain. The Perris Plain is composed of rocks of the Peninsular Ranges batholith, a very large mass composed primarily of batholithic crystalline igneous rocks, with lessor amounts of metasedimentary and metavolcanic rocks which predate the intrusion of the batholith. The batholithic rocks actually consist of numerous separate plutonic intrusions which range in composition from gabbro to granite, with tonalite the predominate lithology. While the floor of the Perris Plain is relatively flat, it is dotted with small remnant hills, or inselbergs, composed of rocks highly resistant to erosion. The small hills of Mount Russell, adjacent the site to the south, are composed of a batholithic crystalline igneous rock composed of granitic like rocks predominately of granodiorite to tonalite composition. Erosion of the hills has resulted in the covering of a thin to thick veneer of various ages of alluvial fan materials across the flank of the hills and out into the adjoining valley floor. The current drainage pattern of the northeastern section of Moreno Valley flows to the south, then turns to the southwest where southward flow is blocked by Mount Russell. This pattern has eroded off some of the older alluvial fan materials and subsequently deposited various amounts of relatively younger unconsolidated alluvial sediments along the lower reaches of the valley.

The subject site is therefore underlain by bedrock units of granitic-like rocks, which outcrop at the surface, primarily along the southern fringes. These units are covered with various depths of older, indurated, alluvial materials along the remainder of the site.

The interior of the Perris Plain is considered to be relatively stable with few known active faults. However, this Plain is bounded by active faults. These include the Elsinore fault zone on the west, the San Jacinto fault zone on the northeast, the Cucamonga fault zone on the north, and the Agua-Tibia fault zone on the south. As the subject site is located near the northeastern margin of Perris Plain, the San Jacinto fault is the closest known active fault in relation to the site. At its closest approach, the San Jacinto fault is located approximately 5.0 kilometers (3.2 miles) to the northeast.

The site and immediate surrounding region as mapped by the U.S.G.S. (Morton and Matti, 2001) is presented as Enclosure A-4 within Appendix A.

Site Geologic Conditions

As observed during this investigation, the subject site is underlain by fill/topsoil overlying native alluvial materials and igneus bedrock. These units are described in further detail in the following sections:

Surficial Deposits

Fill: The surface of the site contained a layer of materials which have been altered in some manner. These materials were noted to generally consist of silty sand which was brown, dry, and in a loose state. These units were noted to be on the order of 0.5 to 7 feet in thickness and associated with the current site development as a golf course.

Older Alluvium: Underlying the surficial materials, natural units of older alluvium were encountered. These units consisted of primarily of silty sand with minor units of well graded sand with silt, well graded sand, and clayey sand. Typically, the older alluvial materials were brown to red-brown in color, damp, micaceous, and contained some pinhole porosity within the upper portions. The coarser grained materials tended to be speckled red-brown to red-black and dry. Based on the results of the equivalent SPT blow counts, it was noted that the older alluvial materials were in a medium dense to dense state upon first encountered, becoming dense to very dense with depth.

Igneous Bedrock: Underlying the older alluvial materials and exposed at the surface as previously noted, igneous bedrock of tonalite composition was encountered within 5 of our exploratory borings. As encountered, the bedrock was typically moderately to highly weathered, coarse to medium grained, and dry. These materials become very hard quickly with depth.

A detailed description of the subsurface soil conditions as encountered within our exploratory borings is presented on the Boring Logs within Appendix B.

Groundwater Hydrology

Groundwater was not encountered in any of our exploratory borings as advanced to a maximum depth of approximately 41 feet, nor was any groundwater seepage observed during our site reconnaissance on the subject site.

Records for nearby wells which were readily available from the State of California Department of Water Resources online database (DWR, 2017) and the Western Municipal Water District Cooperative Well Measurement Program (WMWD, 2016) were reviewed as a part of this investigation.

According to the State of California Department for Water resources online database, the nearest wells are Local Well ID EMWD 10140 and 10141 located approximately 0.7 kilometers (0.5 miles) to the north of the site. Data for these wells was present from November of 2011 to October of 2015. Groundwater levels ranged from depths of approximately 50 to 80 feet during that time. A measuring point elevation of 1,545 feet above mean sea level was provided.

Groundwater records provided by the Cooperative Well Measuring Program coordinated by the Western Municipal Water District (2016), also identified the above wells with a groundwater depth of 63 feet in 2015, the most recent measurement.

Mass Movement

The majority of the site lies on a relatively flat surface. The occurrence of mass movement failures such as landslides, rockfalls, or debris flows within such areas are generally not considered common and no evidence of mass movement was observed on the site.

Faulting

No active or potentially active faults are known to exist at or project into the subject site, nor was any evidence of faulting or lineaments noted during our field investigation of the site. In addition, the site does not lie within a current State of California Earthquake Fault Zone (Hart, 1997).

As previously mentioned, the closest known fault with a well documented location is the San Jacinto fault, located approximately 5 kilometers (3.2 miles) to the northeast. Other active earthquake faults in the region include the San Andreas fault located approximately 22.5 kilometers (14 miles) to the northeast, the Elsinore fault located approximately 32.5 kilometers (20 miles) to the southwest, and the Cucamonga fault located approximately 39.5 kilometers (24.5 miles) to the northwest.

The San Jacinto fault zone is a sub-parallel branch of the San Andreas fault zone, extending from the northwestern San Bernardino area, southward into the El Centro region. This fault has been active in recent times with several large magnitude events. It is believed that the San Jacinto fault is capable of producing an earthquake magnitude on the order of 6.5 or larger.

The San Andreas fault is considered to be the major tectonic feature of California, separating the Pacific Plate and the North American Plate. While estimates vary, the San Andreas fault is generally thought to have an average slip rate on the order of 24mm/yr and capable of generating large magnitude events on the order of 7.5.

The Elsinore fault zone is one of the largest in southern California. At its northern end it splays into two segments, named the Chino and Whittier faults, and at its southern end it is cut by the Yuba Wells fault. The primary sense of slip along the Elsinore fault is right lateral strike-slip. Several of the fault strands which make up the Elsinore fault zone possess their own names. It is believed that the Elsinore fault zone is capable of producing an earthquake magnitude on the order of 6.5 to 7.5.

The Cucamonga fault is considered to be part of the Sierra Madre fault system which marks the southern boundary of the San Gabriel Mountains. This is a north dipping thrust fault which is believed to be responsible for the uplift of the San Gabriel Mountains. It is believed that the Cucamonga fault is capable of producing an earthquake magnitude on the order of 7.0.

Current standards of practice have included a discussion of all potential earthquake sources within a 100 kilometer (62 mile) radius. However, while there are other large earthquake faults within a 100 kilometer (62-mile) radius of the site, none of these are considered as relevant to the site as the faults described above, due to their greater distance and/or smaller anticipated magnitudes.

Historical Seismicity

In order to obtain a general perspective of the historical seismicity of the site and surrounding region, a search was conducted for seismic events at and around the area within various radii. This search was conducted utilizing the historical seismic search program by EPI Software, Inc. (Reeder, 2000) This program conducts a search of a user selected cataloged seismic events database, within a specified radius and selected magnitudes, and then plots the events onto an overlay map of known faults. For this investigation the database of seismic events utilized by the EPI program was obtained from the Southern California Seismic Network (SCSN) available from the Southern California Earthquake Center. At the time of our search the data base contained data from January 1, 1932 through December 31, 2010.

In our first search, the general seismicity of the region was analyzed by selecting an epicenter map listing all events of magnitude 4.0 and greater, recorded since 1932, within a 100 kilometer (62 mile) radius of the site, in accordance with guidelines of the California Division of Mines and Geology. This map illustrates the regional seismic history of moderate to large events. As depicted on Enclosure A-5, within Appendix A, the site lies within a relatively active region associated with the San Jacinto and San Andreas faults trending southeast to northwest. Of these events, the closest was a magnitude 4.1 located approximately 12 kilometers (7.5 miles) north of the site.

In the second search, the micro seismicity of the area lying within a 10 kilometer (6.2 miles) radius of the site was examined by selecting an epicenter map listing events on the order of 0.0 and greater since 1978. In addition, only the "A" events, or most accurate events were selected. Caltech indicates the accuracy of the "A" events to be approximately 1 kilometer. The results of this search is a map that presents the seismic history around the area of the site with much greater detail, not permitted on the larger map. The reason for limiting the events to the last 40 ± years on the detail map is to enhance the accuracy of the map. Events recorded prior the mid 1970's are generally considered to be less accurate due to advancements in technology. As depicted on this map, Enclosure A-6, the adjacent San Jacinto fault appears to be the source of numerous events.

In summary, the historical seismicity of the site entails numerous small to medium magnitude earthquake events occurring in the region around the subject site, predominately associated with the presence of the San Jacinto fault. Any future

developments at the subject site should anticipate that moderate to large seismic events could occur very near the site.

Secondary Seismic Hazards

Other secondary seismic hazards generally associated with severe ground shaking during an earthquake include liquefaction, seismic-induced settlement, seiches and tsunamis, earthquake induced flooding, landsliding, and rockfalls.

Liquefaction: The potential for liquefaction generally occurs during strong ground shaking within loose, granular sediments where the groundwater is usually less than 50 feet. As the site is underlain by dense older alluvial materials and igneous bedrock and the depth to groundwater is on the order of 50 plus feet, the potential for liquefaction is considered nil.

Seiches/Tsunamis: The potential for the site to be affected by a seiche or tsunami (earthquake generated wave) is considered nil due to absence of any large bodies of water very near the site.

Flooding (Water Storage Facility Failure): The Perris Reservoir is located nearby to the south of the site. However, due to the presence of Mount Russell lying in between the site and this reservoir, flooding from this source due to rupture during in earthquake is considered nil.

Seismically-Induced Landsliding: Due to the low relief of the site and surrounding region, the potential for landslides to occur at the site is considered nil.

Rockfalls. No large, exposed, loose or unrooted boulders are present above the site that could affect the integrity of the site.

Seismically-Induced Settlement: Settlement generally occurs within areas of loose, granular soils with relatively low density. Because the site is underlain by relatively dense older alluvium and hard igneous bedrock and grading of the site will remove any undocumented fill soils and any near surface loose alluvial soils, the potential for settlement is considered nil.

SLOPE STABILITY

To orient our slope stability analysis, the project Conceptual Grading Plan prepared by Winchester Associates, Inc. was utilized (2017). Based on this plan, the most critical slope section was selected based on both gradient and height. These consisted of a 27-foot tall, 1.5:1 (horizontal to vertical) cut slope planned along the south side of the project. The location of the slope analyzed are shown on the attached Geotechnical Map, Enclosure A-2. The cross section showing the geologic units comprising the slopes are presented as Enclosure A-3. As noted during this investigation and displayed on the subject cross section, the cut slope is anticipated to expose igneous bedrock materials that are generally massive.

The stability analyses were conducted using the method of limit quilibrium with the aid of the computer program PCSTABL5M (Purdue, 1987). This program calculates the factors for safety along numerous failure surface planes and establishes the surface with the lowest factor of safety. The failure surface with the lowest factor of safety is termed the "critical slip surface". By convention, slopes with static values greater than 1.50 and pseudostatic values greater than 1.10 along the critical slip surface are considered stable.

To perform this evaluation, a relatively undisturbed sample of the on-site igneous bedrock units comprising the subject cut slope was tested in direct shear. Direct shear testing conducted during this investigation showed a cohesion value of approximately 200 pounds per square foot (psf) and a friction angle of 40 degrees for the onsite igneous bedrock rock. A moist unit weight for the bedrock of 135 pcf was used.

Both static and pseudostatic conditions were analyzed for the slope design. Due to the close presence of the San Jacinto fault zone to the northeast, a horizontal earthquake coefficient of 0.15g was utilized for the pseudostatic analysis. A static factor of safety of approximately 1.78 and a pseudostatic factor of safety of approximately 1.64 were computed.

The calculations for our analysis are presented within Appendix F.

In summary, our preliminary calculations show adequate factors of safety for the preliminarily intended slope at the site. Therefore, we believe that the slopes should be grossly stable to the proposed maximum inclination of 1.5:1 (horizontal to vertical) and heights of 27 feet in cut. However, we recommend that during slope construction

the project engineering geologist should observe the cuts for any unfavorable geologic factors. Adverse factors are not anticipated at this time. In addition, if the review of the site development plans will result in steeper and/or taller slopes, additional slope stability evaluations may be required.

SOILS AND SEISMIC DESIGN CRITERIA (California Building Code 2016)

Section 1613 of Chapter 16 of the 2016 California Building Code (CBC) contains the procedures and definitions for the calculations of the earthquake loads on structures and non structural components that are permanently attached to structures and their supports and attachments.

It should be noted that the classification of use and occupancy of all proposed structures at the site, and thus design requirements, shall be the responsibility of the structural engineer and the building official.

CBC Earthquake Design Summary

The following earthquake design criteria have been formulated for the site utilizing the source referenced above.

However, these values should be reviewed by the building official (Risk Category) and structural engineer and the final design should be performed by a qualified structural engineer familiar with the region.

CBC 2016 SEISMIC DESIGN SUMMARY* Site Location (USGS WGS84) 33.66464, -117.2948, Risk Category III	
Site Class Definition Chapter 20 ASCE 7	D
S_s Mapped Spectral Response Acceleration at 0.2s Period, (Figure 1613.3.1(1))	1.806
S_1 Mapped Spectral Response Acceleration at 1s Period, (Figure 1613.3.3(2))	0.795
F_a Short Period Site Coefficient at 0.2s Period, (Table 1613.3.3(1))	1.0
F_v Long Period Site Coefficient at 1s Period,(Table 1613.3.3(2))	1.5
S_{MS} Adjusted Spectral Response Acceleration at 0.2s Period, (eq .16-37)	1.806
S_{M1} Adjusted Spectral Response Acceleration at 1s Period, (eq .16-38)	1.193
S_{DS} Design Spectral Response Acceleration at 0.2s Period,(eq .16-39)	1.204

CBC 2016 SEISMIC DESIGN SUMMARY* Site Location (USGS WGS84) 33.66464, -117.2948, Risk Category III	
S_{D1} Design Spectral Response Acceleration at 1s Period, (eq .16-40)	0.795
Seismic Design Category - Short Period (Table 1613.3.5(1))	E
Seismic Design Category - Long Period (Table 1613.3.5(2))	E
*Values obtained from U.S.G.S. online U.S. Seismic Design Maps tool	

INFILTRATION TESTING AND TEST RESULTS

Four double ring infiltration tests were conducted at the approximate locations illustrated on Enclosure A-2. Test pits were excavated to a depth of approximately 5 feet below the existing ground surface to the proposed basin bottom elevation of 1,590 feet above mean sea level and a 12-inch diameter casing was installed within the center of the test location with a 24-inch diameter casing centered around it. Each casing was imbedded to a depth of approximately 3.5 to 5.0-inches. These liners extended approximately 15 to 16.5-inches above the bottom of the test location. The test locations were tested immediately after the casings were installed by filling both the inside and outside casings and maintaining a water level to a depth of approximately 2.0-inches.

The testing procedure was as follows:

Both the inside and outside areas of the casings were filled with water to a level of approximately 2.5-inches above the ground surface. Water was then metered to maintain this water level within both rings. The volume of water use in a given time period was recorded at various time intervals to establish the infiltration rate of the inner ring. See the attached Infiltration Test Data sheets, Enclosures D-1 through D-4 within Appendix D for the test information and measurements.

The infiltration rate is measured as the drop in water level compared to the permeability of the bottom surface area soils in the bottom of the test hole. If casing is not used, the water column in the test hole is allowed to seep into both the bottom and sidewalls of the hole, for which the drop in water level must be corrected and reduced for the volume of water seeping into the sidewall and for the diameter of the test hole. As described above, the tests described herein were conducted using a 12-inch diameter inner casing and 24-inch diameter outer casing.

The test holes were found to have the following measured clear water infiltration rates:

Infiltration Test No.	Infiltration Rate*	
	gal/sf/day	in/hr
DRI-1	3.7	0.2
DRI-2	294.4	19.7
DRI-3	36.5	2.4
DRI-4	28.8	1.9
* Average of final two readings		

The clear water percolation rates obtained in our test locations ranged from 0.2 to 19.7 inches per hour.

CONCLUSIONS

General

This investigation provides a broad overview of the geotechnical and geologic factors which are expected to influence future site planning and development. On the basis of our field investigation and testing program, it is the opinion of LOR Geotechnical Group, Inc. that the proposed development is feasible from a geotechnical standpoint, provided the recommendations presented in this report are incorporated into design and implemented during grading and construction.

The subsurface conditions encountered in our exploratory borings are indicative of the locations explored. The subsurface conditions presented here are not to be construed as being present the same everywhere on the site. If conditions are encountered during the construction of the project which differ significantly from those presented in this report. This firm should be notified immediately so we may assess the impact to the recommendations provided.

Foundation Support

Based upon the field investigation and test data, it is our opinion that the existing fills and the upper native soils, will not, in their present condition, provide uniform and/or adequate support for the proposed structures. Our equivalent Standard Penetration Test (SPT) data indicated variable in-situ conditions of the existing fills and upper native soils, typically ranging from loose to medium dense states. This condition could cause unacceptable differential and/or overall settlements upon application of the anticipated foundation loads. Therefore, in order to provide adequate support for the proposed structures, we recommend that a compacted fill mat be constructed beneath footings and slabs. This compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils. In addition, the construction of this compacted fill mat will allow for the removal of the existing unsuitable earth materials within the building pad and structural fill areas. Conventional foundation systems using either individual spread footings and/or continuous wall footings will provide adequate support for the anticipated downward and lateral loads when utilized in conjunction with the recommended fill mat.

The fill mat created by over-excavation of the building areas will also allow for the removal of any resistant bedrock that may exist beneath portions of some of the proposed building pads at or near pad grade. Over-excavation of bedrock, where exposed only under portions of the building pad areas at pad grade, will reduce the potential for differential settlement across the building pad areas and will also aid in ease of excavation of footing and utility trenches.

Geologic Mitigations

No special mitigation methods are deemed necessary at this time, other than the geotechnical recommendations provided in the following sections.

Seismicity

Seismic ground rupture is generally considered most likely to occur along pre-existing active faults. Since no known faults are known to exist at, or project into the site, the probability of ground surface rupture occurring at the site is considered nil.

Due to the site's close proximity to the San Jacinto fault zone, as described above, it is reasonable to expect a strong ground motion seismic event to occur during the lifetime of the proposed development on the site. Large earthquakes could occur on other faults in the general area, but because of their lesser anticipated magnitude and/or greater distance, they are considered less significant than the San Jacinto fault zone from a ground motion standpoint.

The effects of ground shaking anticipated at the subject site should be mitigated by the seismic design requirements and procedures outlined in Chapter 16 of the California Building Code. However, it should be noted that the current building code requires the minimum design to allow a structure to remain standing after a seismic event, in order to allow for safe evacuation. A structure built to code may still sustain damage which might ultimately result in the demolishing of the structure (Larson and Slosson, 1992).

Ease of Excavation

The site is underlain by surficial deposits of unconsolidated fill and older alluvial materials. Such units do not typically require specialized excavation methods.

Igneous bedrock is present across the site either exposed at the surface or at depth. The rippability of the bedrock units at the subject site was estimated based on the relative ease, or lack of, excavation during our borings. The bedrock units which underlie the site were noted to be rippable by conventional earthmoving equipment down to the depths explored. Excavations deeper than this may require specialized methods, such as D8R or larger dozer using a multi or single shank ripper. Excavations in these materials may require specialized methods. It is anticipated that some larger non-rippable rock "floaters" may be encountered. These may require special handling.

If a more precise estimation of the rippability of the bedrock units is required a seismic refraction investigation should be conducted at the site. Such a study should involve the measuring of the seismic velocities of the underlying bedrock units, as they increase with depth, then comparing these to estimates of velocities verses ease of excavation charts. Such a study would be beneficial in areas such as the southwestern portion of the site where approximately 21 feet of cut in the bedrock is proposed.

In summary, the most important consideration for the proposed grading should include selecting an experienced, well-qualified contractor. The success to excavating the bedrock materials at the site will require the contractor to have knowledge of the appropriate ripper-equipment selection (i.e., down pressure available at the tip, tractor flywheel horsepower, tractor gross weight, etc.), ripping techniques (i.e., single or multi-shank teeth, pass spacing, tandem pushing, etc.). It should also be noted that while in some areas where deeper cuts may be possible with standardized earthmoving equipment, specialized methods may increase the speed of the excavations at the site.

RECOMMENDATIONS

Geologic Recommendations

All cut slopes proposed for the project should be observed during construction by the project engineering geologist. As proposed, cut slopes within the bedrock should be at a maximum gradient of 1.5 horizontal to 1 vertical. Such slopes are considered stable at such an inclination and to the proposed maximum height of approximately 27 feet. Observations should be conducted at intervals no greater than 10 feet. Although not anticipated at this time, mitigation measures such as stabilization fill, buttress fill, or other measures may be required if unfavorable conditions are encountered.

General Site Grading

It is imperative that no clearing and/or grading operations be performed without the presence of a qualified geotechnical engineer. An on-site, pre-job meeting with the developer, the contractor, and goetechnical engineer, and jurisdictional agency should occur prior to all grading related operations. Operations undertaken at the site without the geotechnical engineer present may result in exclusions of affected areas from the final compaction report for the project.

Grading of the subject site should be performed in accordance with the following recommendations as well as applicable portions of the California Building Code, and/or applicable local ordinances.

All areas to be graded should be stripped of significant vegetation and other deleterious materials. These materials should not be incorporated within engineered compacted fill. It is our recommendation that any existing fills that may be present be removed and replaced with engineered compacted fill.

Any uncontrolled fills encountered during site preparation should be completely removed, cleaned of significant deleterious materials, and may then be reused as compacted fill. Uncontrolled fills were identified at the site during this study and these will be encountered locally within the grading areas.

It is our recommendation that all existing uncontrolled and/or undocumented fills, buried obstructions, under any proposed flatwork and paved areas should be removed and replaced with engineered compacted fill. If this is not done, premature structural distress (settlement) of the flatwork and pavement may occur.

Cavities created by removal of subsurface obstructions should be thoroughly cleaned of loose soil, organic matter and other deleterious materials, shaped to provide access for construction equipment, and backfilled as recommended in the following Engineered Compacted Fill section of this report.

Initial Site Preparation

All existing fill and the upper portions of the older alluvial materials should be removed from areas to receive engineered compacted fill. The data developed during this investigation indicates that removals on the order of 2 to 7 feet will be required across the site to encounter competent older alluvial materials or igneous bedrock. Local areas requiring deeper removals may be present due to the existing improvements. Removals should expose older alluvial materials with a relative in-situ compaction of at least 85 percent and/or an in-situ saturation of at least 85 percent or relatively unweathered, hard, bedrock materials. The actual depths of removal should be verified during the grading operation by observation and in-place density testing.

Preparation of Fill Areas

Prior to placing fill, the surfaces of all areas to receive fill should be scarified to a depth of at least 12 inches, where practical. The scarified soil should be brought to

near optimum moisture content and recompacted to a relative compaction of at least 90 percent (ASTM D 1557).

Preparation of Foundation Areas

All footings should rest entirely upon a minimum of 24 inches of properly compacted fill material placed over competent native soils and/or bedrock. In areas where the required fill thickness is not accomplished by the removal of the existing fill, loose native soils, or weathered bedrock materials, the footing areas should be further subexcavated to a depth of at least 24 inches below the proposed footing base grade, with the subexcavation extending at least 5 feet beyond the footing lines. Where removals in excess of 5 feet deep are required, the removal areas should extend laterally at a 1:1 ratio. The bottom of this excavation should then be scarified to a depth of at least 12 inches, where practical, brought to near optimum moisture content, and recompacted to at least 90 percent relative compaction (ASTM D 1557) prior to refilling the excavation to grade as properly compacted fill.

No structure should be placed across any areas where the ratio of the maximum depth of fill to minimum depth of fill is greater than a 3 to 1 ratio as measured from the bottom of the footing. For example, if one edge of the building pad of a cut-to-fill transition lot requires 10 feet of fill, then the cut portion of the lot should be over-excavated to a minimum of 3 feet below the footing elevations.

Engineered Compacted Fill

All fill materials should be free from organic matter and other deleterious materials. Unless approved by the geotechnical engineer, rock or similar irreducible material with a maximum dimension greater than 6 inches should not be buried or placed in fills.

If required, import fill should be inorganic, non-expansive granular soils free from rocks or lumps greater than 6 inches in maximum dimension. Sources for import fill should be approved by the geotechnical engineer prior to their use.

Fill should be spread in maximum 8-inch uniform, loose lifts, each lift brought to near optimum moisture content, and compacted to a relative compaction of at least 90 percent in accordance with ASTM D 1557. The upper 12 inches of areas to be paved should be compacted to at least 95 percent (ASTM D 1557).

Based upon the relative compaction of the near surface fill and older alluvial soils determined during this investigation and the relative compaction anticipated for compacted fill soil, we estimate a compaction shrinkage factor of approximately 10 to 15 percent. Therefore, 1.10 to 1.15 cubic yards of in-place materials would be necessary to yield one cubic yard of properly compacted fill material. The volume used in calculations should include the processed bottom. These values are for estimating purposes only, and are exclusive of losses due to stripping or the removal of subsurface obstructions. Excavations within the bedrock are anticipated to bulk on the order of 0 to 5 percent. Therefore, 1.0 to 0.95 cubic yards of in-place materials would be necessary to yield one cubic yard of properly compacted material. These values may vary due to differing conditions within the project boundaries and the limitations of this investigation. Shrinkage/bulkage should be monitored during construction. If percentages vary, provisions should be made to revise final grades or adjust quantities of borrow or export.

Careful evaluation of on-site soils and any import fill for their expansion potential should be conducted during the grading operation.

Short Term Excavations

Following the California Occupational and Safety Health Act (CAL-OSHA) requirements, excavations 5 feet deep and greater should be sloped or shored. All excavations and shoring should conform to CAL-OSHA requirements.

Short-term excavation 5 feet deep and greater shall conform to Title 8 of the California Code of Regulations, Construction Safety Orders, Section 1504 and 1539 through 1547. Based on our exploratory trenches, it appears that the older alluvial soils can be classified as Type C soils and the igneous bedrock materials as Stable Rock. These are the predominant types of soil and rock on the project and all short-term excavation should be based on these types of soil. Deviation from the standard short-term slopes are permitted using option 4, Design by a Registered Professional Engineer (Section 1541.1).

Short-term slope construction and maintenance are the responsibility of the contractor, and should be a consideration of his methods of operation and the actual soil conditions encountered.

Soil Expansiveness

The materials encountered during this investigation were relatively granular and were tested and found to have a very low expansion potential. Therefore, specialized construction procedures to specifically resist expansive soil activity are not anticipated at this time. In order to verify this, additional evaluation of on-site and imported soils for their expansion potential should be conducted following completion of the grading operation.

Slope Construction

Preliminary data indicates that proposed cut slopes within the igneous bedrock should be constructed no steeper than one point five horizontal to one vertical up to 27 feet high. Preliminary data indicates that fill slopes should be constructed no steeper than two horizontal to one vertical. Fill slopes should be overfilled during construction and then cut back to expose fully compacted soil. A suitable alternative would be to compact the slopes during construction, then roll the final slopes to provide dense, erosion-resistant surfaces.

Where fills are to be placed against existing slopes steeper than five horizontal to one vertical, the fill should be properly keyed and benched into competent native materials. The key, constructed across the toe of the slope, should be a minimum of 12 to 15-feet wide, a minimum of two feet deep at the toe, and sloped back at two percent.

Benches should be constructed at approximately two to four feet vertical intervals. Typical keying and benching operations are presented on Enclosure E-1, within Appendix E.

Slope Protection

Since the native materials are susceptible to erosion by running water, measures should be provided to prevent surface water from flowing over slope faces. Slopes at the project should be planted with a deep rooted ground cover as soon as possible after completion. The use of succulent ground covers such as iceplant or sedum is not recommended. If watering is necessary to sustain plant growth on slopes, then the watering operation should be monitored to assure proper operation of the irrigation system and to prevent over watering.

Establishing such vegetation on cut slopes within the igneous bedrock may be difficult. Other methods such as the use of jute netting may be considered.

Due to their inclination, routine maintenance of the 1.5 to 1 cut slopes may be problematic.

Foundation Design

If the site is prepared as recommended, the proposed apartment structures may be safely founded on conventional spread foundations, either individual spread footings and/or continuous wall footings, bearing either on a minimum of 24 inches of engineered compacted fill or bearing entirely on competent native materials. All foundations should have a minimum width of 12 inches and should be established a minimum of 12 inches below lowest adjacent grade.

For the minimum width and depth, spread foundations may be designed using an allowable bearing pressure of 1,800 psf. This bearing pressure may be increased by 300 psf for each additional foot of width or depth, up to a maximum of 4,000 psf. For example, a footing 2 feet wide and embedded 3 feet will have an allowable bearing pressure of 2,700 psf.

The above values are net pressures; therefore, the weight of the foundations and the backfill over the foundations may be neglected when computing dead loads. The values apply to the maximum edge pressure for foundations subjected to eccentric loads or overturning. The recommended pressures apply for the total of dead plus frequently applied live loads, and incorporate a factor of safety of at least 3.0. The allowable bearing pressures may be increased by one-third for temporary wind or seismic loading. The resultant of the combined vertical and lateral seismic loads should act within the middle one-third of the footing width. The maximum calculated edge pressure under the toe of foundations subjected to eccentric loads or overturning should not exceed the increased allowable pressure. Buildings should be setback from slopes as detailed on the California Building Code.

Resistance to lateral loads will be provided by passive earth pressure and base friction. For footings bearing against compacted fill, passive earth pressure may be considered to be developed at a rate of 400 pounds per square foot per foot of depth. Base friction may be computed at 0.44 times the normal load. Base friction and passive

earth pressure may be combined without reduction. These values are for dead load plus live load and may be increased by 1/3 for wind or seismic.

Settlement

Total settlement of individual foundations will vary depending on the width of the foundation and the actual load supported. Maximum settlement of shallow foundations designed and constructed in accordance with the preceding recommendations are estimated to be on the order of 0.5 inch. Differential settlements between adjacent footings should be about one-half of the total settlement. Settlement of all foundations is expected to occur rapidly, primarily as a result of elastic compression of supporting soils as the loads are applied, and should be essentially completed shortly after initial application of the loads.

Slabs-On-Grade

To provide adequate support, concrete slabs-on-grade should bear on a minimum of 24 inches of compacted soil. The final pad surfaces should be rolled to provide smooth, dense surfaces upon which to place the concrete.

Slabs to receive moisture sensitive coverings should be provided with a moisture vapor barrier. This barrier may consist of an impermeable membrane. Two inches of sand over the membrane will reduce punctures and aid in obtaining a satisfactory concrete cure. The sand should be moistened just prior to placing of concrete.

The slabs should be protected from rapid and excessive moisture loss which could result in slab curling. Careful attention should be given to slab curing procedures, as the site area is subject to large temperature extremes, humidity, and strong winds.

Exterior Flatwork

To provide adequate support, exterior flatwork improvements should rest on a minimum of 12 inches of soil compacted to at least 90 percent (ASTM D 1557).

Flatwork surface should be sloped a minimum of 1 percent away from buildings and slopes, to approved drainage structures.

Wall Pressures

The design of footings for retaining walls should be performed in accordance with the recommendations described earlier within under Preparation of Foundation Areas and Foundation Design. For design of retaining wall footings, the resultant of the applied loads should act in the middle one-third of the footing, and the maximum edge pressure should not exceed the basic allowable value without increase.

For design of retaining walls unrestrained against movement at the top, we recommend an equivalent fluid pressure of 44 pounds per cubic foot (pcf) be used. This assumes level backfill consisting of recompacted, non-expansive, native soils placed against the structures and within the back cut slope extending upward from the base of the stem at 35 degrees from the vertical or flatter.

Retaining walls subject to uniform surcharge loads within a horizontal distance behind the structure equal to the structural height should be designed to resist additional lateral loads equal to 0.3 times the surcharge load. Any isolated or line loads from adjacent foundations or vehicular loading will impose additional wall loads and should be considered individually.

To avoid over stressing or excessive tilting during placement of backfill behind walls, heavy compaction equipment should not be allowed within the zone delineated by a 45 degree line extending from the base of the wall to the fill surface. The backfill directly behind the walls should be compacted using light equipment such as hand operated vibrating plates and rollers. No material larger than 3 inches in diameter should be placed in direct contact with the wall.

Wall pressures should be verified prior to construction, when the actual backfill materials and conditions have been determined. Recommended pressures are applicable only to level, properly drained, non-expansive backfill with no additional surcharge loadings. If inclined backfills are proposed, this firm should be contacted to develop appropriate active earth pressure parameters. Toe bearing pressure for non-structural walls on soils, not prepared as described earlier under Preparation of Foundation Areas, should not exceed California Building Code values, (CBC Table 18-1-A).

Preliminary Pavement Design

Testing and design for preliminary on-site pavement was conducted in accordance with the California Highway Design Manual. Based upon our preliminary sampling and testing, and upon Traffic Indices generally associated with multi-family projects, it appears that the structural sections tabulated below should provide satisfactory pavements for the subject improvements:

TYPE OF TRAFFIC	TRAFFIC INDEX (T.I.)	DESIGN R-VALUE	PRELIMINARY SECTION
Light Vehicle and Incidental Truck Traffic	5.0	15	0.25' AC/0.65' AB or 0.50' JPCP/0.35' AB

AC - Asphalt Concrete
AB - Class 2 Aggregate Base
JPCP - Jointed Plain Concrete Pavement with MR ≥ 625 psi

The above structural section is predicated upon 90 percent relative compaction (ASTM 1557) of all utility trench backfills and 95 percent relative compaction (ASTM 1557) of the upper 12 inches of street subgrade soils and of any aggregate base utilized. In addition, the aggregate base should meet Caltrans specifications for Class 2 Aggregate Base.

In areas of the pavement which will receive high abrasion loads due to start-ups and stops, or where trucks will move on a tight turning radius, consideration should be given to installing concrete pads. Such pads should be a minimum of 0.5 foot thick concrete, with a 0.35 foot thick aggregate base. Concrete pads are also recommended in areas adjacent to trash storage areas where heavier loads will occur due to operation of trucks lifting trash dumpsters.

The above pavement designs were based upon the results of preliminary sampling and testing, and should be verified by additional sampling and testing when the actual subgrade soils are exposed.

Sulfate Protection

The results of the soluble sulfate tests conducted on selected subgrade soils expected to be encountered at foundation levels are presented on Enclosure C.

Based on the test results, it appears that there is a negligible sulfate exposure to concrete elements in contact with the on site soils per the 2016 California Building Code. Therefore, no specific recommendations are given for concrete elements to be in contact with the on site soils.

Infiltration

Based upon our field investigation and infiltration test data, a clear water absorption rate of 2.0 inches per hour (30 gal/sf/day) appears to be applicable for the planned infiltration areas as tested. An appropriate factor of safety should be applied as stated within the Riverside County Flood Control and Water Conservation District Design Handbook for Low Impact Development Best Management Practices (2011).

To ensure continued infiltration capability of the infiltration areas, a program to maintain the facilities should be considered. This program should include periodic removal of accumulated materials, which can slow the infiltration and decrease the water quality. Materials to be removed from the catch basin areas typically consist of litter, dead plant matter, and soil fines (silts and clays). Proper maintenance of the system is critical. A maintenance program should be prepared and properly executed. At a minimum, the program should be as outlined in the Riverside County Flood Control and Water Conservation District Design Handbook for Low Impact Development Best Management Practices (2011).

The program should also incorporate the recommendations contained within this report and any other jurisdictional agency requirements.

Systems should be set back at least 25 feet from foundations and walls.

Any geotextile filter fabric utilized should consist of such that it prevents soil piping but has greater permeability than the existing soil.

During site development, care should be taken to not disturb the area(s) proposed for infiltration as changes in the soil structure could occur resulting in a change of the soil infiltration characteristics.

Construction Monitoring

Post investigative services are an important and necessary continuation of this investigation. Project plans and specifications should be reviewed by this firm prior to construction to confirm that the intent of the recommendations presented herein have been incorporated into the design. Testing for on-site pavement design should be performed after the site is rough graded. In addition, additional expansion index testing should be conducted in order to evaluate the impact, if any, to the site development as proposed.

During construction, sufficient and timely geotechnical observation and testing should be provided to correlate the findings of this investigation with the actual subsurface conditions exposed during construction. Items requiring observation and testing include, but are not necessarily limited to, the following

1. Site preparation-stripping and removals.

2. Excavations, including approval of the bottom of excavation prior to backfilling.

3. Scarifying and recompacting prior to fill placement.

4. Subgrade preparation for pavements and slabs-on-grade.

5. Placement of engineered compacted fill and backfill, including approval of fill materials and the performance of sufficient density tests to evaluate the degree of compaction being achieved.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Governmental Codes may occur. Due to

such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a significant amount of time without a review by LOR Geotechnical Group, Inc. verifying the suitability of the conclusions and recommendations.

LIMITATIONS

This report contains geotechnical conclusions and recommendations developed solely for use by ROC III CA Belago, LLC, and their designates for the purposes described earlier. It may not contain sufficient information for other uses or the purposes of other parties. The contents should not be extrapolated to other areas or used for other facilities without consulting LOR Geotechnical Group, Inc.

The recommendations are based on interpretations of the subsurface conditions concluded from information gained from subsurface explorations, and a surficial site reconnaissance. The interpretations may differ from actual subsurface conditions, which can vary horizontally and vertically across the site. Due to possible subsurface variations, all aspects of field construction addressed in this report should be observed and tested by the project geotechnical consultant.

If parties other than LOR Geotechnical Group, Inc. provide construction monitoring services, they must be notified that they will be required to assume responsibility for the geotechnical phase of the project being completed by concurring with the recommendations provided in this report or by providing alternative recommendations.

The report was prepared using generally accepted geotechnical engineering practices under the direction of a state licensed geotechnical engineer. No warranty, expressed or implied, is made as to conclusions and professional advice included in this report. Any persons using this report for bidding or construction purposes should perform such independent investigations as deemed necessary to satisfy themselves as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project.

ROC III CA Belago, LLC
February 21, 2017

Project No. 33289.1

CLOSURE

It has been a pleasure to assist you with this project. We look forward to being of further assistance to you as construction begins.

Should you have any questions regarding this report, please do not hesitate to contact this office at your convenience.

Respectfully submitted,
LOR Geotechnical Group, Inc.

Andrew A. Tardie
Staff Geologist

John P. Leuer, GE 2030
President

Robert M Markoff, CEG 2073
Engineering Geologist

AAT:RMM:JPL/ss

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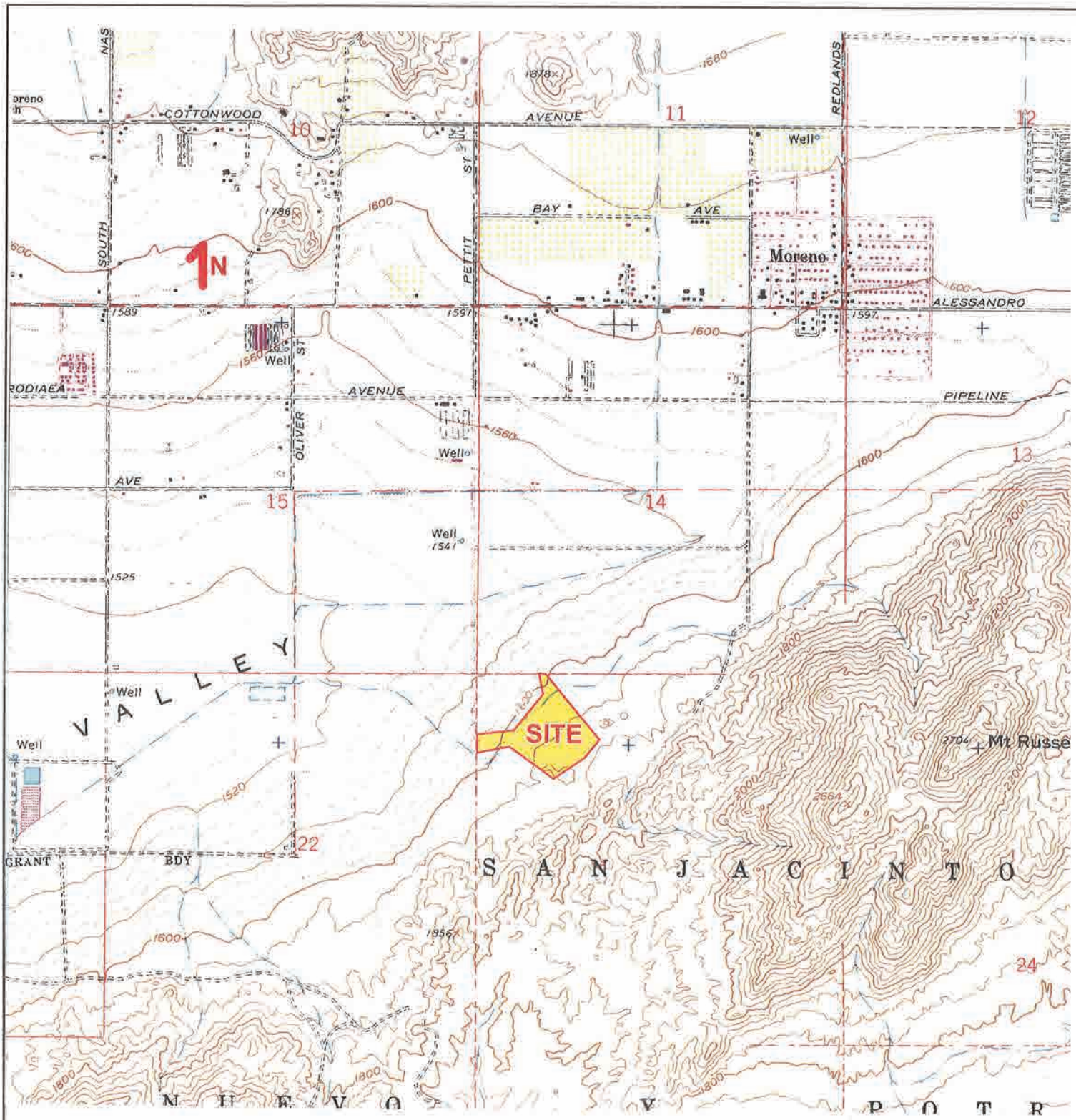
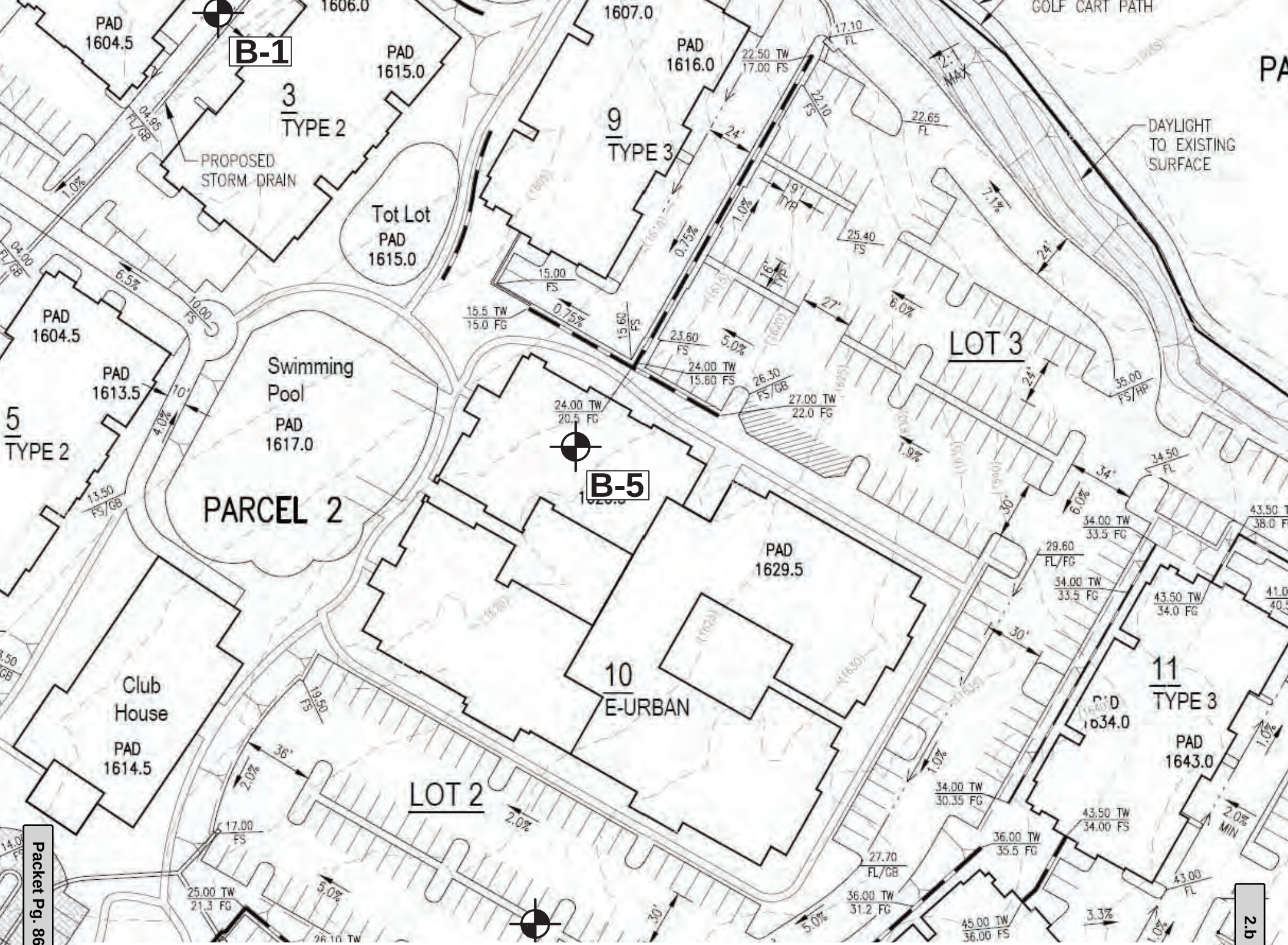
APPENDIX A

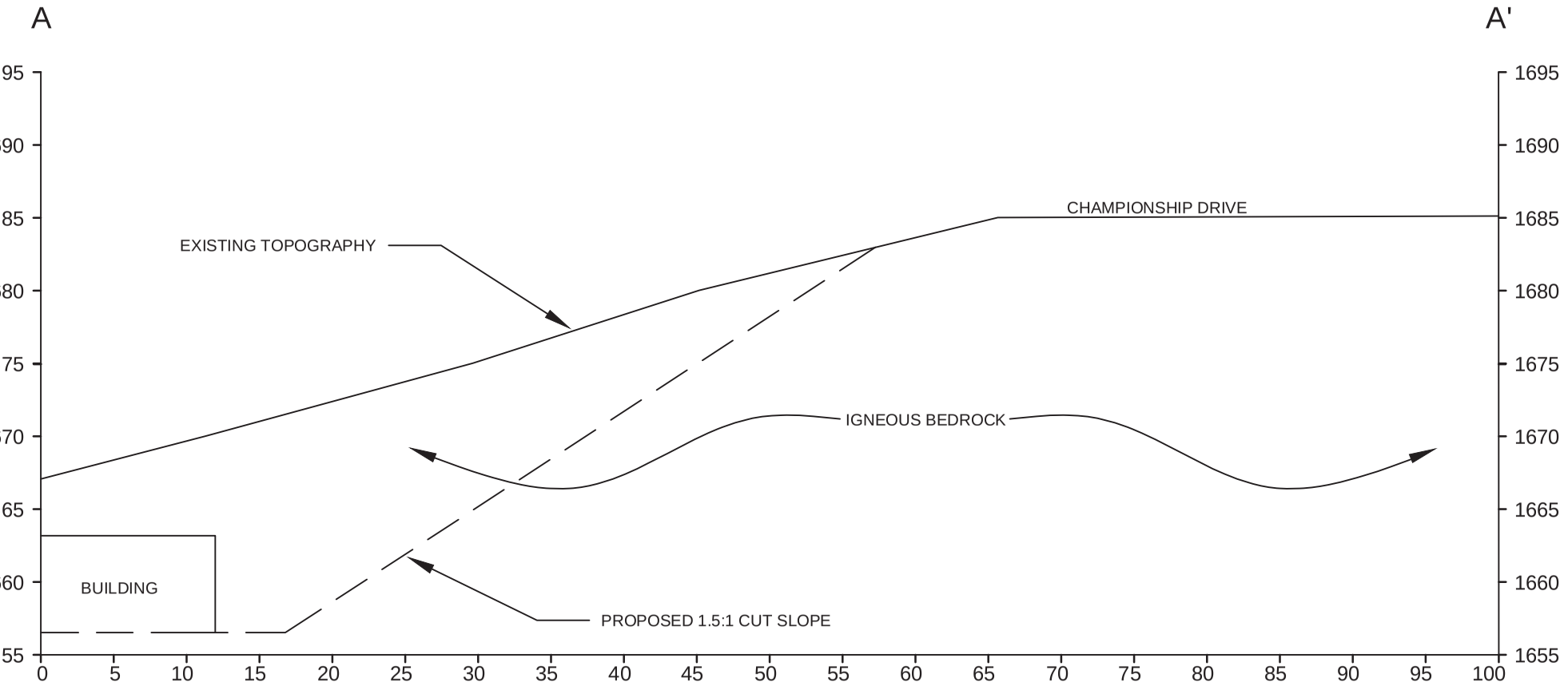
Index Map, Plate, Cross Section, Regional Geologic Map, and Historical Seismicity Maps

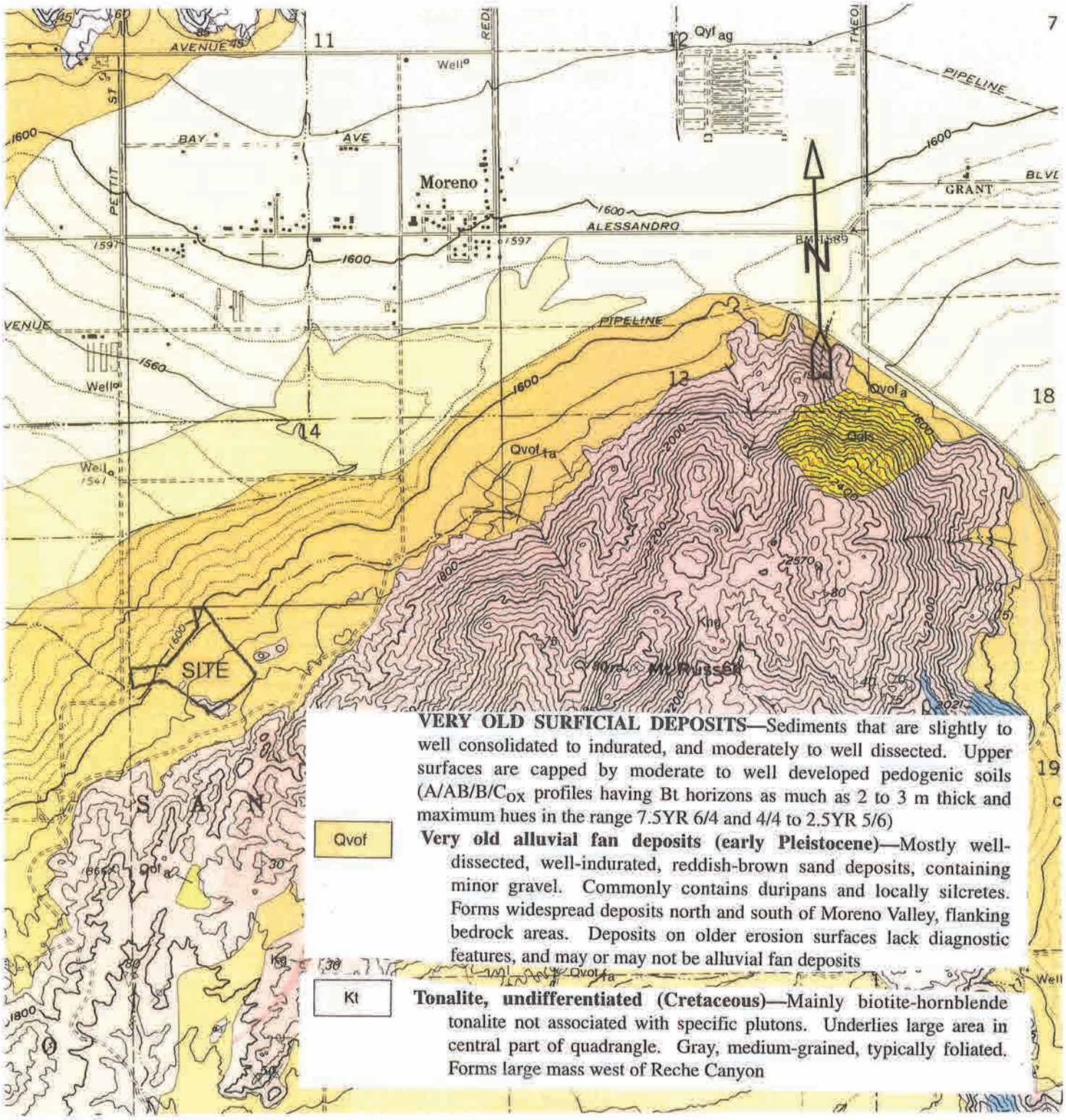


INDEX MAP

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	A-1
LOR Geotechnical Group, Inc.		DATE:	FEBUARY 2017
		SCALE:	1" = 2,000'


B-1
B-5
PAD 1604.5
PAD 1606.0
PAD 1607.0
PAD 1615.0
PAD 1616.0
3 TYPE 2
9 TYPE 3
PROPOSED STORM DRAIN
Tot Lot PAD 1615.0
DAYLIGHT TO EXISTING SURFACE
GOLF CART PATH
PAD 1604.5
PAD 1613.5
5 TYPE 2
Swimming Pool PAD 1617.0
PARCEL 2
LOT 3
PAD 1629.5
10 E-URBAN
Club House PAD 1614.5
LOT 2
11 TYPE 3
PAD 1643.0
PAD 1634.0


A
A'
CHAMPIONSHIP DRIVE
EXISTING TOPOGRAPHY
IGNEOUS BEDROCK
BUILDING
PROPOSED 1.5:1 CUT SLOPE
95
90
85
80
75
70
65
60
55
1695
1690
1685
1680
1675
1670
1665
1660
1655
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100



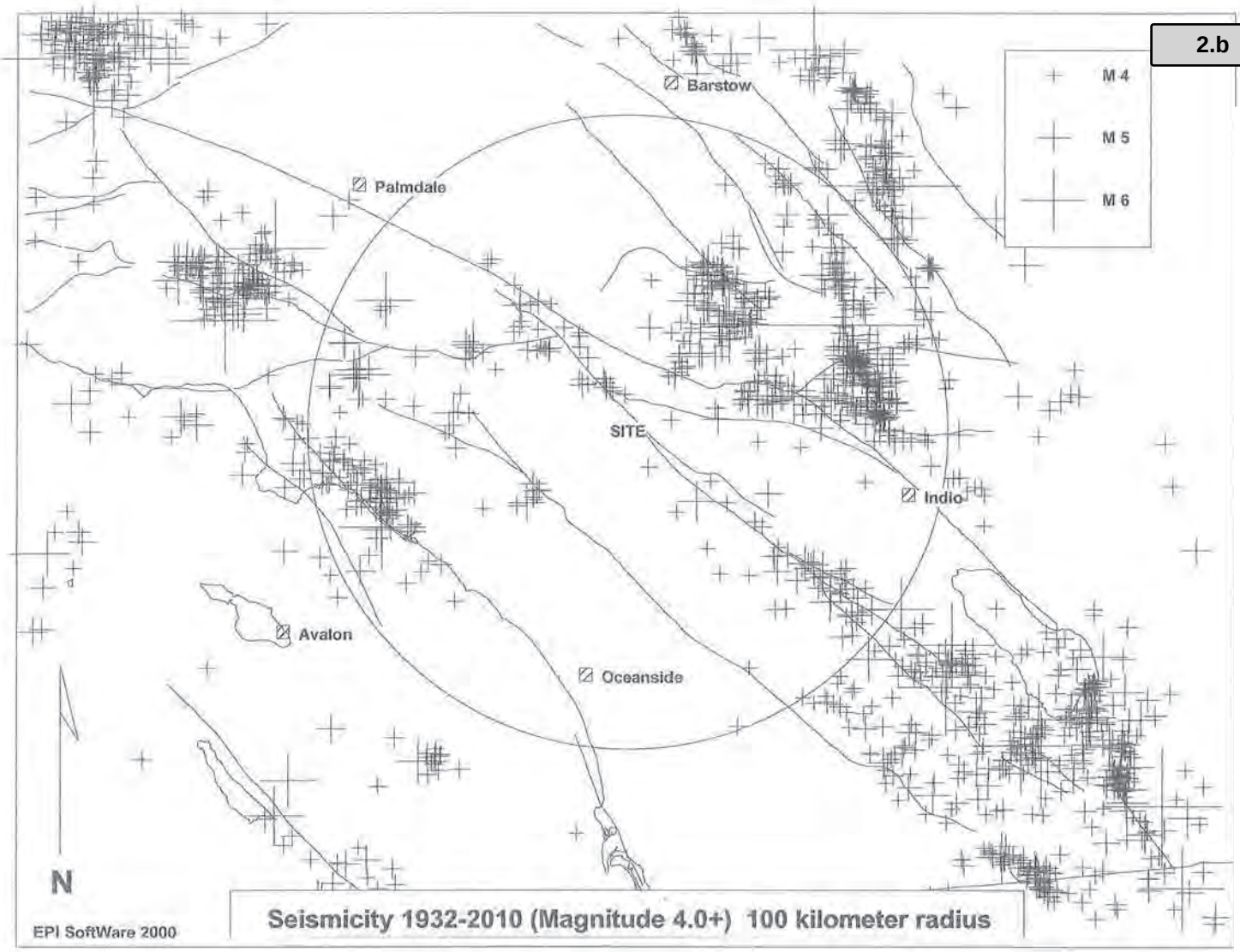
VERY OLD SURFICIAL DEPOSITS—Sediments that are slightly to well consolidated to indurated, and moderately to well dissected. Upper surfaces are capped by moderate to well developed pedogenic soils ($A/AB/B/C_{ox}$ profiles having Bt horizons as much as 2 to 3 m thick and maximum hues in the range 7.5YR 6/4 and 4/4 to 2.5YR 5/6)

Qvof — **Very old alluvial fan deposits (early Pleistocene)**—Mostly well-dissected, well-indurated, reddish-brown sand deposits, containing minor gravel. Commonly contains duripans and locally silcretes. Forms widespread deposits north and south of Moreno Valley, flanking bedrock areas. Deposits on older erosion surfaces lack diagnostic features, and may or may not be alluvial fan deposits

Kt — **Tonalite, undifferentiated (Cretaceous)**—Mainly biotite-hornblende tonalite not associated with specific plutons. Underlies large area in central part of quadrangle. Gray, medium-grained, typically foliated. Forms large mass west of Reche Canyon

REGIONAL GEOLOGIC MAP (Morton and Matti, 2001)

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	A-4
LOR Geotechnical Group, Inc.		DATE:	FEBRUARY 2017
		SCALE:	1" = 2,000'



SITE LOCATION: 33.9004 LAT. -117.1702 LONG.

MINIMUM LOCATION QUALITY: C

TOTAL # OF EVENTS ON PLOT: 1504

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 597

0 50 100
KILOMETERS

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

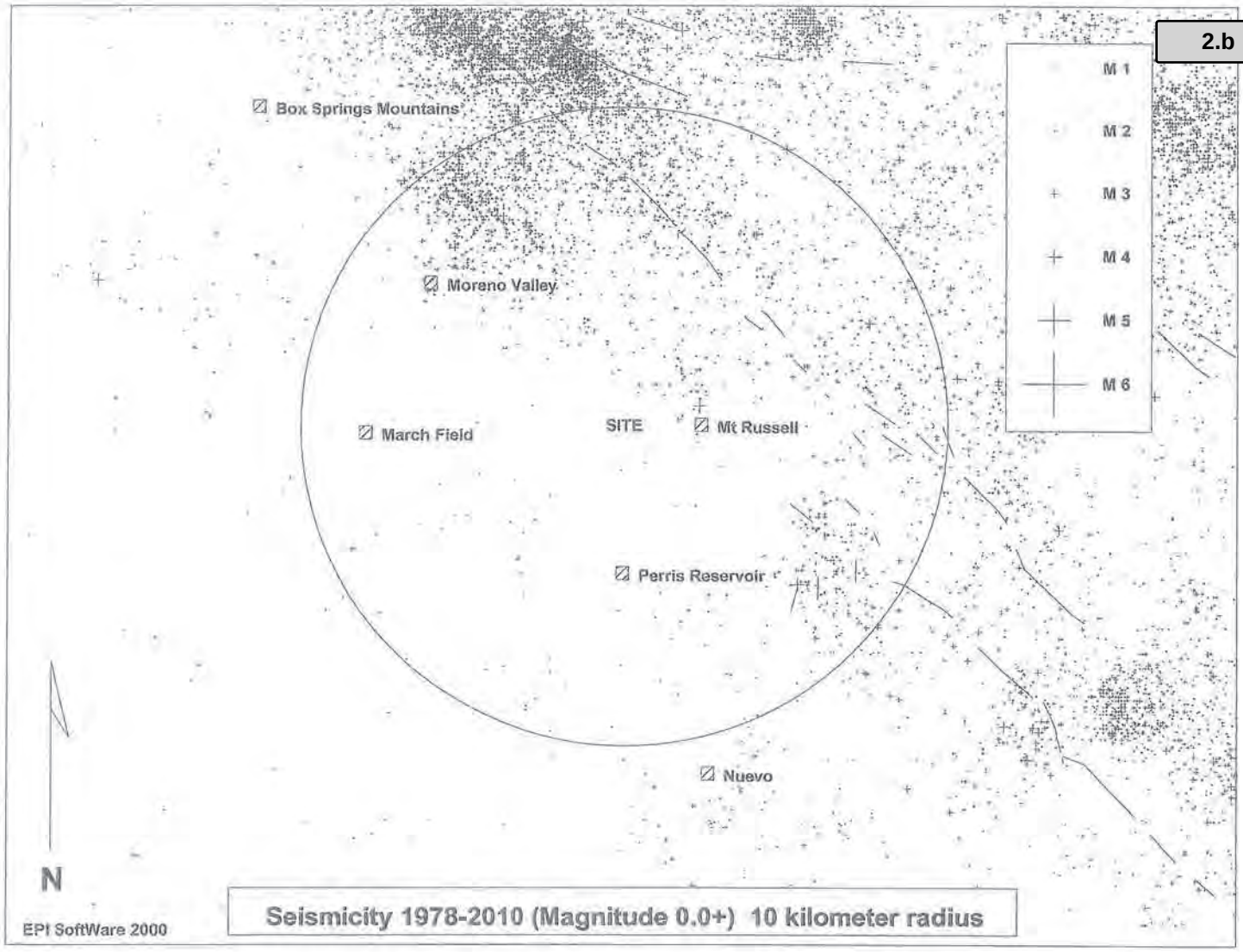
4.0- 4.9 : 537
5.0- 5.9 : 55
6.0- 6.9 : 4
7.0- 7.9 : 1
8.0- 8.9 : 0

CLOSEST EVENT: 4.1 ON SATURDAY, FEBRUARY 13, 201(LOCATED APPROX. 12 KILOMETERS NORTH OF THE SITE

LARGEST 5 EVENTS:

7.3 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 75 KILOMETERS NORTHEAST OF THE SITE
6.4 ON SATURDAY, MARCH 11, 193(LOCATED APPROX. 82 KILOMETERS SOUTHWEST OF THE SITE
6.3 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 46 KILOMETERS NORTHEAST OF THE SITE
6.1 ON THURSDAY, APRIL 23, 199(LOCATED APPROX. 78 KILOMETERS EAST OF THE SITE
6.0 ON SATURDAY, DECEMBER 04, 194(LOCATED APPROX. 77 KILOMETERS EAST OF THE SITE

Enclosure A-5



SITE LOCATION: 33.9004 LAT. -117.1702 LONG.

MINIMUM LOCATION QUALITY: A

TOTAL # OF EVENTS ON PLOT: 8288

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 2052

0 5 10
KILOMETERS

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

0.0- .9 : 312
1.0- 1.9 : 1512
2.0- 2.9 : 218
3.0- 3.9 : 10
4.0- 4.9 : 0
5.0- 5.9 : 0
6.0- 6.9 : 0
7.0- 7.9 : 0
8.0- 8.9 : 0

CLOSEST EVENT: 1.1 ON TUESDAY, SEPTEMBER 29, 1981 LOCATED APPROX. .3 KILOMETER OF THE SITE

LARGEST 5 EVENTS:

3.8 ON MONDAY, JULY 10, 200[illegible] LOCATED APPROX. 7 KILOMETERS SOUTHEAST OF THE SITE
3.8 ON THURSDAY, SEPTEMBER 12, 199[illegible] LOCATED APPROX. 2 KILOMETERS EAST OF THE SITE
3.6 ON SATURDAY, JUNE 04, 198[illegible] LOCATED APPROX. 9 KILOMETERS NORTHEAST OF THE SITE
3.5 ON TUESDAY, OCTOBER 13, 1987 LOCATED APPROX. 7 KILOMETERS NORTHWEST OF THE SITE
3.5 ON FRIDAY, JUNE 21, 198[illegible] LOCATED APPROX. 9 KILOMETERS NORTH OF THE SITE

Enclosure A-6

APPENDIX B

Field Investigation Program and Boring Logs

APPENDIX B
FIELD INVESTIGATION

Subsurface Exploration

The site was investigated on August 11, 2016 and consisted of advancing 8 exploratory borings to depths of approximately 15 to 41 feet below the existing ground surface. The approximate locations of our trenches are shown on the attached Plate, Enclosure A-2, within Appendix A.

The drilling exploration was conducted using a truck mounted Mobile B61B drill rig equipped with 8-inch diameter hollow stem augers. The soils were continuously logged by a staff geologist from this firm who inspected the site, created detailed logs of the borings, obtained undisturbed, as well as disturbed, soil samples for evaluation and testing, and classified the soils by visual examination in accordance with the Unified Soil Classification System.

Relatively undisturbed samples of the subsoils were obtained at a maximum interval of 5 feet. The samples were recovered by using a California split barrel sampler of 2.50-inch inside diameter and 3.00-inch outside diameter, from the ground surface to the maximum depths attained. The sampler was driven by a 140-pound automatic trip hammer dropped from a height of 30 inches. The number of hammer blows required to drive the sampler into the ground the final 12 inches was recorded and further converted to an equivalent SPT N-value. Factors such as efficiency of the automatic trip hammer used during this investigation (80%), inner diameter of the hollow stem auger (3.75 in), and rod length at the test depth were considered for further computing of equivalent SPT N-values corrected for field procedures (N60) which are included in the boring logs, Enclosures B-1 through B-8.

The undisturbed soil samples were retained in brass sample rings of 2.42 inches in diameter and 1.00 inch in height, and placed in sealed plastic containers. Disturbed soil samples were obtained at selected levels within the borings and placed in sealed containers for transport to our geotechnical laboratory.

All samples obtained were taken to our geotechnical laboratory for storage and testing. Detailed logs of the borings are presented on the enclosed Boring Logs, Enclosures B-1 through B-8. A Boring Log Legend is presented on Enclosure B-i. A Soil Classification Chart is presented on Enclosure B-ii.

CONSISTENCY OF SOIL

SANDS

SPT BLOWS	CONSISTENCY
0-4	Very Loose
4-10	Loose
10-30	Medium Dense
30-50	Dense
Over 50	Very Dense

COHESIVE SOILS

SPT BLOWS	CONSISTENCY
0-2	Very Soft
2-4	Soft
4-8	Medium
8-15	Stiff
15-30	Very Stiff
30-60	Hard
Over 60	Very Hard

SAMPLE KEY

Symbol	Description
	INDICATES CALIFORNIA SPLIT SPOON SOIL SAMPLE
	INDICATES BULK SAMPLE
	INDICATES SAND CONE OR NUCLEAR DENSITY TEST
	INDICATES STANDARD PENETRATION TEST (SPT) SOIL SAMPLE

TYPES OF LABORATORY TESTS

1	Atterberg Limits
2	Consolidation
3	Direct Shear (undisturbed or remolded)
4	Expansion Index
5	Hydrometer
6	Organic Content
7	Proctor (4", 6", or Cal216)
8	R-value
9	Sand Equivalent
10	Sieve Analysis
11	Soluble Sulfate Content
12	Swell
13	Wash 200 Sieve

BORING LOG LEGEND

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY,CALIFORNIA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	B-i
LOR Geotechnical Group, Inc.		DATE:	AUGUST 2016

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
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

PARTICLE SIZE LIMITS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	

12" 3" 3/4" No. 4 No. 10 No. 40 200

(U.S. STANDARD SIEVE SIZE)

SOIL CLASSIFICATION CHART

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY,CALIFORNIA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	B-ii
LOR Geotechnical Group, Inc.		DATE:	AUGUST 2016

LOG OF BORING B-1

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	25	3, 7, 9 10, 11	5.0		113.8			SM	@ 0 feet, FILL:SILTY SAND, approximately 10% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 30% silty fines, brown, dry.
5	23		7.0		122.0				@ 2 feet, OLDER ALLUVIUM:SILTY SAND, approixmately 25% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 25% silty fines, brown, damp, trace pinhole porosity, micaceous.
10	39		6.1		122.6				@ 5 feet, becomes slightly finer grained, increase in moisture, remains micaceous, strong brown.
15	35		7.7		117.8				
20	38		4.2		124.2				END OF BORING Fill to 2' No groundwater No bedrock
25									
30									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1605
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-1

LOG OF BORING B-2

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
0	42		4.7	123.4			SM	@ 0 feet, FILL: SILTY SAND, approximately 10% coarse grained sand, 30% medium grained sand, 45% fine grained sand, 15% silty fines, brown, dry.
								@ 2 feet, OLDER ALLUVIUMSILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 25% silty fines, brown, damp, trace thin calcite stringers.
5	39		8.7	127.1				@ 5 feet, becomes strong brown, moist, micaceous, trace clay, trace pinhole porosity.
10	42		6.1	130.4				@ 10 feet, SILTY SAND, approximately 30% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 15% silty fines, strong brown, damp, micaceous.
15	57		10.1	113.0				@ 15 feet, becomes red-brown, moist.
20	68		7.6	127.2				
25	83 for 9"		9.3	110.8				@ 25 feet, BEDROCK: TONALITE, moderately to highly weathered, coarse to medium grained.
								END OF BORING
30								Fill to 2' No groundwater Bedrock @ 25'

TEST DATA

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1632
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-2

LOG OF BORING B-3

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	8, 9, 10, 11							SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines, brown, dry.
	49		5.3		116.6				@ 1 foot, OLDER ALLUVIUM: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines with trace clay, red-brown, damp, micaceous.
5	57 for 11"		5.5		117.5				@ 5.5 feet, BEDROCK: TONALITE, moderately weathered, coarse to medium grained, dry.
10	46 for 4"		4.3						@ 10 feet, rings disturbed.
									END OF BORING Fill to 1' No groundwater Bedrock @ 5.5'
15									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1603
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-3

LOG OF BORING B-4

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	15		3.7		124.7			SM	@ 0 feet, FILL: SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 35% fine grained sand, 15% silty fines, brown, dry. @ 2 feet, becomes damp.
5	13		9.7		120.6				@ 5 feet, OLDER ALLUVIUM: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines with trace clay, strong brown, trace pinhole porosity, moist.
	39		6.5		124.7				
10	36		6.1		122.3				@ 7 feet, SILTY SAND, approximately 25% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 15% silty fine, red-brown, dry.
15	33		4.6		122.0			SW SM	@ 15 feet, WELL GRADED SAND with SILT, approximately 30% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 10% silty fines, speckled red-brown, damp, micaceous.
20	33		3.8		118.1				
25	27		8.2		116.7			SM	@ 25 feet SILTY SAND, approximately 25% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 15% silty fines, yellow-brown, dry, micaceous.
30	25		6.3		115.7				@ 30 feet, SILTY SAND, approximately 5% coarse grained sand, 10% medium grained sand, 60% fine grained sand, 25% siilty fines, red-brown, damp.
35	31		7.6		121.6				@ 36.5 feet, BEDROCK: TONALITE, slighlty weathered, coarse grained, dry.
40	54 for 3"								@ 40 feet, no recovery. END OF BORING Fill to 5' No groundwater Bedrock @ 36.5
45									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1627
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-4

LOG OF BORING B-5

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	37		5.7		113.2	■		SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 30% silty fines, brown, dry.
									@ 2 feet, OLDER ALLUVIUM: SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 20% silty fines, strong brown, damp, micaceous, trace pinhole porosity.
5	23		5.5		119.6	■			
10	33		6.2		117.9	■			@ 10 feet, becomes finer grained, approximately 10% coarse grained sand, 30% medium grained sand, 40% fine grained sand, 20% silty fines, yellow-brown, damp, micaceous.
15	32		5.5		119.7	■			
20	41		2.8		112.7	■		SW	@ 20 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 5% silty fines, speckeled red-brown, dry, micaceous.
									END OF BORING
25									Fill to 2'
									No groundwater
30									No bedrock

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1620
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-5

LOG OF BORING B-6

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	7, 9, 10, 11							SM	@ 0 feet, FILL: SILTY SAND, approximately 30% coarse grained sand, 30% medium grained sand, 25% fine grained sand, 15% silty fines, brown, dry.
	11		7.2		117.3				@ 1 foot, OLDER ALLUVIUM SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 20% silty fines, red-brown, damp.
5	9		8.4		121.9				@ 5 feet, contains trace pinhole porosity, strong brown.
	28		4.2		121.2				
10	14		2.9		107.7			SW	@ 10 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 5% silty fines, speckeled red-black, damp, micaceous
15	34		3.3		112.4				@ 17 feet, BEDROCK: TONALITE, highly weathered, coarse grained, dry.
20	51 for 5"		4.8		115.7				@ 20 feet, slighlty less weathered, rings disturbed.
									END OF BORING
25									Fill to 1'
									No groundwater
									Bedrock @ 17'

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1651
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-6

LOG OF BORING B-7

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
0	66 for 12"		4.4		113.8			SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 30% silty fines, brown, dry. @ 0.5 feet, OLDER ALLUVIUMSILTY SAND, approximately 15% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 20% silty fines with trace clay, strong brown, dry, abundant pinhole and slighlty larger porosity.
5	36		8.9		125.4			SC	@ 5 feet, CLAYEY SAND, approximately 20% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 15% clayey fines of low plasticity, red-brown, damp.
10	47		5.6		126.1				@ 10 feet, BEDROCK: TONALITE, highly to severly weathered, coarse grained, speckeled red-brown, dry.
15	46 for 2"		3.0		112.9				@ 15 feet, becomes less weathered, speckeled gray-white, no recovery.
20									END OF BORING Fill to 0.5' No groundwater Bedrock @ 10'

TEST DATA

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1650
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-7

LOG OF BORING B-8

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
									TEST DATA
0	17		3.6		115.3			SM	@ 0 feet, FILL: SILTY SAND, approximately 15% coarse grained sand, 25% medium grained sand, 30% fine graine sand, 30% silty fines, brown, dry. @ 2 feet, SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 35% fine grained sand, 20% silty fines, light brown, damp.
5	12		4.9		109.7				
	14		3.4		115.6				@ 7 feet, OLDER ALLUVIUM:SILTY SAND, approximately 15% coarse grained sand, 30% medium grained sand, 25% fine grained sand, 20% silty fines, yellow-brown, damp, trace pinhole porosity, micaceous.
10	21		5.2		119.2				
15	32		2.6		108.3				@ 15 feet, becomes strong brown, trace pinhole porosity remains.
20	35		10.1		126.7			SW	@ 20 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 35% medium grained sand, 30% fine grained sand, 5% silty fines, speckeled red-brown, dry, micaceous.
25	59							ML SM	@ 25 feet, SILTY SAND/SANDY SILT, approximately 15% coarse grained sand, 15% medium grained sand, 20% fine grained sand, 50% silty fines, strong brown, damp.
30									END OF BORING Fill to 7' No groundwater No bedrock

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1597
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-8

APPENDIX C

Laboratory Testing Program and Test Results

APPENDIX C
LABORATORY TESTING

General

Selected soil and bedrock samples obtained from the borings were tested in our geotechnical laboratory to evaluate the physical properties of the soils affecting foundation design and construction procedures. Laboratory testing included, in-place moisture content and density, laboratory compaction, direct shear, expansion index, sieve analysis, sand equivalent, and soluble sulfate content. Descriptions of the laboratory tests are presented in the following paragraphs:

Moisture-Density Tests

The moisture content and dry density information provides an indirect measure of soil consistency for each stratum, and can also provide a correlation between soils on this site. The dry unit weight and field moisture content were determined for selected undisturbed samples, in accordance with ASTM D 2216, and ASTM D 2937 and the results are shown on our boring logs, Enclosures B-1 through B-8, for convenient correlation with the soil profile.

Laboratory Compaction

Selected soil samples were tested in the laboratory to determine compaction characteristics using the ASTM D 1557 compaction test method. The results are presented in the following table:

LABORATORY COMPACTION				
Boring Number	Sample Depth (feet)	Soil Description (U.S.C.S.)	Maximum Dry Density (pcf)	Optimum Moisture Content (percent)
B-1	0-3	(SM) Silty Sand	136.5	8.0
B-3	0-3	(SM) Silty Sand	131.0	8.0

Direct Shear Tests

Shear tests are performed with a direct shear machine in general accordance with ASTM D 3080 at a constant rate-of-strain (usually 0.04 inches/minute). The machine is designed to test a sample partially extruded from a sample ring in single shear. Samples are tested at varying normal loads in order to evaluate the shear strength

parameters, angle of internal friction and cohesion. Samples are tested in a relatively undisturbed (u) or remolded (r) condition (90 percent per ASTM D 1557) and soaked, according to conditions expected in the field.

The results of the shear tests are presented in the following table:

DIRECT SHEAR TESTS				
Boring Number	Sample Depth (feet)	Soil Description (U.S.C.S.)	Angle of Internal Friction (degrees)	Apparent Cohesion (psf)
B-1(r)	0-3	(SM) Silty Sand	29	400
B-7 (u)	3 - 4	Granitic Bedrock	40	200

Expansion Index Test

Remolded samples are tested to determine their expansion potential in accordance with the Expansion Index (EI) test. The test is performed in accordance with the Uniform Building Code Standard 18-2. The test results are presented on the following table:

EXPANSION INDEX TESTS				
Boring Number	Sample Depth (feet)	Material Description (U.S.C.S)	Expansion Index (EI)	Expansion Potential
B-3	0-3	(SM) Silty Sand	1	Very Low
Expansion Index:	0-20 Very Low	21-50 Low	51-90 Medium	91-130 High

Sieve Analysis

A quantitative determination of the grain size distribution was performed for selected samples in accordance with ASTM D 422 laboratory test procedure. The determination is performed by passing the soil through a series of sieves, and recording the weights of retained particles on each screen. The results of the sieve analysis are presented graphically on Enclosure C-1.

Sand Equivalent

The sand equivalent of selected soils were evaluated using the California Sand Equivalent Test Method, Caltrans Number 217. The results of the sand equivalent tests are presented with the grain size distribution analysis on Enclosure C-1.

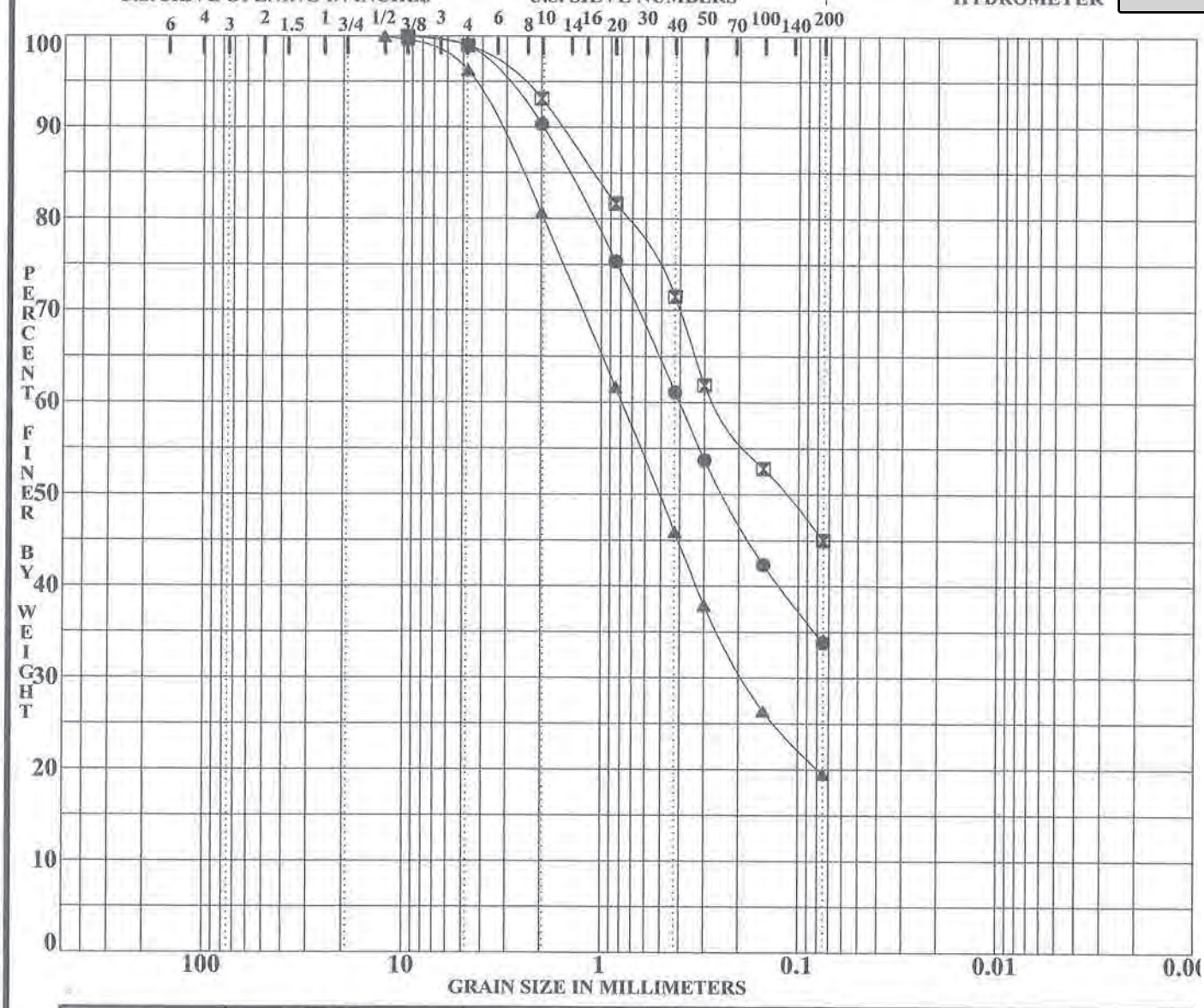
R-Value Test

Soil samples were obtained at probable pavement subgrade level and sieve analysis and sand equivalent tests were conducted. A selected soil sample was tested to determine its R-value using the California R-Value Test Method, Caltrans Number 301. The results of the sieve analysis, sand equivalent, and R-value tests are presented on Enclosure C-1.

Soluble Sulfate Content Tests

The soluble sulfate content of selected subgrade soils was evaluated. The concentration of soluble sulfates in the soils was determined by measuring the optical density of a barium sulfate precipitate. The precipitate results from a reaction of barium chloride with water extractions from the soil samples. The measured optical density is correlated with readings on precipitates of known sulfate concentrations. The test results are presented on the following table:

SOLUBLE SULFATE CONTENT TESTS			
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S)**	**Sulfate Content (percent by weight)**
B-1	0-3	(SM) Silty Sand	< 0.005
B-3	0-3	(SM) Silty Sand	< 0.005
B-4	0-3	(SM) Silty Sand	< 0.005



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Soil Classification	SE	RV	PL	PI	Cc	Cu
B-1	@ 0-3 ft	(SM) Silty Sand	16	--				
B-3	@ 0-3 ft	(SM) Silty Sand	14	14				
B-4	@ 0-3 ft	(SM) Silty Sand	21	--				

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
B-1	@ 0-3 ft	9.50	0.40			1.0	65.2	33.9	
B-3	@ 0-3 ft	9.50	0.26			1.0	54.0	45.0	
B-4	@ 0-3 ft	12.50	0.79	0.186		3.7	76.8	19.5	

PROJECT *Proposed Apartment Complex*

PROJECT NO. *33289.1*

DATE *2/17/17*

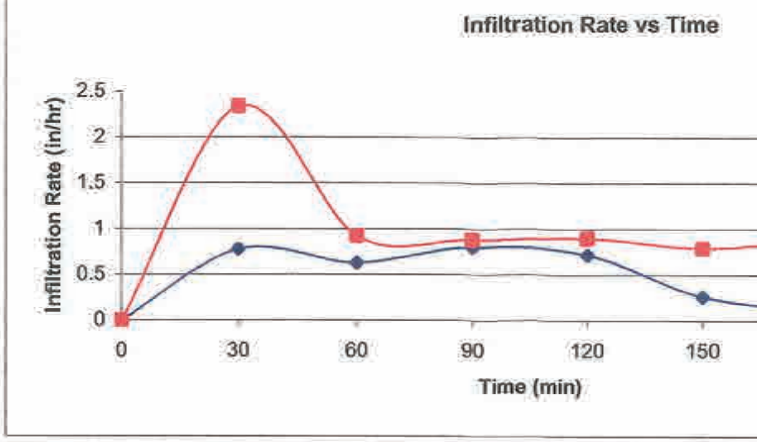
GRADATION CURVES
LOR Geotechnical Group, Inc.

ENCLOSURE C-1

APPENDIX D

Infiltration Test Results

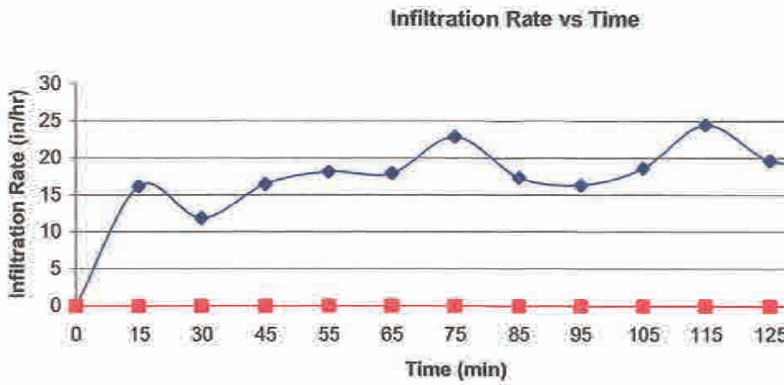
anch Apartments	**Test Date:**	February 9, 2017
9.1	**Test Hole No.:**	DRI-1
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9, 2017
Vater	**pH:**	7.8
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	3.5 in.
um Seal		
t.		



TEST PERIOD

NNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME ERVAL inutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	9:30 10:00	30	30	1.58	14.32	0.190	1.719	11.6	35.0	0.8	2.3
30	60	10:00 10:30	30	60	1.28	5.65	0.154	0.678	9.4	13.8	0.6	0.9
30	90	10:30 11:00	30	90	1.63	5.40	0.196	0.648	12.0	13.2	0.8	0.9
30	120	11:00 11:30	30	120	1.46	5.51	0.175	0.661	10.7	13.5	0.7	0.9
30	150	11:38 12:08	30	150	0.54	4.85	0.065	0.582	4.0	11.8	0.3	0.8
60	210	12:08 13:08	60	210	0.59	10.65	0.071	1.279	2.2	13.0	0.1	0.9
60	270	13:08 14:08	60	270	1.01	9.09	0.121	1.091	3.7	11.1	0.2	0.7

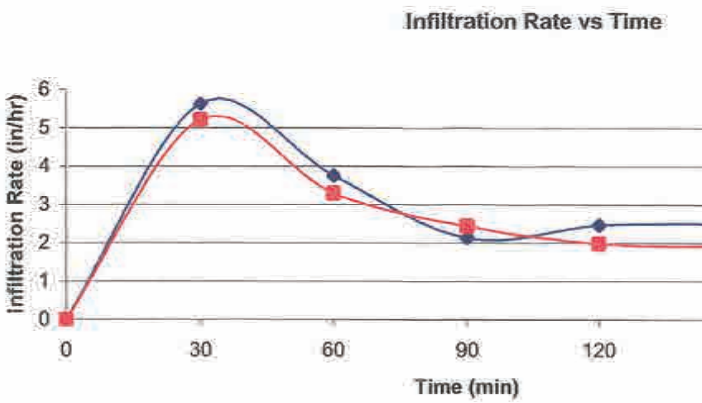
nch Apartment	**Test Date:**	February 9,2017
1	**Test Hole No.:**	DRI-2
M) Well Graded Sand with Silt	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9,2017
ater	**pH:**	7.8
0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	4 in.
m Seal		



TEST PERIOD

NER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)		LIQUID TEMP (°F)
ME RVAL utes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space	
5	15	*	*	*	16.48	*	1.978	*	241.9	*	16.2	*	68
5	30	*	*	*	12.08	*	1.450	*	177.3	*	11.9	*	69
5	45	*	*	*	16.78	*	2.014	*	246.3	*	16.5	*	69
0	55	*	*	*	12.30	*	1.477	*	270.9	*	18.1	*	69
0	65	*	*	*	12.15	*	1.459	*	267.6	*	17.9	*	70
0	75	*	*	*	15.49	*	1.860	*	341.1	*	22.9	*	70
0	85	*	*	*	11.77	*	1.413	*	259.2	*	17.4	*	70
0	95	*	*	*	11.10	*	1.333	*	244.4	*	16.4	*	70
0	105	*	*	*	12.62	*	1.515	*	277.9	*	18.6	*	71
0	115	*	*	*	16.61	*	1.994	*	365.8	*	24.5	*	71
0	125	*	*	*	13.35	*	1.603	*	294.0	*	19.7	*	
0		*											

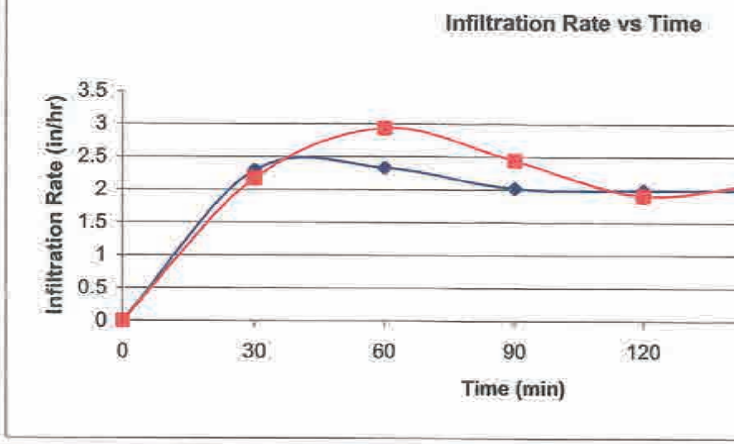
Ranch Apartments	**Test Date:**	February 9, 2017
9.1	**Test Hole No.:**	DRI-3
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9, 2017
Water	**pH:**	7.8
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	4 in.
um Seal		
ft.		



TEST PERIOD

INNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	10:18 10:48	30	30	11.44	31.84	1.373	3.822	84.0	77.7	5.6	5.2
30	60	10:48 11:18	30	60	7.64	20.12	0.917	2.415	56.1	49.1	3.8	3.3
30	90	11:20 11:50	30	90	4.34	14.94	0.521	1.794	31.9	36.5	2.1	2.4
30	120	11:50 12:20	30	120	5.02	12.19	0.603	1.463	36.8	29.8	2.5	2.0
30	150	12:27 12:57	30	150	5.09	11.95	0.611	1.435	37.4	29.2	2.5	2.0
30	180	12:57 13:27	30	180	4.97	14.54	0.597	1.745	36.5	35.5	2.4	2.4

Ranch Apartments	**Test Date:**	February 9, 2017
9.1	**Test Hole No.:**	DRI-4
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9, 2017
Water	**pH:**	7.8
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	5 in.
ium Seal		
ft.		



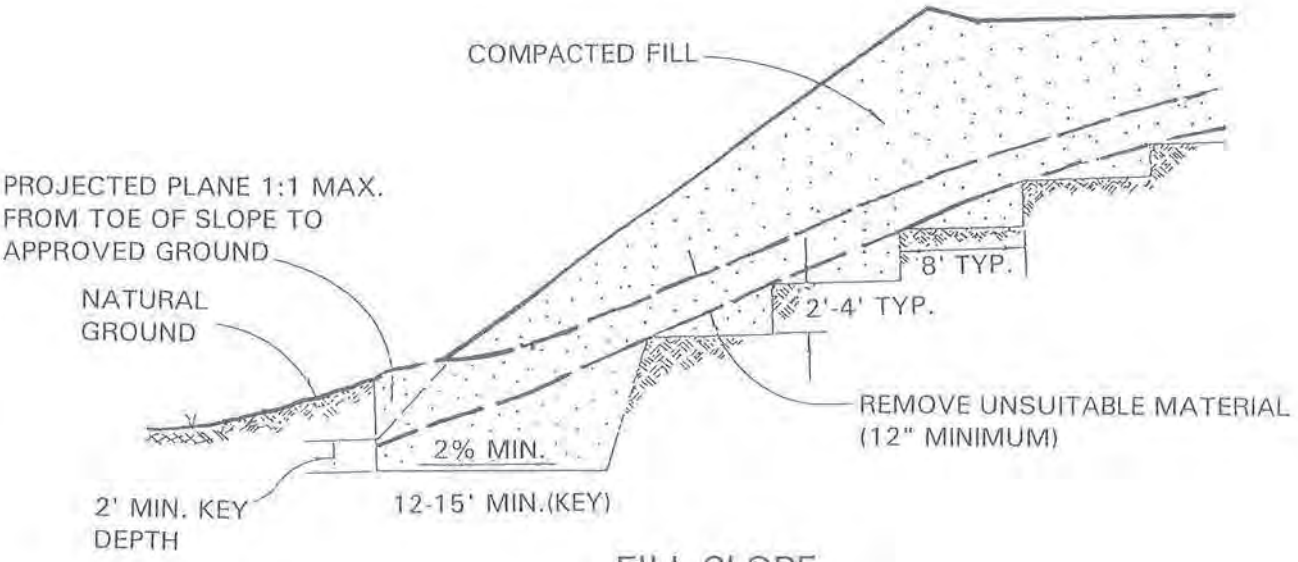
TEST PERIOD

INNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	10:15 10:45	30	30	4.66	13.28	0.559	1.594	34.2	32.4	2.3	2.2
30	60	10:45 11:15	30	60	4.74	17.96	0.569	2.156	34.8	43.9	2.3	2.9
30	90	11:15 11:45	30	90	4.11	14.91	0.493	1.790	30.2	36.4	2.0	2.4
30	120	11:50 12:20	30	120	4.06	11.65	0.487	1.399	29.8	28.4	2.0	1.9
30	150	12:20 12:50	30	150	4.05	12.95	0.486	1.555	29.7	31.6	2.0	2.1
30	180	12:50 13:20	30	180	3.92	12.33	0.471	1.480	28.8	30.1	1.9	2.0

APPENDIX E

Geotechnical Sketch

TYPICAL KEYING AND BENCHING DETAIL



FILL SLOPE

NOTES:
1) DIMENSIONS SHOWN SUBJECT TO FIELD CHANGE BASED ON ENGINEER'S JUDGEMENT
2) BENCHING REQUIRED WHEN FILLING OVER NATURAL GROUND STEEPER THAN 5H:1V

GEOTECHNICAL SKETCH

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	E-1
LOR Geotechnical Group, Inc.		DATE:	FEBUARY 2017
		SCALE:	NA

APPENDIX F

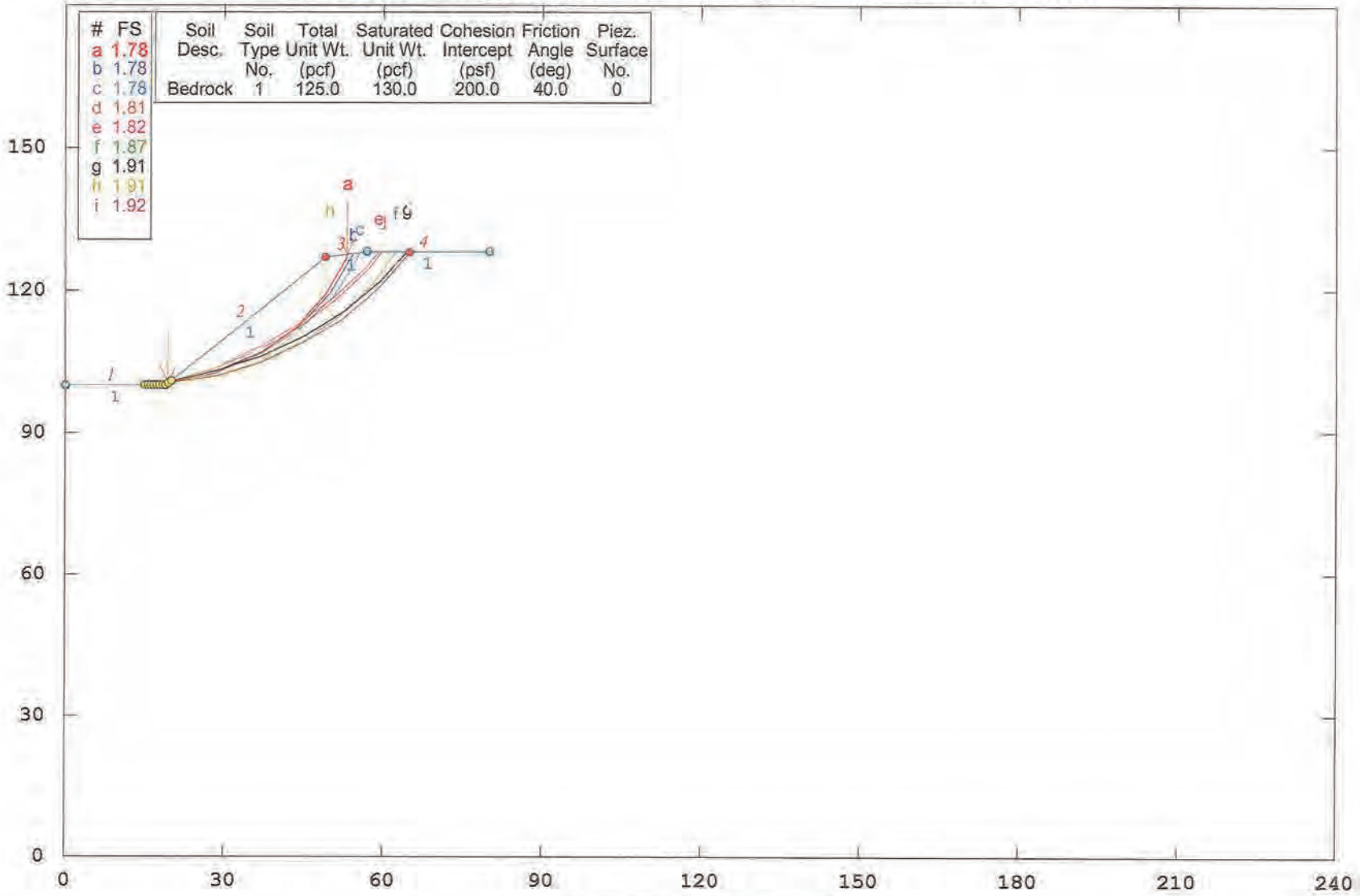
Slope Stability Calculations

27' Tall, 1.5:1 Cut Slope static analysis

C:\GABY\SLOPE\DATA\32289.1\AA2.PL2 Run By: Username 2/17/2017 1:30PM

#	FS
a	1.78
b	1.78
c	1.78
d	1.81
e	1.82
f	1.87
g	1.91
h	1.91
i	1.92

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Bedrock	1	125.0	130.0	200.0	40.0	0



PCSTABL5M/si FSmin=1.78

Safety Factors Are Calculated By The Modified Bishop Method

STED

```
                    ** PCSTABL5M **
                          by
                    Purdue University
                --Slope Stability Analysis--
              Simplified Janbu, Simplified Bishop
                or Spencer's Method of Slices
 Run Date:                    2/17/2017
 Time of Run:                 1:30PM
 Run By:                      Username
 Input Data Filename:         C:aa2.in
 Output Filename:             C:aa2.OUT
 Unit:                        ENGLISH
 Plotted Output Filename:     C:aa2.PLT
 PROBLEM DESCRIPTION   27' Tall, 1.5:1 Cut Slope
                       static analysis
 BOUNDARY COORDINATES
      Note: User origin value specified.
      Add 0.00 to X-values and 0.00 to Y-values listed.

     4 Top   Boundaries
     4 Total Boundaries
 Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          .00      100.00      19.00      100.00        1
     2        19.00      100.00      49.00      127.00        1
     3        49.00      127.00      57.00      128.00        1
     4        57.00      128.00      80.00      128.00        1
ISOTROPIC SOIL PARAMETERS
  1 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore    Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.   (pcf)     (pcf)     (psf)     (deg)   Param.     (psf)    No.
   1   125.0     130.0     200.0     40.0      .00        .0      0
 A Critical Failure Surface Searching Method, Using A Random
 Technique For Generating Circular Surfaces, Has Been Specified.
 100 Trial Surfaces Have Been Generated.
  10 Surfaces Initiate From Each Of 10 Points Equally Spaced
 Along The Ground Surface Between  X =  15.00 ft.
                                   and  X =  20.00 ft.
 Each Surface Terminates Between   X =  49.00 ft.
                                   and  X =  65.00 ft.
 Unless Further Limitations Were Imposed, The Minimum Elevation
 At Which A Surface Extends Is  Y =   .00 ft.
  9.00 ft. Line Segments Define Each Trial Failure Surface.
 Following Are Displayed The Ten Most Critical Of The Trial
 Failure Surfaces Examined.  They Are Ordered - Most Critical
 First.
 * * Safety Factors Are Calculated By The Modified Bishop Method * *
 Failure Surface Specified By  7 Coordinate Points
   Point      X-Surf      Y-Surf
    No.        (ft)        (ft)
     1        19.44       100.40
     2        28.19       102.51
     3        36.29       106.45
     4        43.35       112.03
     5        49.05       118.99
     6        53.13       127.01
     7        53.26       127.53
 Circle Center At X =   14.1 ; Y =  141.8  and Radius,   41.7
      ***     1.776   ***
      Individual data on the     7  slices
                 Water  Water     Tie     Tie     Earthquake
                 Force  Force    Force   Force       Force   Surcharge
Width   Weight    Top    Bot     Norm     Tan     Hor     Ver     Load
```

(ft)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
8.7	3152.5	.0	.0	.0	.0	.0	.0	.0
8.1	7526.0	.0	.0	.0	.0	.0	.0	.0
7.1	8386.0	.0	.0	.0	.0	.0	.0	.0
5.7	6342.7	.0	.0	.0	.0	.0	.0	.0
.1	50.3	.0	.0	.0	.0	.0	.0	.0
4.1	2169.1	.0	.0	.0	.0	.0	.0	.0
.1	4.2	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.74	103.04
3	36.85	106.94
4	43.98	112.43
5	49.82	119.28
6	54.12	127.19
7	54.26	127.66

Circle Center At X = 14.1 ; Y = 143.8 and Radius, 43.3
*** 1.781 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.76	102.95
3	36.95	106.70
4	44.22	112.00
5	50.30	118.64
6	54.93	126.35
7	55.45	127.81

Circle Center At X = 14.2 ; Y = 145.6 and Radius, 45.1
*** 1.781 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.54	103.74
3	36.67	107.61
4	44.25	112.45
5	51.18	118.20
6	57.35	124.75
7	59.72	128.00

Circle Center At X = 1.4 ; Y = 171.2 and Radius, 72.8
*** 1.814 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.44	104.01
3	36.48	108.07
4	44.01	113.00
5	50.93	118.76
6	57.15	125.26
7	59.23	128.00

Circle Center At X = -3.2 ; Y = 176.8 and Radius, 79.3
*** 1.818 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	19.44	100.40
2	28.31	101.94
3	36.81	104.90
4	44.72	109.20
5	51.83	114.72

```
    6          57.95       121.32
    7          62.37       128.00
Circle Center At X =   14.4 ; Y =  155.5  and Radius,   55.3
     ***     1.873   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          20.00       100.90
    2          28.75       103.01
    3          37.17       106.20
    4          45.12       110.41
    5          52.48       115.59
    6          59.14       121.65
    7          64.56       128.00
Circle Center At X =    7.6 ; Y =  171.6  and Radius,   71.8
     ***     1.911   ***
Failure Surface Specified By  6 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          19.44       100.40
    2          28.39       101.37
    3          36.62       105.02
    4          43.34       111.00
    5          47.93       118.75
    6          49.84       127.10
Circle Center At X =   20.8 ; Y =  129.5  and Radius,   29.1
     ***     1.915   ***
Failure Surface Specified By  8 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          19.44       100.40
    2          28.30       101.98
    3          36.84       104.83
    4          44.88       108.88
    5          52.25       114.04
    6          58.80       120.22
    7          64.39       127.27
    8          64.81       128.00
Circle Center At X =   13.1 ; Y =  162.0  and Radius,   61.9
     ***     1.921   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          20.00       100.90
    2          28.49       103.90
    3          36.69       107.59
    4          44.57       111.95
    5          52.06       116.94
    6          59.11       122.53
    7          64.94       128.00
Circle Center At X =  -12.1 ; Y =  205.1  and Radius,  109.0
     ***     1.933   ***
```

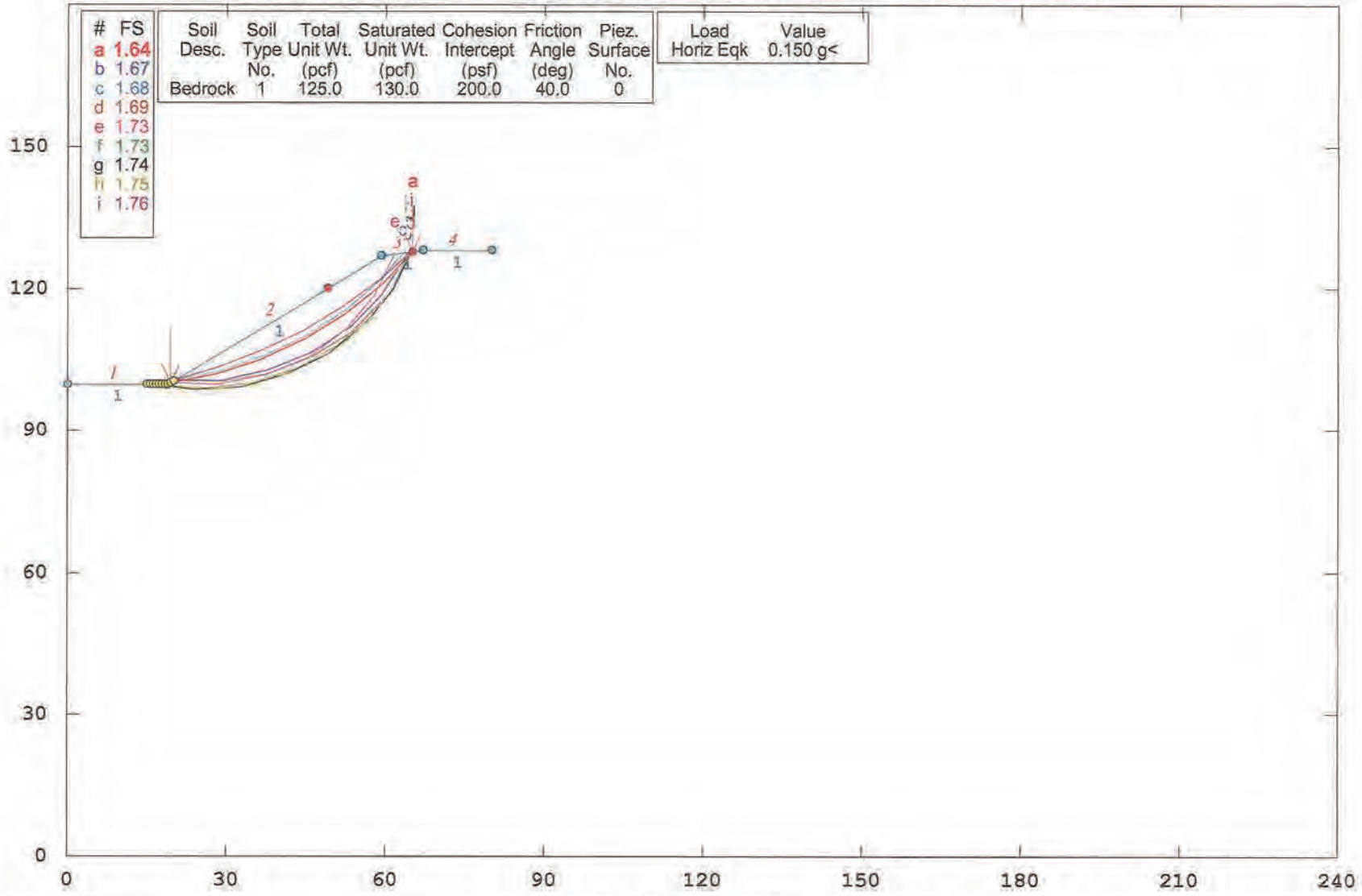
27' Tall, 1.5:1 Cut Slope psuedostatic analysis

C:\GABY\SLOPE\DATA\32289.1\AA2PS.PL2 Run By: Username 2/17/2017 1:24PM

#	FS
a	1.64
b	1.67
c	1.68
d	1.69
e	1.73
f	1.73
g	1.74
h	1.75
i	1.76

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Bedrock	1	125.0	130.0	200.0	40.0	0

Load	Value
Horiz Eqk	0.150 g<



PCSTABL5M/si FSmin=1.64

Safety Factors Are Calculated By The Modified Bishop Method

STED

** PCSTABL5M **
by
Purdue University
--Slope Stability Analysis--
Simplified Janbu, Simplified Bishop
or Spencer`s Method of Slices

Run Date: 2/17/2017
Time of Run: 1:24PM
Run By: Username
Input Data Filename: C:aa2ps.in
Output Filename: C:aa2ps.OUT
Unit: ENGLISH
Plotted Output Filename: C:aa2ps.PLT
PROBLEM DESCRIPTION 27' Tall, 1.5:1 Cut Slope
psuedostatic analysis

BOUNDARY COORDINATES
Note: User origin value specified.
Add 0.00 to X-values and 0.00 to Y-values listed.

4 Top Boundaries
4 Total Boundaries

Boundary No.	X-Left (ft)	Y-Left (ft)	X-Right (ft)	Y-Right (ft)	Soil Type Below Bnd
1	.00	100.00	19.00	100.00	1
2	19.00	100.00	59.00	127.00	1
3	59.00	127.00	67.00	128.00	1
4	67.00	128.00	80.00	128.00	1

ISOTROPIC SOIL PARAMETERS
1 Type(s) of Soil

Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Param.	Pressure Constant (psf)	Piez. Surface No.
1	125.0	130.0	200.0	40.0	.00	.0	0

A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned
A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned
Cavitation Pressure = .0 (psf)
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
100 Trial Surfaces Have Been Generated.
10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between X = 15.00 ft.
and X = 20.00 ft.
Each Surface Terminates Between X = 49.00 ft.
and X = 65.00 ft.
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is Y = .00 ft.
9.00 ft. Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined. They Are Ordered - Most Critical
First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	19.44	100.30
2	28.23	102.26
3	36.69	105.32
4	44.70	109.44
5	52.11	114.54
6	58.81	120.55
7	64.70	127.36
8	64.95	127.74

Circle Center At X = 8.6 ; Y = 169.8 and Radius, 70.3
*** 1.638 ***
Individual data on the 8 slices

Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Surcharge Ver (lbs)	Surcharge Load (lbs)
8.8	2179.4	.0	.0	.0	.0	326.9	.0	.0
8.5	5601.1	.0	.0	.0	.0	840.2	.0	.0
8.0	7266.3	.0	.0	.0	.0	1089.9	.0	.0
7.4	7282.1	.0	.0	.0	.0	1092.3	.0	.0
6.7	5923.3	.0	.0	.0	.0	888.5	.0	.0
.2	146.5	.0	.0	.0	.0	22.0	.0	.0
5.7	2348.5	.0	.0	.0	.0	352.3	.0	.0
.3	5.7	.0	.0	.0	.0	.9	.0	.0

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	29.00	100.93
3	37.75	103.01
4	45.91	106.81
5	53.13	112.18
6	59.12	118.91
7	63.62	126.70
8	63.92	127.61

Circle Center At X = 23.3 ; Y = 144.6 and Radius, 44.0
*** 1.668 ***
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	28.73	102.87
3	37.10	106.16
4	44.99	110.51
5	52.24	115.83
6	58.75	122.05
7	63.18	127.52

Circle Center At X = 7.4 ; Y = 169.3 and Radius, 69.8
*** 1.677 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	29.00	100.51
3	37.83	102.25
4	46.10	105.81
5	53.43	111.02
6	59.50	117.67
7	64.04	125.44
8	64.79	127.72

Circle Center At X = 25.3 ; Y = 142.4 and Radius, 42.1
*** 1.694 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	19.44	100.30
2	28.44	100.03
3	37.25	101.87
4	45.38	105.74
5	52.37	111.41
6	57.83	118.56
7	61.46	126.80
8	61.55	127.32

Circle Center At X = 25.1 ; Y = 137.8 and Radius, 37.9
*** 1.725 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	16.67	100.00
2	25.63	99.15
3	34.56	100.26
4	43.03	103.29
5	50.65	108.09
6	57.04	114.43
7	61.90	122.00
8	63.96	127.62

Circle Center At X = 25.1 ; Y = 139.9 and Radius, 40.8
*** 1.727 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	15.00	100.00
2	23.92	98.79
3	32.89	99.51
4	41.50	102.14
5	49.34	106.55
6	56.06	112.54
7	61.34	119.83
8	64.79	127.72

Circle Center At X = 25.1 ; Y = 140.5 and Radius, 41.7
*** 1.744 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	16.67	100.00
2	25.60	98.87
3	34.55	99.78
4	43.07	102.67
5	50.73	107.40
6	57.13	113.73
7	61.94	121.33
8	64.16	127.65

Circle Center At X = 26.1 ; Y = 138.4 and Radius, 39.5
*** 1.755 ***
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	28.52	103.58
3	36.75	107.22
4	44.64	111.56
5	52.11	116.57
6	59.13	122.21
7	64.90	127.74

Circle Center At X = -9.1 ; Y = 200.0 and Radius, 103.5
*** 1.757 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	15.56	100.00
2	24.46	98.67
3	33.43	99.40
4	42.00	102.15
5	49.72	106.78
6	56.19	113.04
7	61.06	120.60
8	63.56	127.57

APPENDIX H

MORENO VALLEY RANCH
GOLF COURSE PROJECT

TRAFFIC IMPACT ANALYSIS (REVISED)

February 8, 2018

Prepared by:

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JN 6639

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I. INTRODUCTION AND SUMMARY

A. Purpose of Report and Study Objectives

The purpose of this traffic impact analysis is to evaluate the development of the proposed Moreno Valley Ranch Golf Course project. This report presents the traffic impact study methodology, analysis, findings, recommendations, and supporting data.

The study objectives include documentation of existing traffic conditions in the vicinity of the site; evaluation of traffic conditions for existing plus project; determination of traffic conditions for the year at opening (2022) of the proposed project; analysis of traffic conditions for the Year 2040; and determination of on-site and off-site improvements and system management actions needed to achieve City of Moreno Valley Level of Service requirements.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

B. Definition of Deficiency and Significant Impact

The traffic impact study methodology is consistent with the County of Riverside Transportation Department Traffic Impact Analysis Preparation Guide. The City of Moreno Valley was contacted for input on the scope of the study and information on other developments.

As required by the City of Moreno Valley, this report analyzes the traffic impacts of the proposed project in accordance with the City of Moreno Valley General Plan Circulation Element, City of Moreno Valley Department Traffic Impact Analysis Preparation Guide, and Riverside County Transportation Department Traffic Impact Analysis Preparation Guide. The following definitions of deficiencies and significant impacts have been developed in accordance with the City of Moreno Valley requirements:

1. Roadway Segment Levels of Service Criteria

   Roadway capacity is generally defined as the number of vehicles that can be reasonably expected to pass over a given section of road in a given time period. Using the Roadway Capacity/Level of Service values, the traffic volumes are used to determine the level of service on the roadway segment.

   The City of Moreno Valley has established, as a Citywide target, a Level of Service C on all City maintained roads and conventional State Highways, except that a Level of Service D could be allowed at areas of high employment concentration, north/south roads in the vicinity of the SR-60 Freeway or locations in already developed areas of the City with geometric constrains that prevent Level of Service C from being achieved.

2. Intersection Levels of Service Criteria

The City has established Level of Service requirements for all intersections within the City. Level of Service C will be the design objective for all movements and under no circumstance will be less than Level of Service D (during peak hour), volume-to-capacity of 0.90, for site and non-site traffic at the build-out of the study area.

C. Executive Summary

1. Site Location and Study Area

The project site is located east of Moreno Beach Drive between John F. Kennedy Drive and Championship Drive in the City of Moreno Valley.

Pursuant to the scoping discussions with City of Moreno Valley staff, the study area includes the following roadway segments and intersections (see Appendix B):

Study Roadway	Segment
Moreno Beach Drive	North of SR-60 Freeway WB Ramps
	SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
	SR-60 Freeway EB Ramps to Eucalyptus Avenue
	South of Eucalyptus Avenue
	North of Cottonwood Avenue
	Cottonwood Avenue to Alessandro Boulevard
	Alessandro Boulevard to Cactus Avenue
	Cactus Avenue to John F. Kennedy Drive
	John F. Kennedy Drive to Project Access
	South of Project Access
Alessandro Boulevard	West of Moreno Beach Drive
Cactus Avenue	West of Moreno Beach Drive
John F. Kennedy Drive	West of Moreno Beach Drive
	Moreno Beach Drive to Championship Drive
	East of Championship Drive

Study Intersection	Jurisdiction
Moreno Beach Drive (NS) at:	
SR-60 Freeway WB Ramps (EW) - #1	California Dept. of Transportation
SR-60 Freeway EB Ramps (EW) - #2	California Dept. of Transportation
Eucalyptus Avenue (EW) - #3	City of Moreno Valley
Cottonwood Avenue (EW) - #4	City of Moreno Valley
Alessandro Boulevard (EW) - #5	City of Moreno Valley
Cactus Avenue (EW) - #6	City of Moreno Valley
John F. Kennedy Drive (EW) - #7	City of Moreno Valley
Project Access (EW) - #8	City of Moreno Valley
Championship Drive (EW) - #9	City of Moreno Valley

Study Intersection	Jurisdiction
Stephenson Street/Project Access (NS) at:	
John F. Kennedy Drive (EW) - #10	City of Moreno Valley
Pete Dye Street/Bay Hill Drive (NS) at:	
John F. Kennedy Drive (EW) - #11	City of Moreno Valley
Championship Drive (NS) at:	
John F. Kennedy Drive (EW) - #12	City of Moreno Valley

2. Development Description

The project site is proposed to be developed with 417 multi-family attached residential (apartment) dwelling units and an 18-hole golf course. The project site is proposed to provide access to Moreno Beach Drive, John F. Kennedy Drive, and Championship Drive (emergency vehicle only access).

The current General Plan zoning for the approximately 19.0 acre site is OS. Open space typically generates nominal trips.

The previous land use located on the proposed multi-family attached residential (apartment) site was a 27-hole golf course. A driving range has the potential to generate significant trips.

3. Principal Findings

a. For Existing traffic conditions, the study intersections currently operate at acceptable Levels of Service during the peak hours, except for the following study intersection that currently operates at an unacceptable Level of Service during the morning peak hour:

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

b. For Existing traffic conditions, the following study roadway segments appear to currently operate at unacceptable Levels of Service:

Moreno Beach Drive
North of Cottonwood Avenue
Alessandro Boulevard to Cactus Avenue

c. The proposed project is projected to generate a total of approximately 3,599 daily vehicle trips, 224 of which occur during the morning peak hour and 286 of which occur during the evening peak hour.

d. For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the morning peak hour without improvements:

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

e. For Existing Plus Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Alessandro Boulevard to Cactus Avenue

f. For Opening Year (2022) Without Project traffic conditions, the study intersections are projected to operate at within acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the morning peak hour without improvements:

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Opening Year (2022) Without Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Alessandro Boulevard to Cactus Avenue

g. For Opening Year (2022) With Project traffic conditions, the following study intersections are projected to operate at within acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours without improvements:

Moreno Beach Drive (NS) at:
Alessandro Boulevard (EW) - #5

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Opening Year (2022) With Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Cottonwood Avenue to Alessandro Boulevard
Alessandro Boulevard to Cactus Avenue

h. For Year 2040 Without Project traffic conditions, the following study intersections are projected to operate at within acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours without improvements:

Moreno Beach Drive (NS) at:
SR-60 Freeway EB Ramps (EW) - #2
Cottonwood Avenue (EW) - #4
Alessandro Boulevard (EW) - #5
Championship Drive (EW) - #9

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Year 2040 Without Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
North of SR-60 Freeway WB Ramps
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Cottonwood Avenue to Alessandro Boulevard
Alessandro Boulevard to Cactus Avenue

Alessandro Boulevard
West of Moreno Beach Drive

i. For Year 2040 With Project traffic conditions, the following study intersections are projected to operate at within acceptable Levels of Service during the peak

hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours without improvements:

Moreno Beach Drive (NS) at:
SR-60 Freeway EB Ramps (EW) - #2
Cottonwood Avenue (EW) - #4
Alessandro Boulevard (EW) - #5
Championship Drive (EW) - #9

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Year 2040 With Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
North of SR-60 Freeway WB Ramps
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Cottonwood Avenue to Alessandro Boulevard
Alessandro Boulevard to Cactus Avenue

Alessandro Boulevard
West of Moreno Beach Drive

j. The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual of Uniform Traffic Control Devices (2014).

k. The vehicle queuing storage lengths have been evaluated for the study intersections adjacent to the project site using the forecast 95th percentile queue lengths using the Vistro traffic analysis software.

4. Recommendations

Site-specific circulation and access recommendations are depicted on Figure 38.

Construct and/or repair Championship Drive at proposed project access driveway, from the west project boundary to the east project boundary at its ultimate half-section width in conjunction with development, including landscaping and parkway improvements, as necessary.

Construct and/or repair Moreno Beach Drive at proposed project access driveway, from the north project boundary to the south project boundary its ultimate half-section width in conjunction with development, including landscaping and parkway improvements, as necessary.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at project accesses shall comply with standard California Department of Transportation and City of Moreno Valley sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

As is the case for any roadway design, the City of Moreno Valley should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

II. PROPOSED DEVELOPMENT

This section discusses the project's location and proposed development. Figure 1 shows the project location, and Figure 2 illustrates the site plan.

A. Location

The project site is located east of Moreno Beach Drive between John F. Kennedy Drive and Championship Drive in the City of Moreno Valley. Figure 1 shows the project location map.

B. Land Use and Intensity

The project site is proposed to be developed with 417 multi-family attached residential (apartment) dwelling units and an 18-hole golf course. The project site is proposed to provide access to Moreno Beach Drive and John F. Kennedy Drive. A third project access on Championship Drive shall be restricted to emergency vehicle only access (no residential/golf course access).

The current General Plan zoning for the approximately 19.0 acre site is OS. Open space typically generates nominal trips.

The previous land use located on the proposed multi-family attached residential (apartment) site was a 27-hole golf course. A driving range has the potential to generate significant trips.

C. Site Plan

Figure 2 illustrates the project site plan.

D. Phasing and Timing

For the purposes of this traffic impact analysis, the proposed project is anticipated for opening in Year 2022 and is proposed to be built in one continuous phase.

E. Project Access

The project site is proposed to provide three access driveways located on the northeast, west, and south sides of the project. This provides alternative points for emergency access to the project site. The project access driveways shall be constructed in conjunction with the proposed project. The existing northeast access at Stephenson Street/Project Access driveway is proposed to provide full access to the golf course and residential development. The proposed west Moreno Beach Drive/Project Access driveway is proposed to provide restricted access with right turns in/out only for the residential development. The proposed emergency vehicle only access on Championship Drive shall be controlled by a gate at all times. This gate will only be assessable by emergency service personnel/vehicles (no residential/golf course).

Figure 1. Project Location Map

Figure 2. Site Plan

III. EXISTING CONDITIONS

Traffic conditions as they exist today are discussed below for study roadways and intersections.

A. Study Area Land Use

The project site is currently developed but does not generate significant trips. The properties adjacent to the project site are currently developed. The properties surrounding the project site include residential and golf course land uses.

B. Site Accessibility

1. Area Roadway System

Figure 3 identifies the Existing roadway conditions for study roadways. The Existing number of through lanes for roadways and the intersection controls are identified.

2. Existing Traffic Volumes and Level of Service

Figure 4 depicts the Existing average daily traffic volumes. Existing average daily traffic volumes were obtained from manual 24-hour directional tube counts obtained by Kunzman Associates, Inc. in November 2016 (see Appendix C) and from the California Department of Transportation Annual Average Daily Traffic (2015).

Existing volume to capacity ratios and levels of service have been calculated for the study roadways and are shown in Table 1. Roadway capacity is generally defined as the number of vehicles that can be reasonably expected to pass over a given section of road in a given time period, and is defined below:

Roadway Type	Design Capacity (Level of Service C)	Maximum Capacity (Level of Service E)
Divided Major Arterial	45,000	56,250
Modified Divided Major Arterial	30,000	37,500
Arterial	30,000	37,500
Minor Arterial	20,000	25,000

For roadway segment volume to capacity ratios, the following Level of Service definitions have been used:

Level of Service A = Volume to Capacity Ratio 0.000 to 0.600
Level of Service B = Volume to Capacity Ratio 0.601 to 0.700
Level of Service C = Volume to Capacity Ratio 0.701 to 0.800
Level of Service D = Volume to Capacity Ratio 0.801 to 0.900
Level of Service E = Volume to Capacity Ratio 0.901 to 1.000
Level of Service F = Volume to Capacity Ratio 1.001 and up

For Existing traffic conditions, the following study roadway segments appear to currently operate at unacceptable Levels of Service (see Table 1):

Moreno Beach Drive
North of Cottonwood Avenue
Alessandro Boulevard to Cactus Avenue

The technique used to assess the capacity needs of an intersection is known as the delay methodology (see Appendix F) based on the Highway Capacity Manual – Transportation Research Board Special Report 209. To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection. It should be noted that the signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined Level of Service standard. The volume to capacity ratio is defined as the critical volumes divided by the intersection capacity. A volume to capacity ratio greater than 1.0 implies that the traffic volume demand is greater than the capacity of the intersection and as a result traffic may begin to queue during the analyzed peak hour.

The existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 2. Existing delay is based upon manual morning and evening peak hour intersection turning movement counts obtained by Kunzman Associates, Inc. in November 2016 (see Figures 5 and 6). Intersection turning movement volume count worksheets are provided in Appendix C.

For Existing traffic conditions, the study intersections currently operate at acceptable Levels of Service during the peak hours, except for the following study intersection that currently operates at an unacceptable Level of Service during the morning peak hour:

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

Existing delay worksheets are provided in Appendix F.

C. Areawide Circulation and General Plan Elements

1. General Plan Circulation Element

Figure 7 exhibits the current City of Moreno Valley General Plan Circulation Element. Existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 7. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan. The City of Moreno Valley General Plan roadway cross-sections are shown on Figure 8.

2. Transit Service

The study area is currently served by Riverside Transit Agency Routes 20, 35, and 210 along Nason Street, Eucalyptus Avenue, and Alessandro Boulevard. The existing bus routes provided within the study area are shown on Figure 9.

The existing bus stop (Stop Id. 2184) on northbound Moreno Beach Drive will be approximately 300 feet south of the Moreno Beach Drive entry. A bus parked at this location would be in the corner sight distance of a vehicle exiting the project for by the far right hand lane. However any vehicle behind the bus would also be blocked by the bus. There appears to be a clear line of sight for the other two northbound lanes.

3. Bicycle Facilities

The City of Moreno Valley bike paths are illustrated on Figure 10.

Moreno Beach Drive adjacent to the project is classified as a Class II Bike Lane. The striping for this designated bike lane currently exists and should not be affected by the project other than the potential for minor striping modification at the project entry on Moreno Beach Drive.

John F Kennedy Drive east of the Moreno Beach Drive intersection is classified as a Class III Bike Route. A bike route is not a designated lane but a shared traffic lane or pedestrian path.

4. Pedestrian Facilities

Existing pedestrian facilities are illustrated on Figure 11.

Table 1. Existing Roadway Segment Level of Service

Table 2. Existing Intersection Delay and Level of Service

Figure 3. Existing Through Travel Lanes and Intersection Controls

Figure 4. Existing Average Daily Traffic Volumes

Figure 5. Existing Morning Peak Hour Intersection Turning Movement Volumes

Figure 6. Existing Evening Peak Hour Intersection Turning Movement Volumes

Figure 7. City of Moreno Valley General Plan Circulation Element

Figure 8. City of Moreno Valley General Plan Roadway Cross-Sections

Figure 9. City of Moreno Valley Transit Routes

Figure 10. City of Moreno Valley Bikeways

Figure 11. Existing Pedestrian Facilities

IV. PROJECT TRIPS

The project site is proposed to be developed with 417 multi-family attached residential (apartment) dwelling units and an 18-hole golf course. The project site is proposed to provide access to Moreno Beach Drive, John F. Kennedy Drive, and Championship Drive (emergency vehicle only access).

The current General Plan zoning for the approximately 19.0 acre site is OS. Open space typically generates nominal trips.

The previous land use located on the proposed multi-family attached residential (apartment) site was a 27-hole golf course. A driving range has the potential to generate significant trips.

A. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land uses. By multiplying the trip generation rates by the land use quantities, the traffic volumes are determined. Table 3 exhibits the trip generation rates, project peak hour volumes, and project daily traffic volumes. The trip generation rates are from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

The project is projected to generate a total of approximately 3,599 daily vehicle trips, 224 of which occur during the morning peak hour and 286 of which occur during the evening peak hour.

The current General Plan zoning for the approximately 19.0 acre site is Open Space. If developed with the current General Plan zoning, the project would be expected to generate approximately 19 daily vehicle trips, 4 of which occur during the morning peak hour and 4 of which occur during the evening peak hour.

B. Trip Distribution

Figures 12 to 15 contain the directional distributions of the project trips for the proposed project.

To determine the trip distributions for the proposed project, peak hour and daily traffic counts of the existing directional distribution of traffic volumes for existing areas in the vicinity of the site, and other additional information on future development and traffic impacts in the area were reviewed.

C. Trip Assignment

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 16. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 17 to 18, respectively.

D. Modal Split

The project trip reducing potential of public transit has not been considered in this report. Essentially the project trip projections are conservative in that public transit might be able to reduce the traffic volumes.

Table 3. Project Trip Generation

Figure 12. Project Outbound Trip Distribution - Apartments

Figure 13. Project Inbound Trip Distribution - Apartments

Figure 14. Project Outbound Trip Distribution – Golf Course

Figure 15. Project Inbound Trip Distribution – Golf Course

Figure 16. Project Average Daily Traffic Volumes

Figure 17. Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 18. Project Evening Peak Hour Intersection Turning Movement Volumes

V. EXISTING PLUS PROJECT TRAFFIC CONDITIONS

To assess existing plus project traffic conditions, existing traffic volumes are combined with project trips.

A. Roadway Segment Analysis

Figure 19 shows the average daily traffic volumes that can be expected for Existing Plus Project traffic conditions. For Existing Plus Project traffic conditions, existing traffic volumes are combined with trips generated by the project.

The roadway segment Levels of Service for Existing Plus Project traffic conditions are shown in Table 4. For Existing Plus Project traffic conditions, the following study roadway segments are projected to operate at unacceptable Levels of Service, without improvements:

Moreno Beach Drive
- SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
- North of Cottonwood Avenue
- Alessandro Boulevard to Cactus Avenue

For Existing Plus Project traffic conditions, the study roadway segments are projected to operate within acceptable Levels of Service, with improvements.

B. Intersection Delay and Level of Service Analysis

The technique used to assess the capacity needs of an intersection is known as the delay methodology. Delay and Level of Service worksheets for each analysis scenario are provided in Appendix F. Morning and evening peak hour intersection turning movement volumes expected for Existing Plus Project traffic conditions are shown on Figures 20 and 21, respectively.

The Existing Plus Project delay and Level of Service for the study intersections are shown in Table 5. For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the morning peak hour, without improvements:

Stephenson Street/Project West Access (NS) at:
- John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
- John F. Kennedy Drive (EW) - #11

For Existing Plus Project traffic conditions, the study intersections are projected to operate within acceptable Levels of Service, with improvements.

Table 4. Existing Plus Project Roadway Segment Level of Service

Table 5. Existing Plus Project Intersection Delay and Level of Service

Figure 19. Existing Plus Project Average Daily Traffic Volumes

Figure 20. Existing Plus Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 21. Existing Plus Project Evening Peak Hour Intersection Turning Movement Volumes

VI. OPENING YEAR (2022) TRAFFIC CONDITIONS

To assess near-future traffic conditions, traffic volumes are forecast using a conservative annual growth rate. The Opening Year for analysis purposes in this report is Year 2022.

A. Method of Projection

1. Background Traffic

To assess background traffic conditions, existing traffic volumes are combined with ambient growth, and cumulative development trips. The opening year for analysis purposes in this report is 2022.

2. Ambient Growth

To account for ambient growth on roadways, Existing Plus Ambient Growth traffic volumes have been calculated based on a "conservative" 2.0 percent annual growth rate of existing traffic volumes over a five (5) year period.

3. Cumulative Development

Potential developments within the study area are included in the analysis if they are not currently built, they are approved, their approval has not expired, and they would contribute trips to the study intersections.

The current Economic Development New Development Activity Map from the City of Moreno Valley website was utilized to determine the list of cumulative development in the study area (see Figure 22). In order to provide a "conservative" analysis, the cumulative development has been added to obtain Existing Plus Ambient Growth Plus Cumulative traffic conditions (i.e., Opening Year 2022 Without Project). Tables 6 and 7 show the cumulative development daily and peak hour trip generation. Figure 23 shows the cumulative development average daily traffic volumes. Cumulative development morning and evening peak hour intersection turning movement volumes are shown on Figures 24 and 25, respectively.

B. Roadway Segment Analysis

1. Opening Year (2022) Without Project

Figure 26 shows the average daily traffic volumes that can be expected for Opening Year (2022) Without Project traffic conditions.

The roadway segment Levels of Service for Opening Year (2022) Without Project conditions are shown in Table 8. For Opening Year Without Project traffic conditions, the following study roadway segments are projected to operate at an unacceptable Level of Service, without improvements:

Moreno Beach Drive
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Alessandro Boulevard to Cactus Avenue

For Opening Year (2022) Without Project traffic conditions, the study roadway segments are projected to operate within acceptable Levels of Service, with improvements.

2. Opening Year (2022) With Project

Figure 27 shows the average daily traffic volumes that can be expected for Opening Year (2022) With Project traffic conditions. For Opening Year (2022) With Project traffic conditions, Opening Year (2022) Without Project traffic volumes are combined with trips generated by the project.

The roadway segment Levels of Service for Opening Year (2022) With Project conditions are shown in Table 9. For Opening Year (2022) With Project traffic conditions, the following study roadway segments are projected to operate at an unacceptable Levels of Service, without improvements:

Moreno Beach Drive
SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
North of Cottonwood Avenue
Cottonwood Avenue to Alessandro Boulevard
Alessandro Boulevard to Cactus Avenue

For Opening Year (2022) With Project traffic conditions, the study roadway segments are projected to operate within acceptable Levels of Service, with improvements.

C. Intersection Delay and Level of Service Analysis

The technique used to assess the capacity needs of an intersection is known as the delay methodology. Delay and Level of Service worksheets for each analysis scenario are provided in Appendix F.

1. Opening Year (2022) Without Project

The Opening Year (2022) Without Project delay and Level of Service for the study intersections are shown in Table 10. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 28 and 29, respectively. For Opening Year (2022) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the morning peak hour, without improvements:

Stephenson Street/Project West Access (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Opening Year (2022) Without Project traffic conditions, the study intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

2. Opening Year (2022) With Project

The Opening Year (2022) With Project delay and Level of Service for the study intersections are shown in Table 11. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 30 and 31, respectively. For Opening Year (2020) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service, except for the following study intersections which are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Moreno Beach Drive (NS) at:
Alessandro Boulevard (EW) - #5

Stephenson Street/Project West Access (NS) at:
John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

For Opening Year (2022) With Project traffic conditions, the study intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

Table 6. Cumulative Development Trip Generation (Part 1 of 2)

Table 7. Cumulative Development Trip Generation (Part 2 of 2)

Table 8. Opening Year (2022) Without Project Roadway Segment Level of Service

Table 9. Opening Year (2022) With Project Roadway Segment Level of Service

Table 10. Opening Year (2022) Without Project Intersection Delay and Level of Service

Table 11. Opening Year (2022) With Project Intersection Delay and Level of Service

Figure 22. Cumulative Development Traffic Analysis Zone Map

Figure 23. Cumulative Development Average Daily Traffic Volumes

Figure 24. Cumulative Development Morning Peak Hour Intersection Turning Movement Volumes

Figure 25. Cumulative Development Evening Peak Hour Intersection Turning Movement Volumes

Figure 26. Opening Year (2022) Without Project Average Daily Traffic Volumes

Figure 27. Opening Year (2022) With Project Average Daily Traffic Volumes

Figure 28. Opening Year (2022) Without Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 29. Opening Year (2022) Without Project Evening Peak Hour Intersection Turning Movement Volumes

Figure 30. Opening Year (2022) With Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 31. Opening Year (2022) With Project Evening Peak Hour Intersection Turning Movement Volumes

VII. YEAR 2040 TRAFFIC CONDITIONS

To assess future traffic conditions, the Moreno Valley Traffic Model data is used for Year 2040.

A. Method of Projection

Based upon discussions with City of Moreno Valley, the Year 2040 traffic volume forecasts have been determined using the City of Moreno Valley Traffic Model data based on the Riverside County Traffic Analysis Model (RivTAM) (see Appendix D).

The Year 2040 traffic volumes are shown in Appendix E.

B. Roadway Segment Analysis

1. Year 2040 Without Project

Figure 32 shows the average daily traffic volumes that can be expected for Year 2040 Without Project traffic conditions.

The roadway segment Levels of Service for Year 2035 Without Project conditions are shown in Table 12. For Year 2040 Without Project traffic conditions, the following study roadway segments are projected to operate at an unacceptable Levels of Service, without improvements:

Moreno Beach Drive
- North of SR-60 Freeway WB Ramps
- SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
- North of Cottonwood Avenue
- Cottonwood Avenue to Alessandro Boulevard
- Alessandro Boulevard to Cactus Avenue

Alessandro Boulevard
- West of Moreno Beach Drive

For Year 2040 Without Project traffic conditions, the study roadway segments are projected to operate within acceptable Levels of Service, with improvements.

2. Year 2040 With Project

Figure 33 shows the average daily traffic volumes that can be expected for Year 2040 With Project traffic conditions. For Year 2040 With Project traffic conditions, Year 2040 Without Project traffic volumes are combined with trips generated by the project.

The roadway segment Levels of Service for Year 2040 With Project conditions are shown in Table 13. For Year 2040 With Project traffic conditions, the following study

roadway segments are projected to operate at an unacceptable Levels of Service, without improvements:

Moreno Beach Drive
- North of SR-60 Freeway WB Ramps
- SR-60 Freeway WB Ramps to SR-60 Freeway EB Ramps
- North of Cottonwood Avenue
- Cottonwood Avenue to Alessandro Boulevard
- Alessandro Boulevard to Cactus Avenue

Alessandro Boulevard
- West of Moreno Beach Drive

For Year 2040 With Project traffic conditions, the study roadway segments are projected to operate within acceptable Levels of Service, with improvements.

C. Intersection Delay and Level of Service Analysis

The technique used to assess the capacity needs of an intersection is known as the Delay methodology. Delay and Level of Service worksheets for each analysis scenario are provided in Appendix F.

1. Year 2040 Without Project

The Year 2040 Without Project delay and Level of Service for the study intersections are shown in Table 14. Morning and evening peak hour intersection turning movement volumes expected for Year 2040 Without Project traffic conditions are shown on Figures 34 and 35, respectively. For Year 2040 Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service, except for the following study intersections which are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Moreno Beach Drive (NS) at:
- SR-60 Freeway EB Ramps (EW) - #2
- Cottonwood Avenue (EW) - #4
- Alessandro Boulevard (EW) - #5
- Championship Drive (EW) - #9

Stephenson Street/Project West Access (NS) at:
- John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
- John F. Kennedy Drive (EW) - #11

For Year 2040 Without Project traffic conditions, the study intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

2. Year 2040 With Project

The Year 2040 With Project delay and Level of Service for the study intersections are shown in Table 15. Morning and evening peak hour intersection turning movement volumes expected for Year 2040 With Project traffic conditions are shown on Figures 36 and 37, respectively. For Year 2040 With Project traffic conditions, , the study intersections are projected to operate at acceptable Levels of Service, except for the following study intersections which are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Moreno Beach Drive (NS) at:
- SR-60 Freeway EB Ramps (EW) - #2
- Cottonwood Avenue (EW) - #4
- Alessandro Boulevard (EW) - #5
- Championship Drive (EW) - #9

Stephenson Street/Project West Access (NS) at:
- John F. Kennedy Drive (EW) - #10

Pete Dye Street/Bay Hill Drive (NS) at:
- John F. Kennedy Drive (EW) - #11

For Year 2040 With Project traffic conditions, the study intersections are projected to operate within acceptable Levels of Service during the peak hours, with improvements.

D. Traffic Signal Warrant Analysis

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual of Uniform Traffic Control Devices (2014).

Based on peak hour volumes, a traffic signal is forecast to be warranted at the following study intersection for the Year 2040 With Project traffic conditions (see Appendix G):

Stephenson Street (NS) at:
- John F. Kennedy Drive (EW) - #10

It should be noted that based on peak hour volumes, a traffic signal is at the threshold to be warranted at the Stephenson Street/John F. Kennedy Drive intersection for Opening Year (2022) With Project traffic conditions (see Appendix G).

Table 12. Year 2040 Without Project Roadway Segment Level of Service

Table 13. Year 2040 With Project Roadway Segment Level of Service

Table 14. Year 2040 Without Project Intersection Delay and Level of Service

Table 15. Year 2040 With Project Intersection Delay and Level of Service

Figure 32. Year 2040 Without Project Average Daily Traffic Volumes

Figure 33. Year 2040 With Project Average Daily Traffic Volumes

Figure 34. Year 2040 Without Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 35. Year 2040 Without Project Evening Peak Hour Intersection Turning Movement Volumes

Figure 36. Year 2040 With Project Morning Peak Hour Intersection Turning Movement Volumes

Figure 37. Year 2040 With Project Evening Peak Hour Intersection Turning Movement Volumes

VIII. OTHER TRAFFIC CONSIDERATIONS

Additional concerns which may affect the operational characteristics of study roadway facilities or which may require mitigation are discussed below.

A. Traffic Signal Warrant Analysis

The unsignalized intersections have been evaluated for traffic signals using the California Department of Transportation Warrant 3 Peak Hour traffic signal warrant analysis, as specified in the California Manual of Uniform Traffic Control Devices (2014).

Based on peak hour volumes, a traffic signal is forecast to be warranted at the following study intersection for Year 2040 With Project traffic conditions (see Appendix G):

Stephenson Street (NS) at:
John F. Kennedy Drive (EW) - #10

It should be noted that based on peak hour volumes, a traffic signal is at the threshold to be warranted at the Stephenson Street/John F. Kennedy Drive intersection for Opening Year (2022) With Project traffic conditions (see Appendix G).

Based on peak hour volumes, traffic signals are forecast to not be warranted at the following study intersections (see Appendix G):

Moreno Beach Drive (NS) at:
Championship Drive (EW) - #9

Pete Dye Street/Bay Hill Drive (NS) at:
John F. Kennedy Drive (EW) - #11

An analysis of the number of traffic accidents reported in the study roadway segments over the last three years have been conducted. The accident record data has been obtained from the California Highway Patrol, Statewide Integrated Traffic Records System (SWITRS) from January 01, 2014 to December 31, 2016. The accident reports are included in Appendix H.

During the three year period of 2014 to 2016, 2 collisions occurred at or near the Moreno Beach Drive/ Championship Drive intersection. As specified in the California Manual of Uniform Traffic Control Devices (2014), 5 accidents per year at an unsignalized intersection would potentially warrant a traffic signal. While this does not meet the traffic signal accident warrant based on the number of accidents, it is relevant to traffic safety given that the accident was a fatality:

Moreno Beach Drive (NS) at:
Championship Drive (EW) - #9

Alternative ways to improve the level of service without installing a traffic signal at Moreno Beach Drive/Championship Drive and Pete Dye/Bay Hill Drive/John F. Kennedy Drive intersections were reviewed based on the roadway geometrics. At Moreno Beach Drive/ Championship Drive intersection, the minor roadway has a gap storage location (in the median divide) to wait for clearance to achieve a 2-stage left turn. This two-stage gap was included in the traffic analysis; however, it does not improve the evening peak hour level of service because of the high major street through volume. Based on the existing geometrics at Pete Dye/Bay Hill Drive, the minor roadway has a no gap storage location (in the median divide) to wait for clearance to achieve a 2-stage left turn. When a median storage location is created for 2-stage left turn, the operations at the Pete Dye/Bay Hill Drive/John F. Kennedy Drive intersection improves to an acceptable level of service. It is recommended that median modification in the form of striping be installed on John F. Kennedy Drive to improve the level of service at this intersection. See Appendix I for the striping concept.

Based on the intersection analysis tool known as the delay methodology, the intersection above operates at unacceptable Levels of Service during the peak hours as an unsignalized intersection for Year 2040 Without and With Project traffic conditions. If it were signalized, the delay methodology would indicate that the intersection would operate at acceptable Levels of Service during the peak hours (see Tables 14 and 15). However, based on traffic signal warrants, and directly considering the intersection volumes, a traffic signal is not warranted.

It should be noted that the delay methodology assumes that the amount of delay acceptable for an unsignalized intersection is substantially less than for a signalized intersection. For instance, Level of Service D for an unsignalized intersection may have 35.0 seconds of delay for any one movement, while an average of 55.0 seconds of delay is acceptable for all movements combined at a signalized intersection. Level of Service E for an unsignalized intersection may have 50.0 seconds of delay for any one movement, while an average of 80.0 seconds of delay is acceptable for all movements combined at a signalized intersection. It can be seen that the delay methodology is inconsistent in the amount of delay that is acceptable for an unsignalized intersection and signalized intersection.

The traffic signal warrant methodology directly addresses whether a traffic signal should be installed or not. The traffic signal warrants are based on years of experience, are time tested, industry standards, and are recognized by the Federal Highway Administration and the California Department of Transportation as the appropriate methodology of determining whether a traffic signal is needed or not. The delay methodology on the other hand is not recognized by the Federal Highway Administration and California Department of Transportation as a valid methodology for determining whether a traffic signal is needed or not.

Therefore, the two methodologies produce different and contradictory conclusions to the question of whether a traffic signal is needed or not. Of the two methodologies, Kunzman Associates, Inc. believes the traffic signal warrant methodology should take precedence and a traffic signal should not be installed for Year 2040 Without and With Project traffic conditions based on the current volume and accident data. However it is recommended that the City review this location in the future to evaluate whether future traffic counts and

or accident data at or near Moreno Valley Beach Drive and Championship Drive warrant a traffic signal prior to the installation of a traffic signal.

B. Queueing Analysis

1. Vehicle Queuing Locations

Pursuant to the scoping discussions with City of Moreno Valley staff, the study area includes analysis of the following queuing areas (see Appendix B):

Moreno Beach Drive (NS) at:
- John F. Kennedy Drive (EW) - #7
  - Northbound Left Turn (U-turn)
  - Northbound Right Turn
  - Southbound Left Turn
  - Westbound Left Turn
  - Westbound Right Turn
- Project Access (EW) - #8
  - Northbound Right Turn
- Championship Drive (EW) - #9
  - Southbound Left Turn (U-turn)

Stephenson Street (NS) at:
- John F. Kennedy Drive (EW) - #10
  - Eastbound Left -Through
  - Eastbound Through-Right
  - Westbound Left –Through

Pete Dye Street/Bay Hill Drive (NS) at:
- John F. Kennedy Drive (EW) - #11
  - Eastbound Left -Through
  - Eastbound Through-Right

2. Vehicle Queuing Storage Lengths

Table 16 summarizes the results of a queue analysis from the Vistro software for the forecast 95th percentile queue lengths shown in the delay calculation worksheets (see Appendix F). The existing vehicle queuing storage lengths have been measured using aerial photographs and are shown in the summary table.

3. Queuing Storage Mitigation

When the queueing length is forecast to exceed the existing storage length, modification to increase the storage length is recommended, so that the turning movement volume does not spill back onto the through lanes creating additional delay.

Generally, for signalized intersections, a left turn lane is recommended when the turning volume exceeds 100 vehicles per hour, and dual turn lanes are recommended when the turn volume exceeds 300 vehicles per hour[1]. In general, right turn traffic delays are less critical than left turn delays; however, right turn storage lanes can be justified based on capacity analysis and accident records.

As shown in the Table 15 for Year 2040 With Project traffic conditions, the following vehicle queuing demands are projected to exceed existing vehicle queuing storage area:

Moreno Beach Drive (NS) at:
John F. Kennedy Drive (EW) - #7
Westbound Left Turn

Based on Year 2040 traffic forecast left-turn volumes (greater than 300 vehicles per hour), a dual left turn is recommended.

C. Emergency Vehicle Access

The southern project access on Championship Drive is proposed to be restricted to emergency vehicle only access (no residential/golf course access). This emergency access shall be gated and controlled such that emergency vehicles will have access at all times. For emergency only gated entries, the entry roadway width, turning movement clear access, gate type, gate width and gate entry feature shall be provided to the City and/or Fire Authority for review and approval.

Fire apparatus accessible roadways shall be designed and constructed to maintain and support emergency vehicle loads and dimensions on an all-weather drivable surface. In general, the minimum width and vertical clearance of emergency roadways is 13 feet in width for one-way access and 20 feet in width for two-way access with 13.5 feet vertical clearance. For emergency access cross-section of 36 feet or greater parallel parking is typically allowed on both sides of the street. For emergency access cross-section of less than 36 feet in width consult local fire authority for minimum width and parking restrictions. Fire apparatus accessible maximum cross-sectional slope grade of two percent (2%) or a maximum cross-sectional slope grade change of five percent (5%). Fire apparatus accessible preferred maximum longitudinal slope grade of ten percent (10%) or where grades exceeding 10% are necessary because of topographical conditions, the grade percentage allowable for a maximum approved length should be obtained from the local fire authority.

D. Gated Residential Access

The project site is proposed to provide two gated accesses located on the north and west side of the project. The primary project access at the west side of the development on Moreno Beach Drive is proposed as a restricted rights turn in/out only gated entry. The secondary access at the north side of the development off of the John F. Kennedy Drive and

[1] Source: Highway Capacity Manual 2010 (HCM2010) by Transportation Research Board, 2010.

Golf Course Access is proposed for residential full access gated entry. Access to this gate will be at the rear of the Golf Course parking lot.

For gated entries, the following guidelines should be incorporated into the project design:

1. Applicant shall submit plans for City and/or Fire Authority for review and approval.

2. Gates shall be equipped with an approved fire department release.

3. The gate facility shall be delineated by standard traffic control devices (signs and pavement markings) as determined by the City and/or Fire Authority.

4. Access roadway approaches to gate must have a clear width for two-way operation or one-way operation of each gate. A clear width must also be maintained between any islands to be constructed (for card reader, keypad, etc.).

5. The entrance gate control facility shall provide sufficient storage length (multiple lanes) to prevent vehicle queuing from the card reader, keypad, etc. to the intersecting roadway.

6. At entrance gate, an adequate turnaround area shall be provided to accommodate the turning radius of an automobile, pick-up, or delivery truck, eliminating required backing maneuvers onto adjacent roadways.

7. A separate pedestrian access facility should be provided in addition to the vehicular access facility (optional).

8. The vehicle entry control facility shall be designed and installed to provide access in a timely fashion to prevent extended vehicle queuing.

E. Construction Trips

Compared to the project trip generation, construction of the proposed project is expected to generate significantly less trips. The traffic impacts of construction activity will be minor and temporary. To further lessen the impact of construction trips, the project will be required to comply with all standard conditions pertaining to construction including work hours, traffic control plan, haul route, access, oversized-vehicle transportation permit, site security, noise, vehicle emissions and dust control. All construction related trips should be restricted to off-peak hours, whenever possible.

A construction work site traffic control plan shall be submitted to the City for review and approval prior to the start of any construction work. The plans shall show the location of any roadway, sidewalk, bike route, bus stop or driveway closures, traffic detours, haul routes, hours of operation, protective devices, warning signs and access to abutting properties. Temporary traffic controls used around the construction area should adhere to the standards set forth in the California Manual of Uniform Traffic Control Devices (2014) and construction activities should adhere to applicable local ordinances.

Site development would require the use of haul trucks during site clearing and excavation and the use of a variety of other construction vehicles throughout the construction work at the site. Transportation of heavy construction equipment and or materials, which requires the use of oversized vehicles, will require the appropriate transportation permit.

Table 16. Vehicle Queuing Analysis Summary

IX. RECOMMENDATIONS

A. Site Access

The project site is proposed to provide access to John F. Kennedy Drive, Moreno Beach Drive and John F. Kennedy Drive. A third project access on Championship Drive is proposed to be restricted to emergency vehicle only access (no residential/golf course access). With more than one entrance, adequate emergency access is assured because there is more than one way of reaching any point within the site.

The project site is proposed to provide three access driveways located on the northeast, west and south sides of the project. This provides alternative points for emergency access to the project site. The project access driveways shall be constructed in conjunction with the proposed project. The existing northeast access at Stephenson Street/Project Access driveway is proposed to provide full access to the golf course and residential development. The proposed west Moreno Beach Drive/Project Access driveway is proposed to provide restricted access with right turns in/out only for the residential development. Emergency vehicle only access on Championship Drive shall be controlled by a gate at all times. This gate will only be assessable by emergency service personnel/vehicles (no residential/golf course access).

B. Roadway Improvements

Site-specific circulation and access recommendations are depicted on Figure 38.

Construct and/or repair Championship Drive at proposed project access driveway, from the west project boundary to the east project boundary at its ultimate half-section width in conjunction with development, including landscaping and parkway improvements, as necessary.

Construct and/or repair Moreno Beach Drive at proposed project access driveway, from the north project boundary to the south project boundary its ultimate half-section width in conjunction with development, including landscaping and parkway improvements, as necessary.

On-site traffic signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Sight distance at project accesses shall comply with standard California Department of Transportation and City of Moreno Valley sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

Participate in the phased construction of off-site traffic signals through payment of traffic signal mitigation fees. The traffic signals within the study area at buildout should specifically include an interconnect of the traffic signals to function in a coordinated system.

As is the case for any roadway design, the City of Moreno Valley should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Figure 38. Circulation Recommendations

APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – Scoping Agreement

Appendix C – Intersection Turning Movement Count Worksheets

Appendix D – Traffic Model Plots

Appendix E – Traffic Model Worksheets

Appendix F – Explanation and Calculation of Intersection Delay

Appendix G – Traffic Signal Warrant Worksheets

Appendix H – Statewide Integrated Traffic Records System (SWITRS)

Appendix I – Striping Concept – John F. Kennedy Drive – Median Lane

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

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Scoping Agreement

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Intersection Turning Movement Count Worksheets

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Traffic Model Plots

APPENDIX E

Traffic Model Worksheets

APPENDIX F

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The Levels of Service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns
11. Pedestrian activity
12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay methodology and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length
2. Amount of red time faced by a lane group
3. Amount of yellow time for that lane group
4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Average Total Delay per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2010.

Existing

Existing Plus Project

Opening Year (2022) Without Project

Opening Year (2022) With Project

Year 2040 Without Project

Year 2040 With Project

Existing Plus Project - With Improvements

Opening Year (2022) Without Project - With Improvements

Opening Year (2022) With Project - With Improvements

Year 2040 Without Project - With Improvements

Year 2040 With Project - With Improvements

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Traffic Signal Warrant Worksheets

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Statewide Integrated Traffic Records System (SWITRS)

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Striping Concept – John F. Kennedy Drive – Median Lane

APPENDIX I

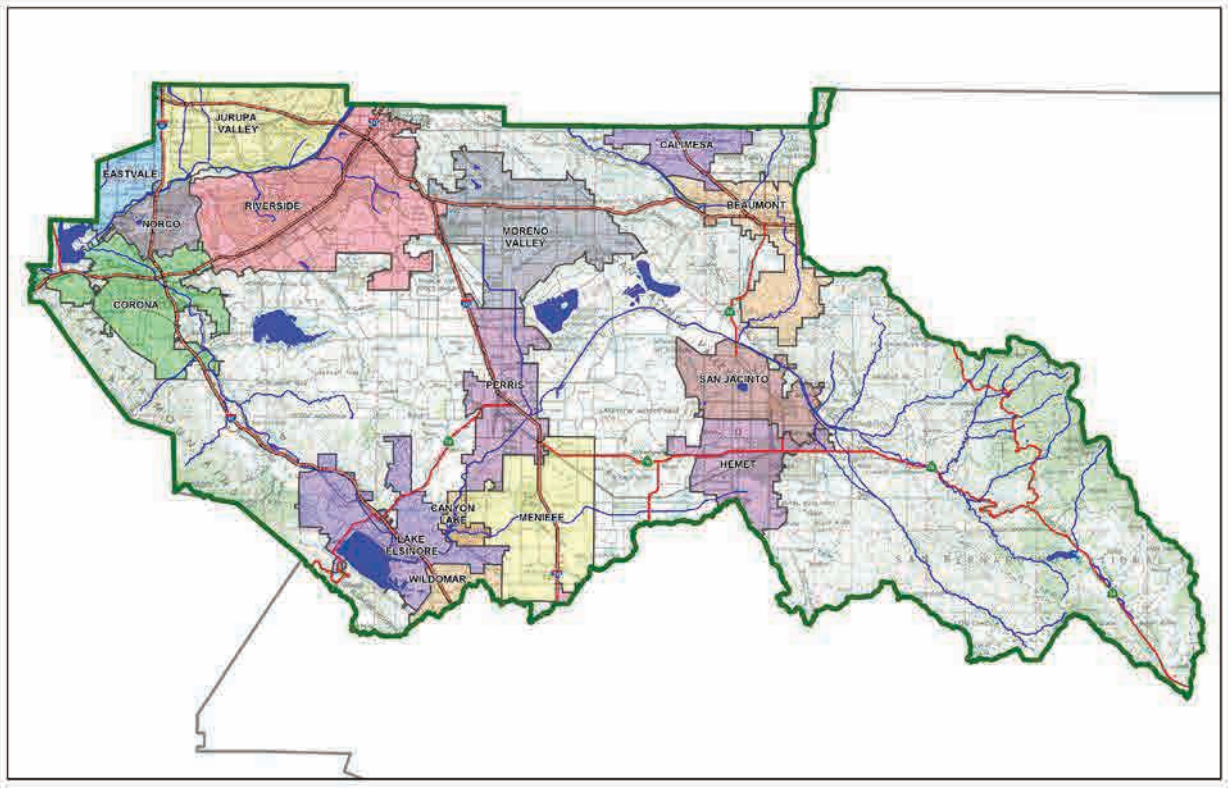
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: Rancho Belago Phase 2 Homes

Development No: Parcel Map 37189

Design Review/Case No: PEN16-0130



☒ **Preliminary**
☐ **Final**

Original Date Prepared: July 19, 2017

Revision Date(s): n/a

Prepared for Compliance with Regional Board Order No. **R8-2010-0033**
Template revised June 30, 2016

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OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for ROC III CA BELAGO, LLC by WINCHESTER ASSOCIATES, Inc. for Rancho Belago Phase 2 Homes project.

This WQMP is intended to comply with the requirements of City of Moreno Valley for Ordinance No. 827 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 and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. 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 Moreno Valley Water Quality Ordinance (Municipal Code Section 8.10).

"I, the undersigned, certify under penalty of law 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	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	Date
Mariela Anguelov Preparer's Printed Name	Senior Engineer Preparer's Title/Position

Preparer's Licensure: C75563

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Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Residential – Apartments
Planning Area:	SP 193
Community Name:	n/a
Development Name:	Rancho Belago Apartment Homes

PROJECT LOCATION
Latitude & Longitude (DMS): Latitude 33.900352° Longitude -117.173749°
Project Watershed and Sub-Watershed: Santa Ana Rivers Watershed; San Jacinto River Sub-Watershed
Gross Acres: All four parcels - 49.99 ac; Parcel 2 – 21.96 ac will be developed/disturbed
APN(s): 304-100-007
Map Book and Page No.: Page 718 D-7, E-7 and Page 748 D-1, E-1 2006 Edition

PROJECT CHARACTERISTICS	
Proposed or Potential Land Use(s)	Apartments
Proposed or Potential SIC Code(s)	1522
Area of Impervious Project Footprint (SF)	621,775
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	621,775
Does the project consist of offsite road improvements?	☐ Y ☒ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	0 sf
Is the project located within any MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	n/a
Are there any natural hydrologic features on the project site?	☐ Y ☒ N
Is a Geotechnical Report attached?	☒ Y ☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	Soils B and C
What is the Water Quality Design Storm Depth for the project?	0.68

Project Description

Parcel Map 37189 consists of four parcels (49.99 gross acreage). Parcel 1 (existing club house and parking lot) and parcel 4 (open space/ golf course) will remain undisturbed and are not a part of this study. Parcel 3 will remain undeveloped (open space) but may be regraded.

Parcel 2 (21.96 ac) aka Project Site, will be developed as high density residential area (R-20) named Rancho Belago Phase 2 Homes and will consists of 416 units (15 building), 520 surface parking stalls, a club house, a swimming pool, and other amenities.

The project site is an irregular shaped parcel located south of John F Kennedy Drive and east of Moreno Beach Drive, within the existing driving range of the Moreno Valley Ranch Golf Course. The topography of the site is generally planar within the northern portion of the site, becoming hummocky and rising at an average gradient of approximately 9 horizontal to 1 vertical southeasterly. The highest elevation of the site is in the southwestern corner, at approximately 1,686 feet and lowest is in the northeastern corner, at approximately 1,597 feet above Mean Sea Level (MSL).

The site is bordered on the north by the existing golf course club house and apartments complex, both followed by John F Kennedy Drive. Hole 1 Mountain borders the site on the east-southeast and Hole 9 Mountain borders the site on the west-southwest. Championship Drive and some residential homes border the site on the south. The project is a portion of Sections 23, T. 3S., R. 3W, SBM.

The project will be accessible from one main entrance at Moreno Beach Drive, one secondary entrance (joint w/ Rancho Belago Phase 1 existing homes) at John F Kennedy Drive and one emergency vehicle access at Championship Drive.

During the pre-developed condition an existing 48" RCP culvert discharges 195 cfs into Parcel 2 and an existing 36" RCP culvert discharges 52 cfs into Parcel 3. These are off-site runoffs accumulated by a tributary area southerly of Championship Drive per Moreno Valley Ranch Golf Club mass grading plans. The combined off-site and on-site runoff flows to the northeast corner of the project site and through the storm drain system consisting of an existing concrete culvert box under Moreno Beach Drive and two 36" RCP pipes is discharges into Detention Basin "J" and Moreno MDP Line F-5A.

During post-developed condition the existing drainage patterns will remain the same. A system of storm drain pipes, catch basins and drop in inlets will capture the accumulated on-site runoff and will discharge it at the existing concrete box culvert under Moreno Beach Drive.

First flush and dry weather nuisance flows shall be routed through the proposed structural LID BMP (infiltration basin) located at the southwest corner of the project site. Where it is feasible LID Principles (landscape and permeable pavements) shall be implemented throughout the project site.

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
San Jacinto River (Reach 3)	None	AGR, GWR, REC1, REC2, WARM, WILD, MUN	Not a water body classified as RARE
Canyon Lake (Aka: San Jacinto River Reach 2)	Nutrients, Pathogens	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not a water body classified as RARE
San Jacinto River (Reach 1)	None	MUN, AGR, GWR, REC1, REC2, WARM, WILD	Not a water body classified as RARE
Lake Elsinore	Nutrients, Organic Enrichments, Low Dissolved Oxygen, PCBs, Sediment Toxicity, Unknown Toxicity	REC1, REC2, WARM, WILD, MUN	Not a water body classified as RARE
Temescal Creek (Reach 6)	Indicator Bacteria	GWR, REC1, REC2,WARM, WILD, MUN	Not a water body classified as RARE
Temescal Creek (Reach 5)	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE, MUN	22 miles
Temescal Creek (Reach 4)	None	AGR, GWR, REC1, REC2, WARM, WILD, RARE	28 miles
Temescal Creek (Reach 3) – Lee Lake	None	AGR, IND, GWR, REC1, REC2, WARM, WILD, MUN	Not a water body classified as RARE
Temescal Creek (Reach 2)	None	AGR, IND, GWR, REC1, REC2, WARM, WILD, MUN	Not a water body classified as RARE
Temescal Creek (Reach 1)	None	REC1, REC2, WARM, WILD	Not a water body classified as RARE
Santa Ana River (Reach 3)	Copper, Lead, Pathogens	AGR, GWR, REC1,REC2, WARM, WILD, RARE, MUN	47 miles
Prado Basin Management Zone	Pathogens, Nutrients	REC1,REC2, WARM, WILD, RARE, MUN	49 miles
Santa Ana River (Reach 2)	Indicator Bacteria,	AGR, GWR, REC1,REC2, WARM, WILD, RARE, MUN	68 miles
Santa Ana River (Reach 1)	None	REC1,REC2, WARM, WILD, MUN	Not a water body classified as RARE
Tidal Prism of Santa Ana River (to within 1000' of Victoria Street) and Newport Slough	Enterococcus, Fecal Coliform, Total Coliform	REC1,REC2, COMM, WILD, RARE, MAR, MUN	77 miles
Pacific Ocean Nearshore Zone	None	IND, NAV, REC1,REC2, COMM, WILD, RARE, SPWN, MAR, SHEL, MUN	78 miles
Pacific Ocean Offshore Zone	None	IND, NAV, REC1,REC2, COMM, WILD, RARE, SPWN, MAR, MUN	80 miles

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ 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
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* City of Moreno Valley Grading Permit City of Moreno Valley Building Permit	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, constraints might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. Opportunities might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your LID design and explain your design decisions to others.

The 2010 Santa Ana MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Consideration of "highest and best use" of the discharge should also be considered. For example, Lake Elsinore is evaporating faster than runoff from natural precipitation can recharge it. Requiring infiltration of 85% of runoff events for projects tributary to Lake Elsinore would only exacerbate current water quality problems associated with Pollutant concentration due to lake water evaporation. In cases where rainfall events have low potential to recharge Lake Elsinore (i.e. no hydraulic connection between groundwater to Lake Elsinore, or other factors), requiring infiltration of Urban Runoff from projects is counterproductive to the overall watershed goals. Project proponents, in these cases, would be allowed to discharge Urban Runoff, provided they used equally effective filtration-based BMPs.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

During the post-developed condition the drainage patterns of the project site will remain the same.

Did you identify and protect existing vegetation? If so, how? If not, why?

The site is a manmade golf course. 21.96 ac of the site will be disturbed/developed. The remaining 28.03 ac will remain undisturbed or will be regraded/ relandscaped per different plan.

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

The site is a manmade golf course, therefore the natural infiltration capacity was previously compromised.

Did you identify and minimize impervious area? If so, how? If not, why?

Per the City's requirements, 35% of the project site shall be landscaped. Porous pavement as LID Principle will be implemented where it is feasible.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

All roof drains shall be directed to landscape areas. The site will be precisely graded in the way that the impervious driveways drain toward the pervious paved parking stalls where it is feasible.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[12]	Area (Sq. Ft.)	DMA Type
DMA 1	Roofs, Asphalt, Porous Asphalt, Ornamental Landscape	807,138	Type "D"
DMA 2	Ornamental Landscape	125,353	Type "B"
DMA 3	Roofs, Asphalt,	32,830	Type "C"
DMA 4	Permeable Pavers	7,815	Type "B"

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
N/A			

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]
DMA 2	Ornamental Landscape	108,795	0.68	DMA 3	32,830	0.88
DMA 4	Permeable Pavers	7,815	0.68	-	-	0.68

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

*Permeable pavers were used as a **sight design concept.***
*A cross section detail is shown on the Site Plan in Appendix A. The retention depth of the proposed gravel base is **2.4"** (40% voids x 6" gravel depth= 2.4"), which exceeds the retention depths required for DMA 4.*

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet) [A]	Post-project surface type	Impervious fraction [B]	Product [C] = [A] x [B]	DMA name /ID	Area (square feet) [D]	Ratio [C]/[D]
DMA 3	32,830	Roof, Asphalt	1	32,830	DMA 2	108,795	0.3<2

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 1	Infiltration Basin

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☒The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: N/A

Type of Landscaping (Conservation Design or Active Turf): N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: N/A

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
N/A	N/A

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: N/A

Project Type: Residential

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: N/A

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
N/A	N/A

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	Projected average daily use (Step 1)
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

N/A

Select one of the following:

☐ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
DMA 1	☒	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

DMA 1 is feasible for a structural LID BMP - Infiltration Basin.

The implementation of LID Principles fully address the DCV for DMA 2, DMA 3, and DMA 4, therefore LID BMPs were not proposed for these areas.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First, calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second, design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Areas x Runoff Factor**	***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]			
DMA 1 BLDGS	*157,392*	*Roofs*	*1*	*0.89*	*140393.7*			
DMA 1 DWYS PARKINGS	*367,248*	*Asphalt*	*1*	*0.89*	*327585.2*			
DMA 1 LNDsC	*282,498*	*Ornamental Landscape*	*0.1*	*0.11*	*31204.2*			
						Design Storm Depth (in)	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
	A_T = Σ[A] =807,138				Σ= [D] =499,183.1	[E] 0.68	$[F] = \frac{[D]x[E]}{12}$ 28,287	[G] 31,500

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

N/A

E.1 Identify Pollutants of Concern

N/A

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☐ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☐	☐	☐	☐	☐	☐	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*
[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document
[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
N/A		

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	INSERT VALUE	INSERT VALUE	INSERT VALUE
Volume (Cubic Feet)	INSERT VALUE	INSERT VALUE	INSERT VALUE

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☒ Y ☐ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

Per the County's geodatabase the entire project is not a subject to hydromodification.

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of runoff Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	● Stencil inlet structures per City of Moreno Valley Std. 302B, Note 13.	● Maintain and periodically repaint or replace inlet markings. ● Provide stormwater pollution prevention information to new site owners, lessees, or operators. See applicable operational BMPs in Fact Sheet SC-44, "Drainage System ● Maintenance" provided in Appendix 10: Educational Materials. ● Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drain."
Need for future indoor & structural pest control	● Incorporate building design features that discourage entry of pests.	● Provide Integrated Pest Management information to owners, lessees, and operators.
Landscape/ Outdoor Pesticide Use	Final landscape plans will accomplish all of the following. ● Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ● Where landscaped areas are used to retain or detain strormwater , specify plants that are tolerant of saturated soil conditions. ● Consider using pest-resistant plants, especially adjacent to hardscape. ● To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, are movement, ecological consistency, and plant interactions.	● Maintain landscaping using minimum or no pesticides. See applicable operational BMPs in "What you should know for…..Landscape and Gardening" provided in Appendix 10: Educational Materials. ● Provide IPM information to new owners, lessees and operators.
Pools, spas, ponds, decorative fountains, and other water features.		● See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" provided in Appendix 10: Educational Materials.
Miscellaneous Drain Roofing, Gutters and Trim	● Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
Plazas, sidewalks, and parking lots.		● Sweep sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
Infiltration Basin	Infiltration Basin located near the southwest corner of the project site	Parcel Map Conceptual Grading plan Sheet 3	33.899904°/ -117.172957°

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: *Operation, Maintenance and Funding details will be provided in the Final WQMP*

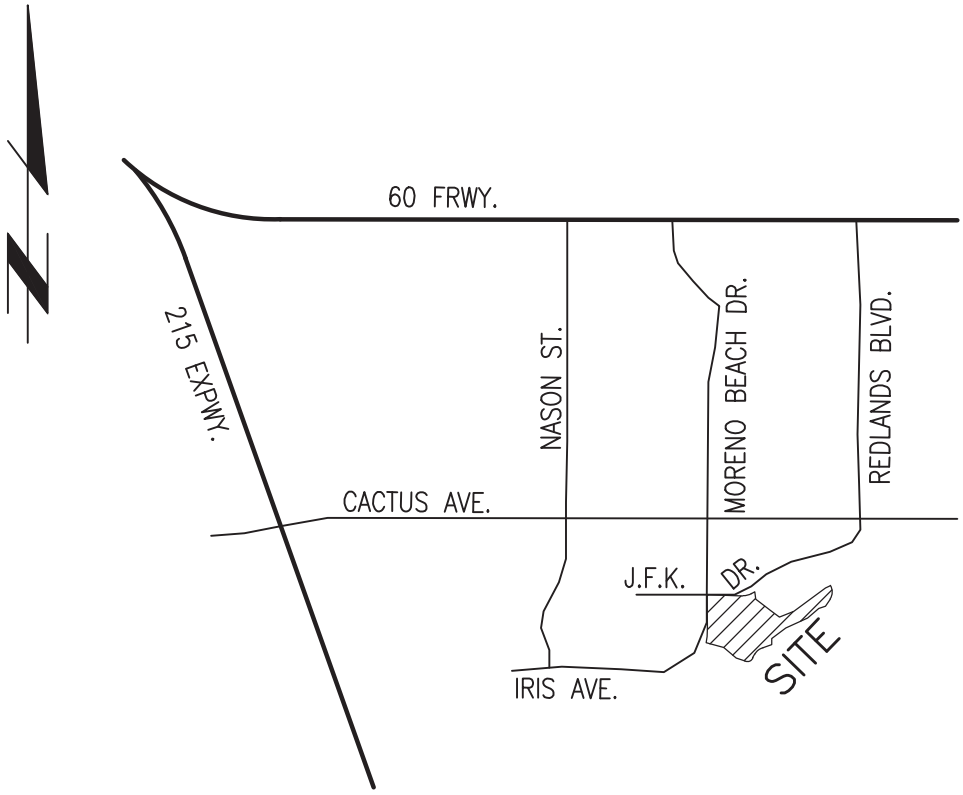
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☒ Y ☐ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



LOCATION MAP
NTS

Appendix 2: Construction Plans

Grading and Drainage Plans

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

LOR GEOTECHNICAL GROUP, INC.
Soil Engineering ▲ Geology ▲ Environmental

PRELIMINARY GEOTECHNICAL INVESTIGATION
PROPOSED APARTMENT COMPLEX
MORENO VALLEY RANCH GOLF COURSE
128905 JOHN F. KENNEDY DRIVE
MORENO VALLEY, CALIFORNIA

PROJECT NO. 33289.1
FEBRUARY 21, 2017

Prepared For:

ROC III CA Belago, LLC.
c/o Bridge Investment Group Holdings
2611 South Coast Highway, 101, Suite 205
Cardiff, California 92007

Attention:Mr. Eric Heffner

LOR GEOTECHNICAL GROUP, INC.
Soil Engineering ▲ Geology ▲ Environmental

February 21, 2017

ROC III CA Belago, LLC
c/o Bridge Investment Group Holdings
2611 South Coast Highway, 101, Suite 205
Cardiff, California 92007

Project No. 32289.1

Attention: Mr. Eric Heffner

Subject: Preliminary Geotechnical Investigation, Proposed Apartment Complex, Moreno Valley Ranch Golf Course, 28905 John F. Kennedy Drive, Moreno Valley, California.

LOR Geotechnical Group, Inc. is pleased to present this report summarizing our geotechnical investigation for the proposed multi-family residential structures and associated improvements to be located within the existing driving range of the Moreno Valley Ranch Golf Course in the City of Moreno Valley.

In summary, it is our opinion that the site can be developed from a geotechnical perspective, provided the recommendations presented in the attached report are incorporated into design and construction. The following executive summary reviews some of the important elements of the project, however, this summary should not be solely relied upon.

To provide adequate support for the proposed structures, we recommend that a compacted fill mat be constructed beneath footings and slabs. The compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils and/or bedrock materials. Any undocumented fill material and all loose alluvial and weathered bedrock materials should be removed from areas to receive engineered compacted fill. Bedrock materials were encountered at various depths within most of our explorations. The data developed during this investigation indicates that removals of approximately 2 to 7 feet below existing grades, and deeper locally, within currently planned structural areas.

The on-site soils were tested and found to have a very low expansion potential. Soluble sulfate content testing of the on-site soils found them to have negligible soluble sulfate content. The on-site soils were found to have poor R-value quality. Infiltration testing found favorable infiltration characterstics.

LOR Geotechnical Group, Inc.

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APPENDICES

INTRODUCTION

During August of 2016 through February of 2017, a Preliminary Geotechnical Investigation was performed by LOR Geotechnical Group, Inc. for the proposed apartment complex to be located within the existing Moreno Valley Ranch Golf Course driving range, 28905 John F. Kennedy Drive in the City of Moreno Valley, California. The purpose of this investigation was to provide a technical evaluation of the geologic setting of the site and to provide geotechnical design recommendations for the proposed residential type development. The scope of our services included:

- Review of available pertinent geotechnical literature, reports, maps, and agency information pertinent to the study area;
- Geologic field reconnaissance mapping to verify the aerial distribution of earth units and significance of surficial features as compiled from documents, literature and reports reviewed,
- A subsurface field investigation to determine the physical soil conditions pertinent to the proposed development;
- Laboratory testing of selected soil samples obtained during the field investigation;
- Infiltration testing via the double ring infiltrometer method;
- Development of geotechnical recommendations for site grading and foundation design; and
- Preparation of this report summarizing our findings, and providing conclusions and recommendations for site development.

The approximate location of the site is shown on the attached Index Map, Enclosure A-1, within Appendix A.

To orient our investigation at the site, you provided us with a Site Plan of the site. The existing site topography and proposed development are shown on this map. A copy of this map was utilized as a base for our Site Plan, Enclosure A-2, within the pocket of Appendix A.

PROJECT CONSIDERATIONS

Information furnished to this firm indicates the proposed project will consist of the construction of an apartment complex and associated improvements on the 20 ± acre site.

Based on the Conceptual Grading Plan provided, grading will incorporate nominal cuts on the order of 21 feet and fills on the order of 10 feet. Cut slopes with gradients of 2 horizontal to 1 vertical up to approximately 23 feet tall and cut slopes with gradients of 1.5 horizontal to 1 vertical up to approximately 27 feet tall are also proposed. Although, the type of construction for the apartment buildings has not yet been stated, it will most likely consist of wood frame and stucco with structures up to three stories in height. Moderate foundation loads are associated with such structures.

EXISTING SITE CONDITIONS

The subject site is an irregular shaped parcel comprising approximately 20 acres located south of John F. Kennedy Drive and east of Moreno Beach Drive, within the driving range of the existing Moreno Valley Ranch Golf Course, in the City of Moreno Valley, California. The topography of the site is generally planar within the northern portion of the site, becoming hummocky and rising at an average gradient of approximately 9 horizontal to 1 vertical southeasterly. The highest elevation of the site is in the southwestern corner, at approximately 1,686 feet and the lowest is in the northeastern corner, at approximately 1,597 feet. The planar topography in the far northern portion is broken by a small outcropping of rocks.

At the time of our investigation the majority of the subject site was vacant of structures and contained a layer of dry grass. However, the perimeter areas along the west and east sides, adjacent to hole 1 mountain on the east-southeast and hole 9 mountain on the west-southwest, contained a landscaped strip consisting of trees and a concrete cart path. A pump house is located within the landscape strip on the east-northeast and a weather station is present in the landscape strip on the west-southwest.

The site is bordered on the north by the existing golf course club house and an apartment complex, both followed by John F. Kennedy Drive. As previously mentioned, hole 1 mountain borders the site on the east-southeast and hole 9

mountain borders the site on the west-southwest. Championship Drive and some tract residential homes border the site on the south.

SUBSURFACE FIELD INVESTIGATION

Our subsurface field exploration program was conducted on August 11, 2016 and consisted of drilling 8 exploratory borings with a truck-mounted CME 55 drill rig equipped with a 8-inch diameter hollow stem augers. The borings were extended to depths ranging from approximately 15 feet to 41 feet below the existing ground surface. The approximate locations of our exploratory borings are presented on the enclosed Plate, Enclosure A-2, within Appendix A.

Logs of the subsurface conditions encountered in the exploratory borings were maintained by a geologist from this firm. Bulk samples of the encountered materials were obtained and returned to our geotechnical laboratory in sealed containers for further testing and evaluation. Relatively undisturbed samples were obtained at maximum intervals of 5 feet and returned to our geotechnical laboratory in sealed containers for further testing and evaluation. A detailed description of the subsurface field exploration program and boring are presented in Appendix B.

LABORATORY TESTING PROGRAM

Selected soil samples obtained during the field investigation were subjected to laboratory testing to evaluate their physical and engineering properties. Laboratory testing included in-place moisture content and dry density, laboratory compaction characteristics, direct shear, sieve analysis, sand equivalent, R-value, expansion index, and soluble sulfate content. A detailed description of the laboratory testing program and the test results are presented in Appendix C.

GEOLOGIC CONDITIONS

Regional Geologic Setting

The subject site is situated within the northeastern portion of the Peninsular Ranges Geomorphic Province of southern California. This province incorporates several northwest trending mountain ranges, such as the Santa Ana and San Jacinto Mountains, which extend from the Transverse Ranges Geomorphic Province, northeast

of Los Angeles, into the Baja California Peninsula. Lying in between these small ranges are a series of valleys and basins, such as the Elsinore Valley and the Perris Plain. The Elsinore Valley is a linear, fault controlled, valley along the eastern side of the Santa Ana Mountains extending from Corona south to Temecula. The eastern margin of this valley is joined by a higher, relatively flat, plain which extends east to the San Jacinto Mountains, called the Perris Plain. The Perris Plain is composed of rocks of the Peninsular Ranges batholith, a very large mass composed primarily of batholithic crystalline igneous rocks, with lessor amounts of metasedimentary and metavolcanic rocks which predate the intrusion of the batholith. The batholithic rocks actually consist of numerous separate plutonic intrusions which range in composition from gabbro to granite, with tonalite the predominate lithology. While the floor of the Perris Plain is relatively flat, it is dotted with small remnant hills, or inselbergs, composed of rocks highly resistant to erosion. The small hills of Mount Russell, adjacent the site to the south, are composed of a batholithic crystalline igneous rock composed of granitic like rocks predominately of granodiorite to tonalite composition. Erosion of the hills has resulted in the covering of a thin to thick veneer of various ages of alluvial fan materials across the flank of the hills and out into the adjoining valley floor. The current drainage pattern of the northeastern section of Moreno Valley flows to the south, then turns to the southwest where southward flow is blocked by Mount Russell. This pattern has eroded off some of the older alluvial fan materials and subsequently deposited various amounts of relatively younger unconsolidated alluvial sediments along the lower reaches of the valley.

The subject site is therefore underlain by bedrock units of granitic-like rocks, which outcrop at the surface, primarily along the southern fringes. These units are covered with various depths of older, indurated, alluvial materials along the remainder of the site.

The interior of the Perris Plain is considered to be relatively stable with few known active faults. However, this Plain is bounded by active faults. These include the Elsinore fault zone on the west, the San Jacinto fault zone on the northeast, the Cucamonga fault zone on the north, and the Agua-Tibia fault zone on the south. As the subject site is located near the northeastern margin of Perris Plain, the San Jacinto fault is the closest known active fault in relation to the site. At its closest approach, the San Jacinto fault is located approximately 5.0 kilometers (3.2 miles) to the northeast.

The site and immediate surrounding region as mapped by the U.S.G.S. (Morton and Matti, 2001) is presented as Enclosure A-4 within Appendix A.

Site Geologic Conditions

As observed during this investigation, the subject site is underlain by fill/topsoil overlying native alluvial materials and igneus bedrock. These units are described in further detail in the following sections:

Surficial Deposits

Fill: The surface of the site contained a layer of materials which have been altered in some manner. These materials were noted to generally consist of silty sand which was brown, dry, and in a loose state. These units were noted to be on the order of 0.5 to 7 feet in thickness and associated with the current site development as a golf course.

Older Alluvium: Underlying the surficial materials, natural units of older alluvium were encountered. These units consisted of primarily of silty sand with minor units of well graded sand with silt, well graded sand, and clayey sand. Typically, the older alluvial materials were brown to red-brown in color, damp, micaceous, and contained some pinhole porosity within the upper portions. The coarser grained materials tended to be speckled red-brown to red-black and dry. Based on the results of the equivalent SPT blow counts, it was noted that the older alluvial materials were in a medium dense to dense state upon first encountered, becoming dense to very dense with depth.

Igneous Bedrock: Underlying the older alluvial materials and exposed at the surface as previously noted, igneous bedrock of tonalite composition was encountered within 5 of our exploratory borings. As encountered, the bedrock was typically moderately to highly weathered, coarse to medium grained, and dry. These materials become very hard quickly with depth.

A detailed description of the subsurface soil conditions as encountered within our exploratory borings is presented on the Boring Logs within Appendix B.

Groundwater Hydrology

Groundwater was not encountered in any of our exploratory borings as advanced to a maximum depth of approximately 41 feet, nor was any groundwater seepage observed during our site reconnaissance on the subject site.

Records for nearby wells which were readily available from the State of California Department of Water Resources online database (DWR, 2017) and the Western Municipal Water District Cooperative Well Measurement Program (WMWD, 2016) were reviewed as a part of this investigation.

According to the State of California Department for Water resources online database, the nearest wells are Local Well ID EMWD 10140 and 10141 located approximately 0.7 kilometers (0.5 miles) to the north of the site. Data for these wells was present from November of 2011 to October of 2015. Groundwater levels ranged from depths of approximately 50 to 80 feet during that time. A measuring point elevation of 1,545 feet above mean sea level was provided.

Groundwater records provided by the Cooperative Well Measuring Program coordinated by the Western Municipal Water District (2016), also identified the above wells with a groundwater depth of 63 feet in 2015, the most recent measurement.

Mass Movement

The majority of the site lies on a relatively flat surface. The occurrence of mass movement failures such as landslides, rockfalls, or debris flows within such areas are generally not considered common and no evidence of mass movement was observed on the site.

Faulting

No active or potentially active faults are known to exist at or project into the subject site, nor was any evidence of faulting or lineaments noted during our field investigation of the site. In addition, the site does not lie within a current State of California Earthquake Fault Zone (Hart, 1997).

As previously mentioned, the closest known fault with a well documented location is the San Jacinto fault, located approximately 5 kilometers (3.2 miles) to the northeast. Other active earthquake faults in the region include the San Andreas fault located approximately 22.5 kilometers (14 miles) to the northeast, the Elsinore fault located approximately 32.5 kilometers (20 miles) to the southwest, and the Cucamonga fault located approximately 39.5 kilometers (24.5 miles) to the northwest.

The San Jacinto fault zone is a sub-parallel branch of the San Andreas fault zone, extending from the northwestern San Bernardino area, southward into the El Centro region. This fault has been active in recent times with several large magnitude events. It is believed that the San Jacinto fault is capable of producing an earthquake magnitude on the order of 6.5 or larger.

The San Andreas fault is considered to be the major tectonic feature of California, separating the Pacific Plate and the North American Plate. While estimates vary, the San Andreas fault is generally thought to have an average slip rate on the order of 24mm/yr and capable of generating large magnitude events on the order of 7.5.

The Elsinore fault zone is one of the largest in southern California. At its northern end it splays into two segments, named the Chino and Whittier faults, and at its southern end it is cut by the Yuba Wells fault. The primary sense of slip along the Elsinore fault is right lateral strike-slip. Several of the fault strands which make up the Elsinore fault zone possess their own names. It is believed that the Elsinore fault zone is capable of producing an earthquake magnitude on the order of 6.5 to 7.5.

The Cucamonga fault is considered to be part of the Sierra Madre fault system which marks the southern boundary of the San Gabriel Mountains. This is a north dipping thrust fault which is believed to be responsible for the uplift of the San Gabriel Mountains. It is believed that the Cucamonga fault is capable of producing an earthquake magnitude on the order of 7.0.

Current standards of practice have included a discussion of all potential earthquake sources within a 100 kilometer (62 mile) radius. However, while there are other large earthquake faults within a 100 kilometer (62-mile) radius of the site, none of these are considered as relevant to the site as the faults described above, due to their greater distance and/or smaller anticipated magnitudes.

Historical Seismicity

In order to obtain a general perspective of the historical seismicity of the site and surrounding region, a search was conducted for seismic events at and around the area within various radii. This search was conducted utilizing the historical seismic search program by EPI Software, Inc. (Reeder, 2000) This program conducts a search of a user selected cataloged seismic events database, within a specified radius and selected magnitudes, and then plots the events onto an overlay map of known faults. For this investigation the database of seismic events utilized by the EPI program was obtained from the Southern California Seismic Network (SCSN) available from the Southern California Earthquake Center. At the time of our search the data base contained data from January 1, 1932 through December 31, 2010.

In our first search, the general seismicity of the region was analyzed by selecting an epicenter map listing all events of magnitude 4.0 and greater, recorded since 1932, within a 100 kilometer (62 mile) radius of the site, in accordance with guidelines of the California Division of Mines and Geology. This map illustrates the regional seismic history of moderate to large events. As depicted on Enclosure A-5, within Appendix A, the site lies within a relatively active region associated with the San Jacinto and San Andreas faults trending southeast to northwest. Of these events, the closest was a magnitude 4.1 located approximately 12 kilometers (7.5 miles) north of the site.

In the second search, the micro seismicity of the area lying within a 10 kilometer (6.2 miles) radius of the site was examined by selecting an epicenter map listing events on the order of 0.0 and greater since 1978. In addition, only the "A" events, or most accurate events were selected. Caltech indicates the accuracy of the "A" events to be approximately 1 kilometer. The results of this search is a map that presents the seismic history around the area of the site with much greater detail, not permitted on the larger map. The reason for limiting the events to the last 40 ± years on the detail map is to enhance the accuracy of the map. Events recorded prior the mid 1970's are generally considered to be less accurate due to advancements in technology. As depicted on this map, Enclosure A-6, the adjacent San Jacinto fault appears to be the source of numerous events.

In summary, the historical seismicity of the site entails numerous small to medium magnitude earthquake events occurring in the region around the subject site, predominately associated with the presence of the San Jacinto fault. Any future

developments at the subject site should anticipate that moderate to large seismic events could occur very near the site.

Secondary Seismic Hazards

Other secondary seismic hazards generally associated with severe ground shaking during an earthquake include liquefaction, seismic-induced settlement, seiches and tsunamis, earthquake induced flooding, landsliding, and rockfalls.

Liquefaction: The potential for liquefaction generally occurs during strong ground shaking within loose, granular sediments where the groundwater is usually less than 50 feet. As the site is underlain by dense older alluvial materials and igneous bedrock and the depth to groundwater is on the order of 50 plus feet, the potential for liquefaction is considered nil.

Seiches/Tsunamis: The potential for the site to be affected by a seiche or tsunami (earthquake generated wave) is considered nil due to absence of any large bodies of water very near the site.

Flooding (Water Storage Facility Failure): The Perris Reservoir is located nearby to the south of the site. However, due to the presence of Mount Russell lying in between the site and this reservoir, flooding from this source due to rupture during in earthquake is considered nil.

Seismically-Induced Landsliding: Due to the low relief of the site and surrounding region, the potential for landslides to occur at the site is considered nil.

Rockfalls. No large, exposed, loose or unrooted boulders are present above the site that could affect the integrity of the site.

Seismically-Induced Settlement: Settlement generally occurs within areas of loose, granular soils with relatively low density. Because the site is underlain by relatively dense older alluvium and hard igneous bedrock and grading of the site will remove any undocumented fill soils and any near surface loose alluvial soils, the potential for settlement is considered nil.

SLOPE STABILITY

To orient our slope stability analysis, the project Conceptual Grading Plan prepared by Winchester Associates, Inc. was utilized (2017). Based on this plan, the most critical slope section was selected based on both gradient and height. These consisted of a 27-foot tall, 1.5:1 (horizontal to vertical) cut slope planned along the south side of the project. The location of the slope analyzed are shown on the attached Geotechnical Map, Enclosure A-2. The cross section showing the geologic units comprising the slopes are presented as Enclosure A-3. As noted during this investigation and displayed on the subject cross section, the cut slope is anticipated to expose igneous bedrock materials that are generally massive.

The stability analyses were conducted using the method of limit quilibrium with the aid of the computer program PCSTABL5M (Purdue, 1987). This program calculates the factors for safety along numerous failure surface planes and establishes the surface with the lowest factor of safety. The failure surface with the lowest factor of safety is termed the "critical slip surface". By convention, slopes with static values greater than 1.50 and pseudostatic values greater than 1.10 along the critical slip surface are considered stable.

To perform this evaluation, a relatively undisturbed sample of the on-site igneous bedrock units comprising the subject cut slope was tested in direct shear. Direct shear testing conducted during this investigation showed a cohesion value of approximately 200 pounds per square foot (psf) and a friction angle of 40 degrees for the onsite igneous bedrock rock. A moist unit weight for the bedrock of 135 pcf was used.

Both static and pseudostatic conditions were analyzed for the slope design. Due to the close presence of the San Jacinto fault zone to the northeast, a horizontal earthquake coefficient of 0.15g was utilized for the pseudostatic analysis. A static factor of safety of approximately 1.78 and a pseudostatic factor of safety of approximately 1.64 were computed.

The calculations for our analysis are presented within Appendix F.

In summary, our preliminary calculations show adequate factors of safety for the preliminarily intended slope at the site. Therefore, we believe that the slopes should be grossly stable to the proposed maximum inclination of 1.5:1 (horizontal to vertical) and heights of 27 feet in cut. However, we recommend that during slope construction

the project engineering geologist should observe the cuts for any unfavorable geologic factors. Adverse factors are not anticipated at this time. In addition, if the review of the site development plans will result in steeper and/or taller slopes, additional slope stability evaluations may be required.

SOILS AND SEISMIC DESIGN CRITERIA (California Building Code 2016)

Section 1613 of Chapter 16 of the 2016 California Building Code (CBC) contains the procedures and definitions for the calculations of the earthquake loads on structures and non structural components that are permanently attached to structures and their supports and attachments.

It should be noted that the classification of use and occupancy of all proposed structures at the site, and thus design requirements, shall be the responsibility of the structural engineer and the building official.

CBC Earthquake Design Summary

The following earthquake design criteria have been formulated for the site utilizing the source referenced above.

However, these values should be reviewed by the building official (Risk Category) and structural engineer and the final design should be performed by a qualified structural engineer familiar with the region.

CBC 2016 SEISMIC DESIGN SUMMARY* Site Location (USGS WGS84) 33.66464, -117.2948, Risk Category III	
Site Class Definition Chapter 20 ASCE 7	D
S_s Mapped Spectral Response Acceleration at 0.2s Period, (Figure 1613.3.1(1))	1.806
S_1 Mapped Spectral Response Acceleration at 1s Period, (Figure 1613.3.3(2))	0.795
F_a Short Period Site Coefficient at 0.2s Period, (Table 1613.3.3(1))	1.0
F_v Long Period Site Coefficient at 1s Period,(Table 1613.3.3(2))	1.5
S_{MS} Adjusted Spectral Response Acceleration at 0.2s Period, (eq .16-37)	1.806
S_{M1} Adjusted Spectral Response Acceleration at 1s Period, (eq .16-38)	1.193
S_{DS} Design Spectral Response Acceleration at 0.2s Period,(eq .16-39)	1.204

CBC 2016 SEISMIC DESIGN SUMMARY* Site Location (USGS WGS84) 33.66464, -117.2948, Risk Category III	
S_{D1} Design Spectral Response Acceleration at 1s Period, (eq .16-40)	0.795
Seismic Design Category - Short Period (Table 1613.3.5(1))	E
Seismic Design Category - Long Period (Table 1613.3.5(2))	E
*Values obtained from U.S.G.S. online U.S. Seismic Design Maps tool	

INFILTRATION TESTING AND TEST RESULTS

Four double ring infiltration tests were conducted at the approximate locations illustrated on Enclosure A-2. Test pits were excavated to a depth of approximately 5 feet below the existing ground surface to the proposed basin bottom elevation of 1,590 feet above mean sea level and a 12-inch diameter casing was installed within the center of the test location with a 24-inch diameter casing centered around it. Each casing was imbedded to a depth of approximately 3.5 to 5.0-inches. These liners extended approximately 15 to 16.5-inches above the bottom of the test location. The test locations were tested immediately after the casings were installed by filling both the inside and outside casings and maintaining a water level to a depth of approximately 2.0-inches.

The testing procedure was as follows:

Both the inside and outside areas of the casings were filled with water to a level of approximately 2.5-inches above the ground surface. Water was then metered to maintain this water level within both rings. The volume of water use in a given time period was recorded at various time intervals to establish the infiltration rate of the inner ring. See the attached Infiltration Test Data sheets, Enclosures D-1 through D-4 within Appendix D for the test information and measurements.

The infiltration rate is measured as the drop in water level compared to the permeability of the bottom surface area soils in the bottom of the test hole. If casing is not used, the water column in the test hole is allowed to seep into both the bottom and sidewalls of the hole, for which the drop in water level must be corrected and reduced for the volume of water seeping into the sidewall and for the diameter of the test hole. As described above, the tests described herein were conducted using a 12-inch diameter inner casing and 24-inch diameter outer casing.

The test holes were found to have the following measured clear water infiltration rates:

Infiltration Test No.	Infiltration Rate*	
	gal/sf/day	in/hr
DRI-1	3.7	0.2
DRI-2	294.4	19.7
DRI-3	36.5	2.4
DRI-4	28.8	1.9
* Average of final two readings		

The clear water percolation rates obtained in our test locations ranged from 0.2 to 19.7 inches per hour.

CONCLUSIONS

General

This investigation provides a broad overview of the geotechnical and geologic factors which are expected to influence future site planning and development. On the basis of our field investigation and testing program, it is the opinion of LOR Geotechnical Group, Inc. that the proposed development is feasible from a geotechnical standpoint, provided the recommendations presented in this report are incorporated into design and implemented during grading and construction.

The subsurface conditions encountered in our exploratory borings are indicative of the locations explored. The subsurface conditions presented here are not to be construed as being present the same everywhere on the site. If conditions are encountered during the construction of the project which differ significantly from those presented in this report. This firm should be notified immediately so we may assess the impact to the recommendations provided.

Foundation Support

Based upon the field investigation and test data, it is our opinion that the existing fills and the upper native soils, will not, in their present condition, provide uniform and/or adequate support for the proposed structures. Our equivalent Standard Penetration Test (SPT) data indicated variable in-situ conditions of the existing fills and upper native soils, typically ranging from loose to medium dense states. This condition could cause unacceptable differential and/or overall settlements upon application of the anticipated foundation loads. Therefore, in order to provide adequate support for the proposed structures, we recommend that a compacted fill mat be constructed beneath footings and slabs. This compacted fill mat will provide a dense, high-strength soil layer to uniformly distribute the anticipated foundation loads over the underlying soils. In addition, the construction of this compacted fill mat will allow for the removal of the existing unsuitable earth materials within the building pad and structural fill areas. Conventional foundation systems using either individual spread footings and/or continuous wall footings will provide adequate support for the anticipated downward and lateral loads when utilized in conjunction with the recommended fill mat.

The fill mat created by over-excavation of the building areas will also allow for the removal of any resistant bedrock that may exist beneath portions of some of the proposed building pads at or near pad grade. Over-excavation of bedrock, where exposed only under portions of the building pad areas at pad grade, will reduce the potential for differential settlement across the building pad areas and will also aid in ease of excavation of footing and utility trenches.

Geologic Mitigations

No special mitigation methods are deemed necessary at this time, other than the geotechnical recommendations provided in the following sections.

Seismicity

Seismic ground rupture is generally considered most likely to occur along pre-existing active faults. Since no known faults are known to exist at, or project into the site, the probability of ground surface rupture occurring at the site is considered nil.

Due to the site's close proximity to the San Jacinto fault zone, as described above, it is reasonable to expect a strong ground motion seismic event to occur during the lifetime of the proposed development on the site. Large earthquakes could occur on other faults in the general area, but because of their lesser anticipated magnitude and/or greater distance, they are considered less significant than the San Jacinto fault zone from a ground motion standpoint.

The effects of ground shaking anticipated at the subject site should be mitigated by the seismic design requirements and procedures outlined in Chapter 16 of the California Building Code. However, it should be noted that the current building code requires the minimum design to allow a structure to remain standing after a seismic event, in order to allow for safe evacuation. A structure built to code may still sustain damage which might ultimately result in the demolishing of the structure (Larson and Slosson, 1992).

Ease of Excavation

The site is underlain by surficial deposits of unconsolidated fill and older alluvial materials. Such units do not typically require specialized excavation methods.

Igneous bedrock is present across the site either exposed at the surface or at depth. The rippability of the bedrock units at the subject site was estimated based on the relative ease, or lack of, excavation during our borings. The bedrock units which underlie the site were noted to be rippable by conventional earthmoving equipment down to the depths explored. Excavations deeper than this may require specialized methods, such as D8R or larger dozer using a multi or single shank ripper. Excavations in these materials may require specialized methods. It is anticipated that some larger non-rippable rock "floaters" may be encountered. These may require special handling.

If a more precise estimation of the rippability of the bedrock units is required a seismic refraction investigation should be conducted at the site. Such a study should involve the measuring of the seismic velocities of the underlying bedrock units, as they increase with depth, then comparing these to estimates of velocities verses ease of excavation charts. Such a study would be beneficial in areas such as the southwestern portion of the site where approximately 21 feet of cut in the bedrock is proposed.

In summary, the most important consideration for the proposed grading should include selecting an experienced, well-qualified contractor. The success to excavating the bedrock materials at the site will require the contractor to have knowledge of the appropriate ripper-equipment selection (i.e., down pressure available at the tip, tractor flywheel horsepower, tractor gross weight, etc.), ripping techniques (i.e., single or multi-shank teeth, pass spacing, tandem pushing, etc.). It should also be noted that while in some areas where deeper cuts may be possible with standardized earthmoving equipment, specialized methods may increase the speed of the excavations at the site.

RECOMMENDATIONS

Geologic Recommendations

All cut slopes proposed for the project should be observed during construction by the project engineering geologist. As proposed, cut slopes within the bedrock should be at a maximum gradient of 1.5 horizontal to 1 vertical. Such slopes are considered stable at such an inclination and to the proposed maximum height of approximately 27 feet. Observations should be conducted at intervals no greater than 10 feet. Although not anticipated at this time, mitigation measures such as stabilization fill, buttress fill, or other measures may be required if unfavorable conditions are encountered.

General Site Grading

It is imperative that no clearing and/or grading operations be performed without the presence of a qualified geotechnical engineer. An on-site, pre-job meeting with the developer, the contractor, and goetechnical engineer, and jurisdictional agency should occur prior to all grading related operations. Operations undertaken at the site without the geotechnical engineer present may result in exclusions of affected areas from the final compaction report for the project.

Grading of the subject site should be performed in accordance with the following recommendations as well as applicable portions of the California Building Code, and/or applicable local ordinances.

All areas to be graded should be stripped of significant vegetation and other deleterious materials. These materials should not be incorporated within engineered compacted fill. It is our recommendation that any existing fills that may be present be removed and replaced with engineered compacted fill.

Any uncontrolled fills encountered during site preparation should be completely removed, cleaned of significant deleterious materials, and may then be reused as compacted fill. Uncontrolled fills were identified at the site during this study and these will be encountered locally within the grading areas.

It is our recommendation that all existing uncontrolled and/or undocumented fills, buried obstructions, under any proposed flatwork and paved areas should be removed and replaced with engineered compacted fill. If this is not done, premature structural distress (settlement) of the flatwork and pavement may occur.

Cavities created by removal of subsurface obstructions should be thoroughly cleaned of loose soil, organic matter and other deleterious materials, shaped to provide access for construction equipment, and backfilled as recommended in the following Engineered Compacted Fill section of this report.

Initial Site Preparation

All existing fill and the upper portions of the older alluvial materials should be removed from areas to receive engineered compacted fill. The data developed during this investigation indicates that removals on the order of 2 to 7 feet will be required across the site to encounter competent older alluvial materials or igneous bedrock. Local areas requiring deeper removals may be present due to the existing improvements. Removals should expose older alluvial materials with a relative in-situ compaction of at least 85 percent and/or an in-situ saturation of at least 85 percent or relatively unweathered, hard, bedrock materials. The actual depths of removal should be verified during the grading operation by observation and in-place density testing.

Preparation of Fill Areas

Prior to placing fill, the surfaces of all areas to receive fill should be scarified to a depth of at least 12 inches, where practical. The scarified soil should be brought to

near optimum moisture content and recompacted to a relative compaction of at least 90 percent (ASTM D 1557).

Preparation of Foundation Areas

All footings should rest entirely upon a minimum of 24 inches of properly compacted fill material placed over competent native soils and/or bedrock. In areas where the required fill thickness is not accomplished by the removal of the existing fill, loose native soils, or weathered bedrock materials, the footing areas should be further subexcavated to a depth of at least 24 inches below the proposed footing base grade, with the subexcavation extending at least 5 feet beyond the footing lines. Where removals in excess of 5 feet deep are required, the removal areas should extend laterally at a 1:1 ratio. The bottom of this excavation should then be scarified to a depth of at least 12 inches, where practical, brought to near optimum moisture content, and recompacted to at least 90 percent relative compaction (ASTM D 1557) prior to refilling the excavation to grade as properly compacted fill.

No structure should be placed across any areas where the ratio of the maximum depth of fill to minimum depth of fill is greater than a 3 to 1 ratio as measured from the bottom of the footing. For example, if one edge of the building pad of a cut-to-fill transition lot requires 10 feet of fill, then the cut portion of the lot should be over-excavated to a minimum of 3 feet below the footing elevations.

Engineered Compacted Fill

All fill materials should be free from organic matter and other deleterious materials. Unless approved by the geotechnical engineer, rock or similar irreducible material with a maximum dimension greater than 6 inches should not be buried or placed in fills.

If required, import fill should be inorganic, non-expansive granular soils free from rocks or lumps greater than 6 inches in maximum dimension. Sources for import fill should be approved by the geotechnical engineer prior to their use.

Fill should be spread in maximum 8-inch uniform, loose lifts, each lift brought to near optimum moisture content, and compacted to a relative compaction of at least 90 percent in accordance with ASTM D 1557. The upper 12 inches of areas to be paved should be compacted to at least 95 percent (ASTM D 1557).

Based upon the relative compaction of the near surface fill and older alluvial soils determined during this investigation and the relative compaction anticipated for compacted fill soil, we estimate a compaction shrinkage factor of approximately 10 to 15 percent. Therefore, 1.10 to 1.15 cubic yards of in-place materials would be necessary to yield one cubic yard of properly compacted fill material. The volume used in calculations should include the processed bottom. These values are for estimating purposes only, and are exclusive of losses due to stripping or the removal of subsurface obstructions. Excavations within the bedrock are anticipated to bulk on the order of 0 to 5 percent. Therefore, 1.0 to 0.95 cubic yards of in-place materials would be necessary to yield one cubic yard of properly compacted material. These values may vary due to differing conditions within the project boundaries and the limitations of this investigation. Shrinkage/bulkage should be monitored during construction. If percentages vary, provisions should be made to revise final grades or adjust quantities of borrow or export.

Careful evaluation of on-site soils and any import fill for their expansion potential should be conducted during the grading operation.

Short Term Excavations

Following the California Occupational and Safety Health Act (CAL-OSHA) requirements, excavations 5 feet deep and greater should be sloped or shored. All excavations and shoring should conform to CAL-OSHA requirements.

Short-term excavation 5 feet deep and greater shall conform to Title 8 of the California Code of Regulations, Construction Safety Orders, Section 1504 and 1539 through 1547. Based on our exploratory trenches, it appears that the older alluvial soils can be classified as Type C soils and the igneous bedrock materials as Stable Rock. These are the predominant types of soil and rock on the project and all short-term excavation should be based on these types of soil. Deviation from the standard short-term slopes are permitted using option 4, Design by a Registered Professional Engineer (Section 1541.1).

Short-term slope construction and maintenance are the responsibility of the contractor, and should be a consideration of his methods of operation and the actual soil conditions encountered.

Soil Expansiveness

The materials encountered during this investigation were relatively granular and were tested and found to have a very low expansion potential. Therefore, specialized construction procedures to specifically resist expansive soil activity are not anticipated at this time. In order to verify this, additional evaluation of on-site and imported soils for their expansion potential should be conducted following completion of the grading operation.

Slope Construction

Preliminary data indicates that proposed cut slopes within the igneous bedrock should be constructed no steeper than one point five horizontal to one vertical up to 27 feet high. Preliminary data indicates that fill slopes should be constructed no steeper than two horizontal to one vertical. Fill slopes should be overfilled during construction and then cut back to expose fully compacted soil. A suitable alternative would be to compact the slopes during construction, then roll the final slopes to provide dense, erosion-resistant surfaces.

Where fills are to be placed against existing slopes steeper than five horizontal to one vertical, the fill should be properly keyed and benched into competent native materials. The key, constructed across the toe of the slope, should be a minimum of 12 to 15-feet wide, a minimum of two feet deep at the toe, and sloped back at two percent.

Benches should be constructed at approximately two to four feet vertical intervals. Typical keying and benching operations are presented on Enclosure E-1, within Appendix E.

Slope Protection

Since the native materials are susceptible to erosion by running water, measures should be provided to prevent surface water from flowing over slope faces. Slopes at the project should be planted with a deep rooted ground cover as soon as possible after completion. The use of succulent ground covers such as iceplant or sedum is not recommended. If watering is necessary to sustain plant growth on slopes, then the watering operation should be monitored to assure proper operation of the irrigation system and to prevent over watering.

Establishing such vegetation on cut slopes within the igneous bedrock may be difficult. Other methods such as the use of jute netting may be considered.

Due to their inclination, routine maintenance of the 1.5 to 1 cut slopes may be problematic.

Foundation Design

If the site is prepared as recommended, the proposed apartment structures may be safely founded on conventional spread foundations, either individual spread footings and/or continuous wall footings, bearing either on a minimum of 24 inches of engineered compacted fill or bearing entirely on competent native materials. All foundations should have a minimum width of 12 inches and should be established a minimum of 12 inches below lowest adjacent grade.

For the minimum width and depth, spread foundations may be designed using an allowable bearing pressure of 1,800 psf. This bearing pressure may be increased by 300 psf for each additional foot of width or depth, up to a maximum of 4,000 psf. For example, a footing 2 feet wide and embedded 3 feet will have an allowable bearing pressure of 2,700 psf.

The above values are net pressures; therefore, the weight of the foundations and the backfill over the foundations may be neglected when computing dead loads. The values apply to the maximum edge pressure for foundations subjected to eccentric loads or overturning. The recommended pressures apply for the total of dead plus frequently applied live loads, and incorporate a factor of safety of at least 3.0. The allowable bearing pressures may be increased by one-third for temporary wind or seismic loading. The resultant of the combined vertical and lateral seismic loads should act within the middle one-third of the footing width. The maximum calculated edge pressure under the toe of foundations subjected to eccentric loads or overturning should not exceed the increased allowable pressure. Buildings should be setback from slopes as detailed on the California Building Code.

Resistance to lateral loads will be provided by passive earth pressure and base friction. For footings bearing against compacted fill, passive earth pressure may be considered to be developed at a rate of 400 pounds per square foot per foot of depth. Base friction may be computed at 0.44 times the normal load. Base friction and passive

earth pressure may be combined without reduction. These values are for dead load plus live load and may be increased by 1/3 for wind or seismic.

Settlement

Total settlement of individual foundations will vary depending on the width of the foundation and the actual load supported. Maximum settlement of shallow foundations designed and constructed in accordance with the preceding recommendations are estimated to be on the order of 0.5 inch. Differential settlements between adjacent footings should be about one-half of the total settlement. Settlement of all foundations is expected to occur rapidly, primarily as a result of elastic compression of supporting soils as the loads are applied, and should be essentially completed shortly after initial application of the loads.

Slabs-On-Grade

To provide adequate support, concrete slabs-on-grade should bear on a minimum of 24 inches of compacted soil. The final pad surfaces should be rolled to provide smooth, dense surfaces upon which to place the concrete.

Slabs to receive moisture sensitive coverings should be provided with a moisture vapor barrier. This barrier may consist of an impermeable membrane. Two inches of sand over the membrane will reduce punctures and aid in obtaining a satisfactory concrete cure. The sand should be moistened just prior to placing of concrete.

The slabs should be protected from rapid and excessive moisture loss which could result in slab curling. Careful attention should be given to slab curing procedures, as the site area is subject to large temperature extremes, humidity, and strong winds.

Exterior Flatwork

To provide adequate support, exterior flatwork improvements should rest on a minimum of 12 inches of soil compacted to at least 90 percent (ASTM D 1557).

Flatwork surface should be sloped a minimum of 1 percent away from buildings and slopes, to approved drainage structures.

Wall Pressures

The design of footings for retaining walls should be performed in accordance with the recommendations described earlier within under Preparation of Foundation Areas and Foundation Design. For design of retaining wall footings, the resultant of the applied loads should act in the middle one-third of the footing, and the maximum edge pressure should not exceed the basic allowable value without increase.

For design of retaining walls unrestrained against movement at the top, we recommend an equivalent fluid pressure of 44 pounds per cubic foot (pcf) be used. This assumes level backfill consisting of recompacted, non-expansive, native soils placed against the structures and within the back cut slope extending upward from the base of the stem at 35 degrees from the vertical or flatter.

Retaining walls subject to uniform surcharge loads within a horizontal distance behind the structure equal to the structural height should be designed to resist additional lateral loads equal to 0.3 times the surcharge load. Any isolated or line loads from adjacent foundations or vehicular loading will impose additional wall loads and should be considered individually.

To avoid over stressing or excessive tilting during placement of backfill behind walls, heavy compaction equipment should not be allowed within the zone delineated by a 45 degree line extending from the base of the wall to the fill surface. The backfill directly behind the walls should be compacted using light equipment such as hand operated vibrating plates and rollers. No material larger than 3 inches in diameter should be placed in direct contact with the wall.

Wall pressures should be verified prior to construction, when the actual backfill materials and conditions have been determined. Recommended pressures are applicable only to level, properly drained, non-expansive backfill with no additional surcharge loadings. If inclined backfills are proposed, this firm should be contacted to develop appropriate active earth pressure parameters. Toe bearing pressure for non-structural walls on soils, not prepared as described earlier under Preparation of Foundation Areas, should not exceed California Building Code values, (CBC Table 18-1-A).

Preliminary Pavement Design

Testing and design for preliminary on-site pavement was conducted in accordance with the California Highway Design Manual. Based upon our preliminary sampling and testing, and upon Traffic Indices generally associated with multi-family projects, it appears that the structural sections tabulated below should provide satisfactory pavements for the subject improvements:

TYPE OF TRAFFIC	TRAFFIC INDEX (T.I.)	DESIGN R-VALUE	PRELIMINARY SECTION
Light Vehicle and Incidental Truck Traffic	5.0	15	0.25' AC/0.65' AB or 0.50' JPCP/0.35' AB

AC - Asphalt Concrete
AB - Class 2 Aggregate Base
JPCP - Jointed Plain Concrete Pavement with MR ≥ 625 psi

The above structural section is predicated upon 90 percent relative compaction (ASTM 1557) of all utility trench backfills and 95 percent relative compaction (ASTM 1557) of the upper 12 inches of street subgrade soils and of any aggregate base utilized. In addition, the aggregate base should meet Caltrans specifications for Class 2 Aggregate Base.

In areas of the pavement which will receive high abrasion loads due to start-ups and stops, or where trucks will move on a tight turning radius, consideration should be given to installing concrete pads. Such pads should be a minimum of 0.5 foot thick concrete, with a 0.35 foot thick aggregate base. Concrete pads are also recommended in areas adjacent to trash storage areas where heavier loads will occur due to operation of trucks lifting trash dumpsters.

The above pavement designs were based upon the results of preliminary sampling and testing, and should be verified by additional sampling and testing when the actual subgrade soils are exposed.

Sulfate Protection

The results of the soluble sulfate tests conducted on selected subgrade soils expected to be encountered at foundation levels are presented on Enclosure C.

Based on the test results, it appears that there is a negligible sulfate exposure to concrete elements in contact with the on site soils per the 2016 California Building Code. Therefore, no specific recommendations are given for concrete elements to be in contact with the on site soils.

Infiltration

Based upon our field investigation and infiltration test data, a clear water absorption rate of 2.0 inches per hour (30 gal/sf/day) appears to be applicable for the planned infiltration areas as tested. An appropriate factor of safety should be applied as stated within the Riverside County Flood Control and Water Conservation District Design Handbook for Low Impact Development Best Management Practices (2011).

To ensure continued infiltration capability of the infiltration areas, a program to maintain the facilities should be considered. This program should include periodic removal of accumulated materials, which can slow the infiltration and decrease the water quality. Materials to be removed from the catch basin areas typically consist of litter, dead plant matter, and soil fines (silts and clays). Proper maintenance of the system is critical. A maintenance program should be prepared and properly executed. At a minimum, the program should be as outlined in the Riverside County Flood Control and Water Conservation District Design Handbook for Low Impact Development Best Management Practices (2011).

The program should also incorporate the recommendations contained within this report and any other jurisdictional agency requirements.

Systems should be set back at least 25 feet from foundations and walls.

Any geotextile filter fabric utilized should consist of such that it prevents soil piping but has greater permeability than the existing soil.

During site development, care should be taken to not disturb the area(s) proposed for infiltration as changes in the soil structure could occur resulting in a change of the soil infiltration characteristics.

Construction Monitoring

Post investigative services are an important and necessary continuation of this investigation. Project plans and specifications should be reviewed by this firm prior to construction to confirm that the intent of the recommendations presented herein have been incorporated into the design. Testing for on-site pavement design should be performed after the site is rough graded. In addition, additional expansion index testing should be conducted in order to evaluate the impact, if any, to the site development as proposed.

During construction, sufficient and timely geotechnical observation and testing should be provided to correlate the findings of this investigation with the actual subsurface conditions exposed during construction. Items requiring observation and testing include, but are not necessarily limited to, the following

1. Site preparation-stripping and removals.

2. Excavations, including approval of the bottom of excavation prior to backfilling.

3. Scarifying and recompacting prior to fill placement.

4. Subgrade preparation for pavements and slabs-on-grade.

5. Placement of engineered compacted fill and backfill, including approval of fill materials and the performance of sufficient density tests to evaluate the degree of compaction being achieved.

TIME LIMITATIONS

The findings of this report are valid as of this date. Changes in the condition of a property can, however, occur with the passage of time, whether they be due to natural processes or the work of man on this or adjacent properties. In addition, changes in the Standards-of-Practice and/or Governmental Codes may occur. Due to

such changes, the findings of this report may be invalidated wholly or in part by changes beyond our control. Therefore, this report should not be relied upon after a significant amount of time without a review by LOR Geotechnical Group, Inc. verifying the suitability of the conclusions and recommendations.

LIMITATIONS

This report contains geotechnical conclusions and recommendations developed solely for use by ROC III CA Belago, LLC, and their designates for the purposes described earlier. It may not contain sufficient information for other uses or the purposes of other parties. The contents should not be extrapolated to other areas or used for other facilities without consulting LOR Geotechnical Group, Inc.

The recommendations are based on interpretations of the subsurface conditions concluded from information gained from subsurface explorations, and a surficial site reconnaissance. The interpretations may differ from actual subsurface conditions, which can vary horizontally and vertically across the site. Due to possible subsurface variations, all aspects of field construction addressed in this report should be observed and tested by the project geotechnical consultant.

If parties other than LOR Geotechnical Group, Inc. provide construction monitoring services, they must be notified that they will be required to assume responsibility for the geotechnical phase of the project being completed by concurring with the recommendations provided in this report or by providing alternative recommendations.

The report was prepared using generally accepted geotechnical engineering practices under the direction of a state licensed geotechnical engineer. No warranty, expressed or implied, is made as to conclusions and professional advice included in this report. Any persons using this report for bidding or construction purposes should perform such independent investigations as deemed necessary to satisfy themselves as to the surface and subsurface conditions to be encountered and the procedures to be used in the performance of work on this project.

ROC III CA Belago, LLC
February 21, 2017

Project No. 33289.1

CLOSURE

It has been a pleasure to assist you with this project. We look forward to being of further assistance to you as construction begins.

Should you have any questions regarding this report, please do not hesitate to contact this office at your convenience.

Respectfully submitted,
LOR Geotechnical Group, Inc.

Andrew A. Tardie
Staff Geologist

John P. Leuer, GE 2030
President

Robert M Markoff, CEG 2073
Engineering Geologist

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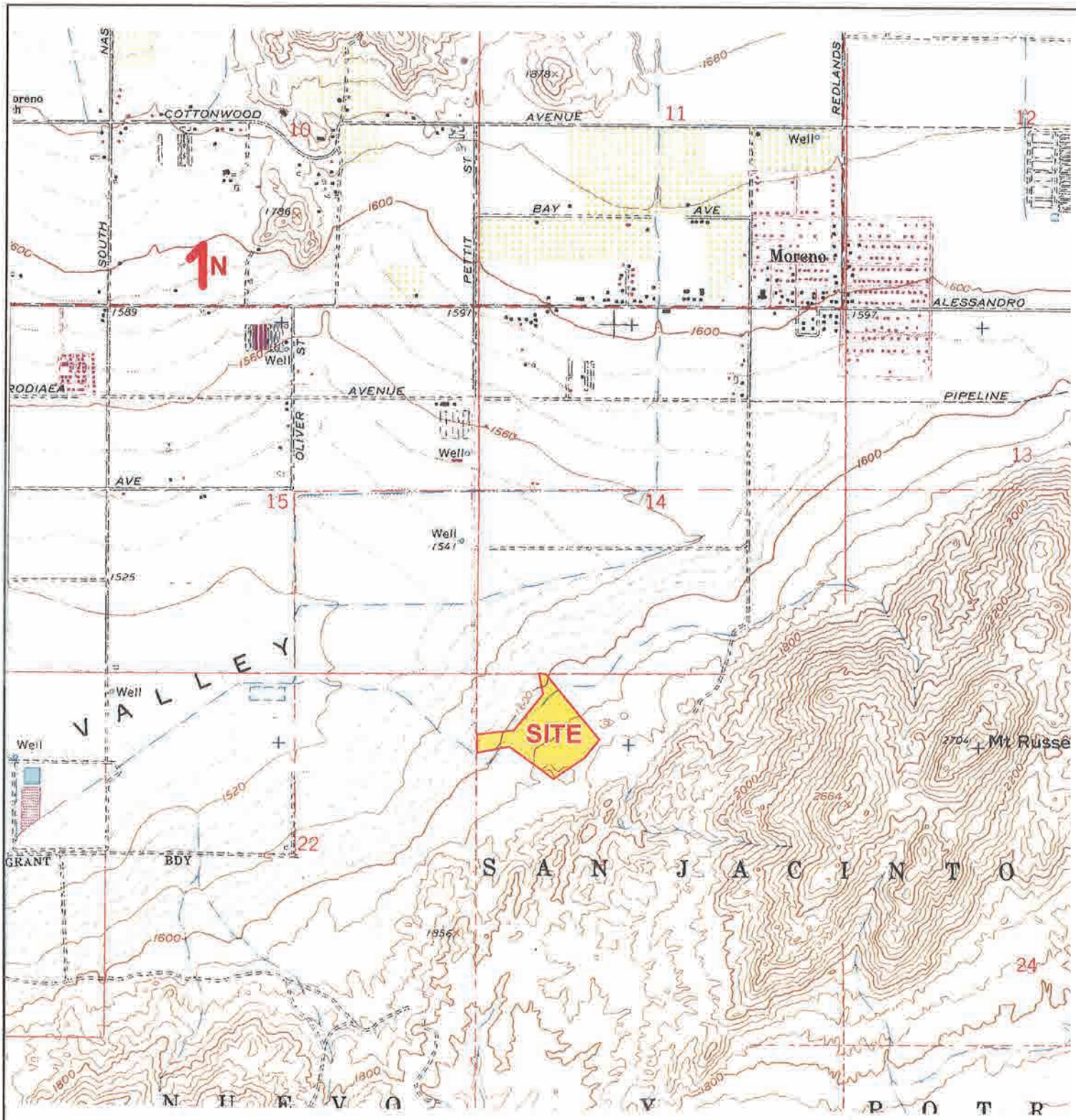
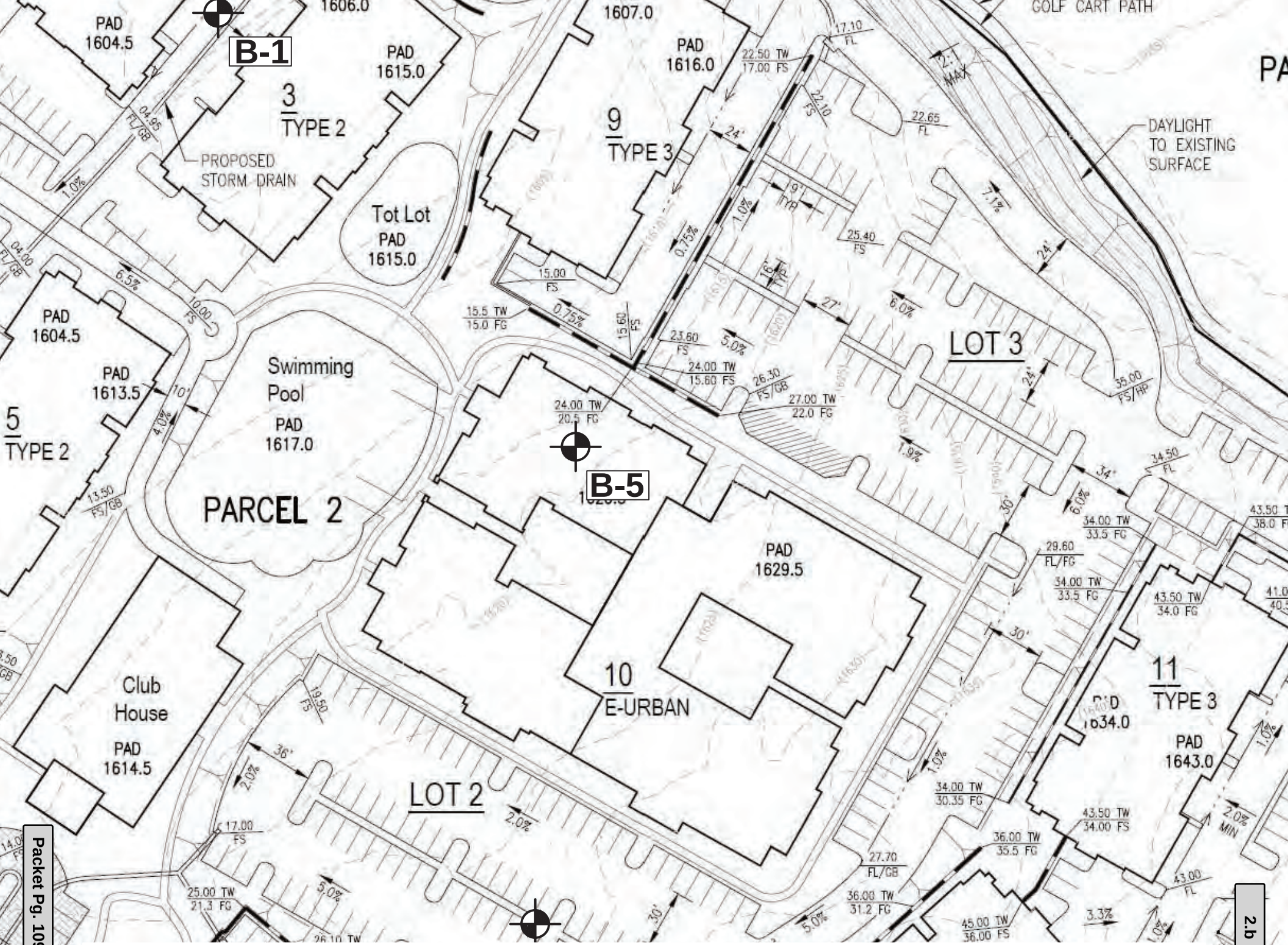
APPENDIX A

Index Map, Plate, Cross Section, Regional Geologic Map, and Historical Seismicity Maps



INDEX MAP

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	A-1
LOR Geotechnical Group, Inc.		DATE:	FEBUARY 2017
		SCALE:	1" = 2,000'


B-1
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PAD 1604.5
PAD 1606.0
PAD 1607.0
PAD 1615.0
PAD 1616.0
3 TYPE 2
9 TYPE 3
PROPOSED STORM DRAIN
Tot Lot PAD 1615.0
DAYLIGHT TO EXISTING SURFACE
GOLF CART PATH
PAD 1604.5
PAD 1613.5
5 TYPE 2
Swimming Pool PAD 1617.0
PARCEL 2
LOT 3
LOT 2
PAD 1629.5
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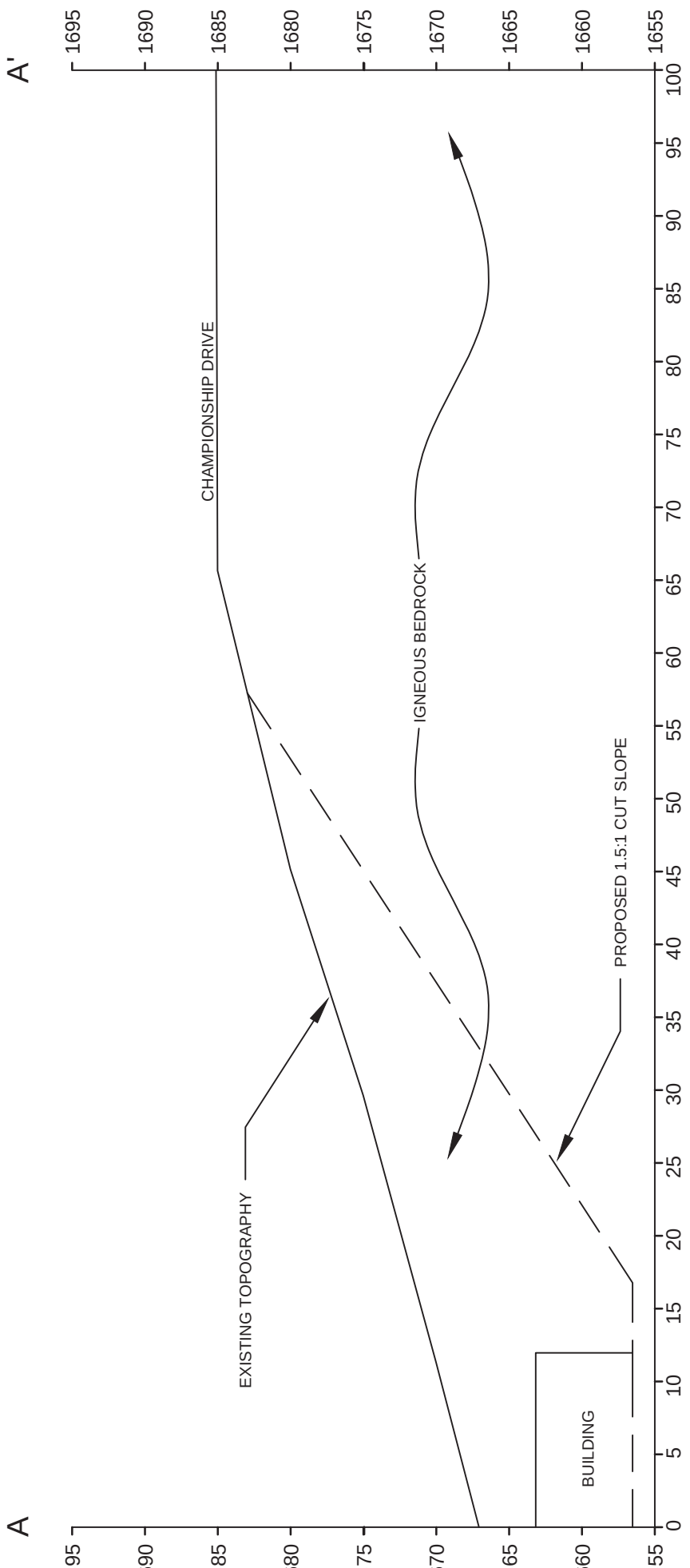
11 TYPE 3
PAD 1643.0
Club House PAD 1614.5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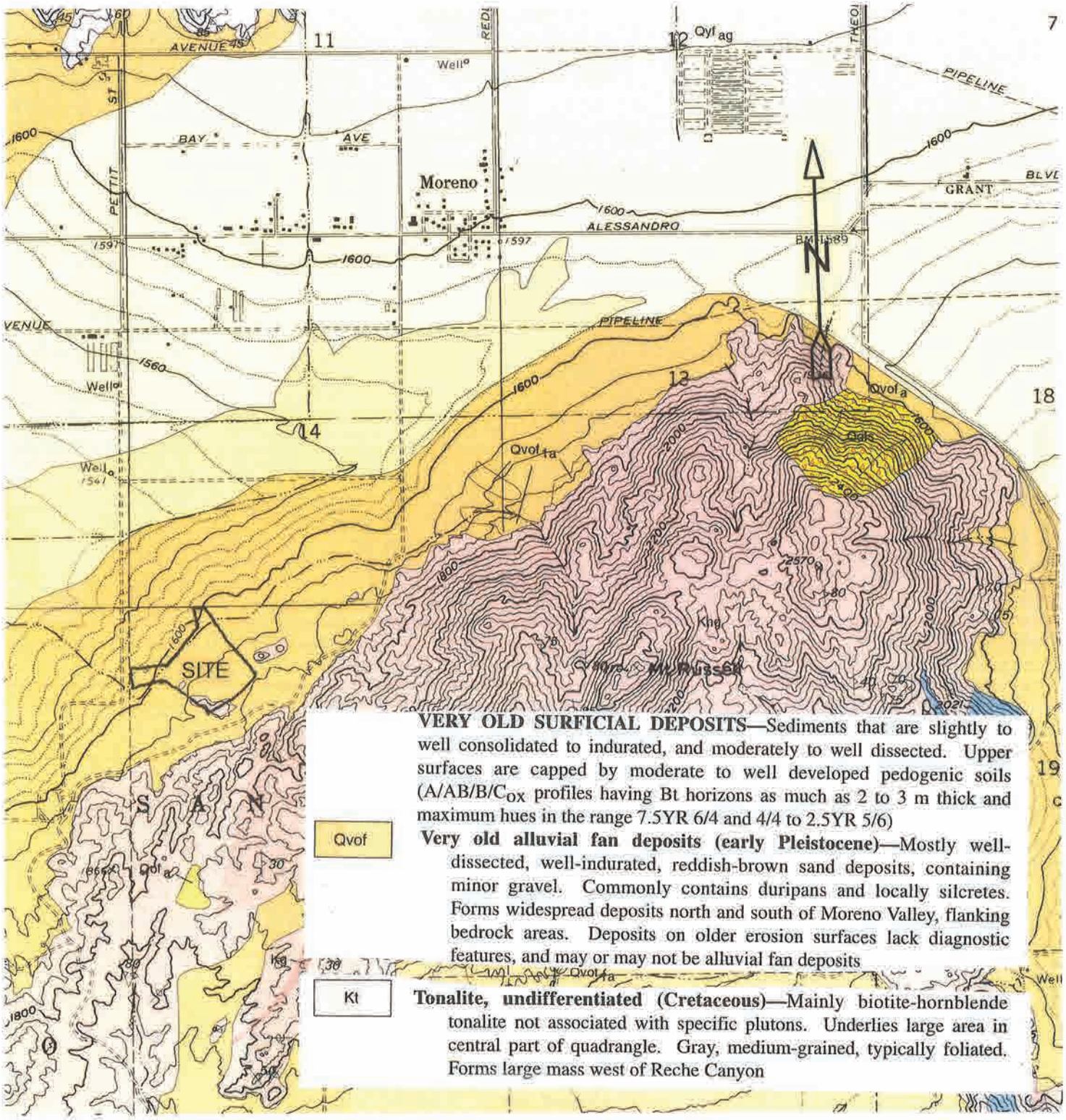
CHAMPIONSHIP DRIVE
IGNEOUS BEDROCK
PROPOSED 1.5:1 CUT SLOPE
EXISTING TOPOGRAPHY
BUILDING



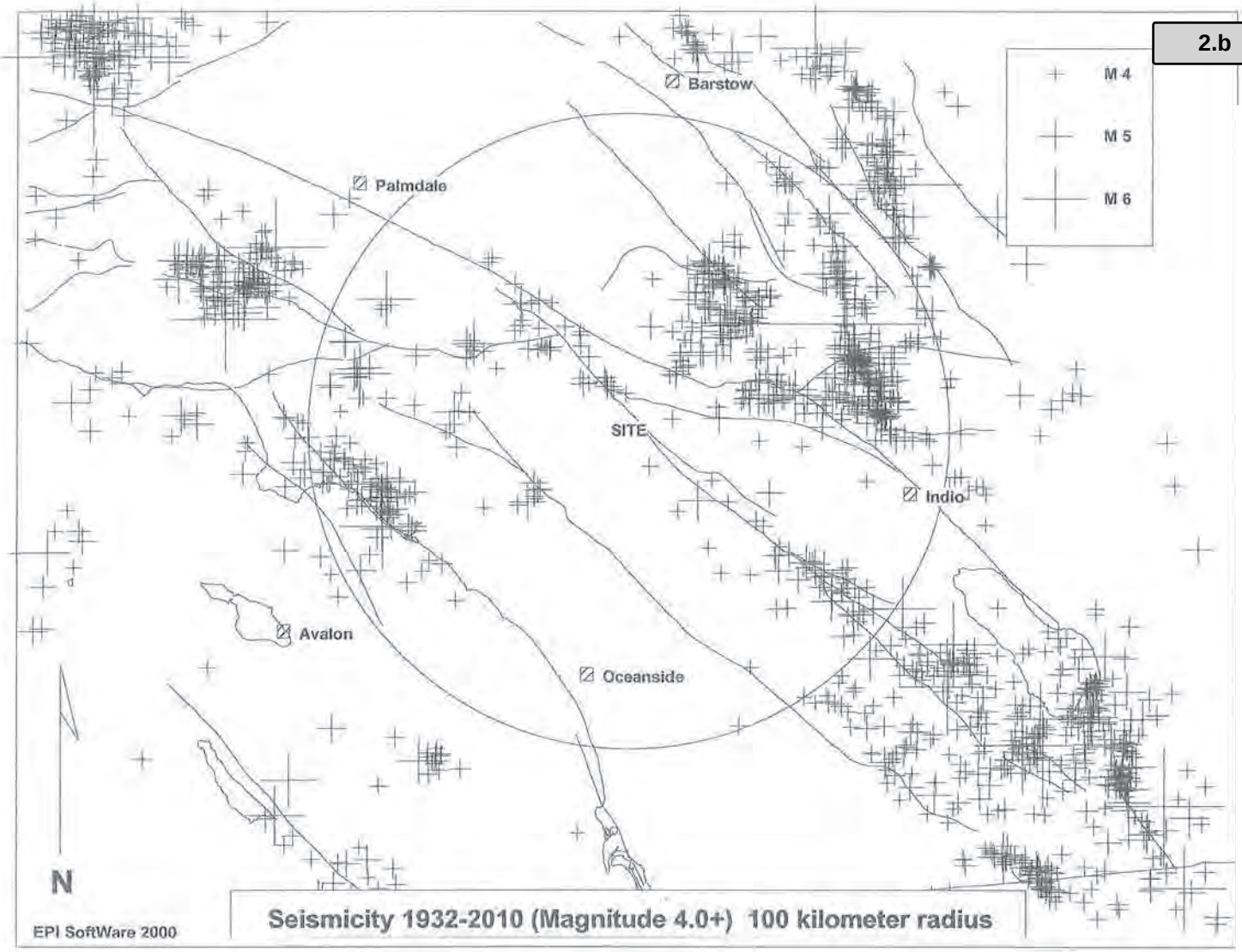
VERY OLD SURFICIAL DEPOSITS—Sediments that are slightly to well consolidated to indurated, and moderately to well dissected. Upper surfaces are capped by moderate to well developed pedogenic soils ($A/AB/B/C_{ox}$ profiles having Bt horizons as much as 2 to 3 m thick and maximum hues in the range 7.5YR 6/4 and 4/4 to 2.5YR 5/6)

Qvof — **Very old alluvial fan deposits (early Pleistocene)**—Mostly well-dissected, well-indurated, reddish-brown sand deposits, containing minor gravel. Commonly contains duripans and locally silcretes. Forms widespread deposits north and south of Moreno Valley, flanking bedrock areas. Deposits on older erosion surfaces lack diagnostic features, and may or may not be alluvial fan deposits

Kt — **Tonalite, undifferentiated (Cretaceous)**—Mainly biotite-hornblende tonalite not associated with specific plutons. Underlies large area in central part of quadrangle. Gray, medium-grained, typically foliated. Forms large mass west of Reche Canyon

REGIONAL GEOLOGIC MAP (Morton and Matti, 2001)

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	A-4
LOR Geotechnical Group, Inc.		DATE:	FEBRUARY 2017
		SCALE:	1" = 2,000'



SITE LOCATION: 33.9004 LAT. -117.1702 LONG.

MINIMUM LOCATION QUALITY: C

TOTAL # OF EVENTS ON PLOT: 1504

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 597

0 50 100
KILOMETERS

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

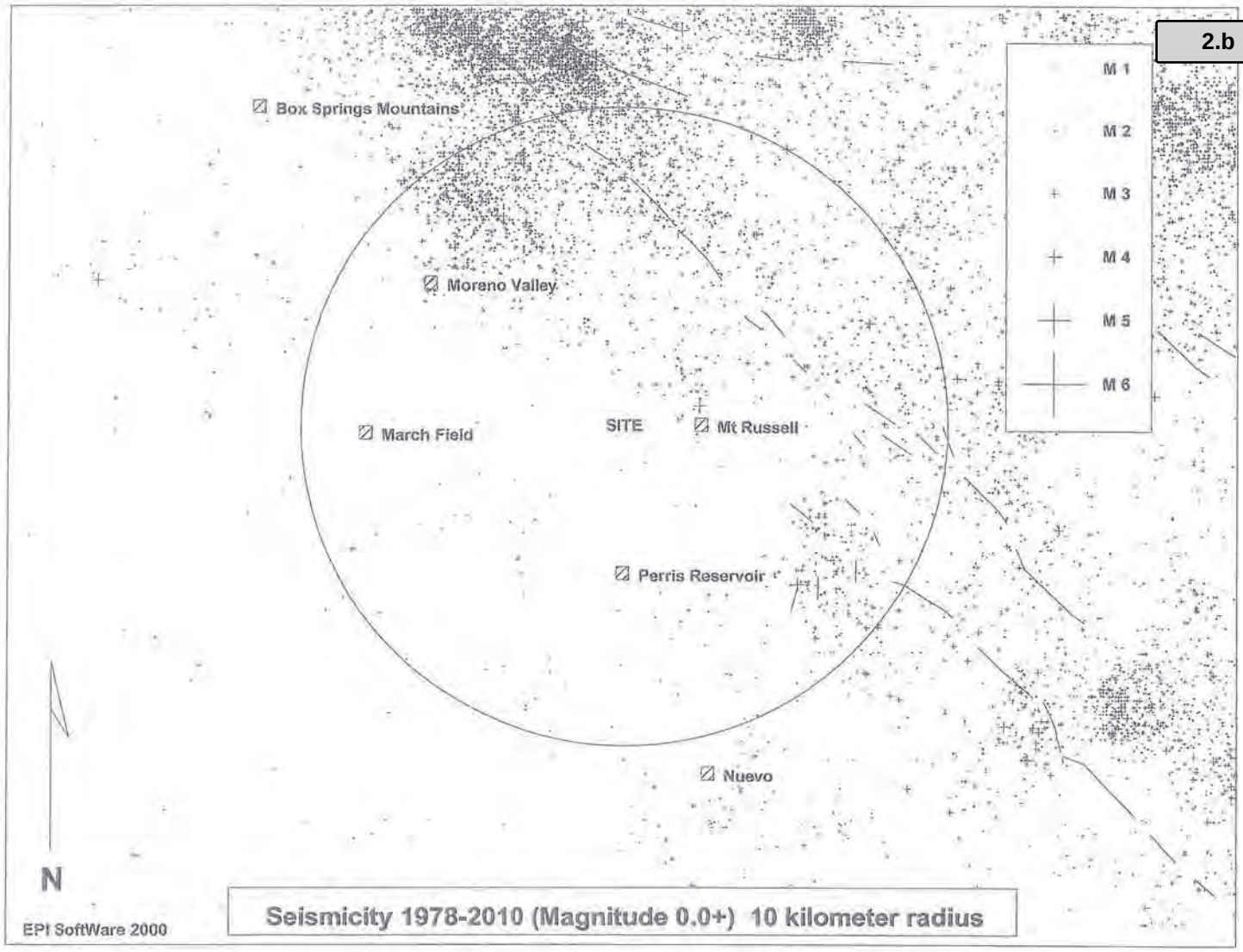
4.0- 4.9 : 537
5.0- 5.9 : 55
6.0- 6.9 : 4
7.0- 7.9 : 1
8.0- 8.9 : 0

CLOSEST EVENT: 4.1 ON SATURDAY, FEBRUARY 13, 201(LOCATED APPROX. 12 KILOMETERS NORTH OF THE SITE

LARGEST 5 EVENTS:

7.3 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 75 KILOMETERS NORTHEAST OF THE SITE
6.4 ON SATURDAY, MARCH 11, 193: LOCATED APPROX. 82 KILOMETERS SOUTHWEST OF THE SITE
6.3 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 46 KILOMETERS NORTHEAST OF THE SITE
6.1 ON THURSDAY, APRIL 23, 199: LOCATED APPROX. 78 KILOMETERS EAST OF THE SITE
6.0 ON SATURDAY, DECEMBER 04, 194: LOCATED APPROX. 77 KILOMETERS EAST OF THE SITE

Enclosure A-5



SITE LOCATION: 33.9004 LAT. -117.1702 LONG.

MINIMUM LOCATION QUALITY: A

TOTAL # OF EVENTS ON PLOT: 8288

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 2052

0 5 10
KILOMETERS

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

0.0- .9 : 312
1.0- 1.9 : 1512
2.0- 2.9 : 218
3.0- 3.9 : 10
4.0- 4.9 : 0
5.0- 5.9 : 0
6.0- 6.9 : 0
7.0- 7.9 : 0
8.0- 8.9 : 0

CLOSEST EVENT: 1.1 ON TUESDAY, SEPTEMBER 29, 1981 LOCATED APPROX. .3 KILOMETER OF THE SITE

LARGEST 5 EVENTS:

3.8 ON MONDAY, JULY 10, 200[illegible] LOCATED APPROX. 7 KILOMETERS SOUTHEAST OF THE SITE
3.8 ON THURSDAY, SEPTEMBER 12, 199[illegible] LOCATED APPROX. 2 KILOMETERS EAST OF THE SITE
3.6 ON SATURDAY, JUNE 04, 198[illegible] LOCATED APPROX. 9 KILOMETERS NORTHEAST OF THE SITE
3.5 ON TUESDAY, OCTOBER 13, 1987 LOCATED APPROX. 7 KILOMETERS NORTHWEST OF THE SITE
3.5 ON FRIDAY, JUNE 21, 198[illegible] LOCATED APPROX. 9 KILOMETERS NORTH OF THE SITE

Enclosure A-6

APPENDIX B

Field Investigation Program and Boring Logs

APPENDIX B
FIELD INVESTIGATION

Subsurface Exploration

The site was investigated on August 11, 2016 and consisted of advancing 8 exploratory borings to depths of approximately 15 to 41 feet below the existing ground surface. The approximate locations of our trenches are shown on the attached Plate, Enclosure A-2, within Appendix A.

The drilling exploration was conducted using a truck mounted Mobile B61B drill rig equipped with 8-inch diameter hollow stem augers. The soils were continuously logged by a staff geologist from this firm who inspected the site, created detailed logs of the borings, obtained undisturbed, as well as disturbed, soil samples for evaluation and testing, and classified the soils by visual examination in accordance with the Unified Soil Classification System.

Relatively undisturbed samples of the subsoils were obtained at a maximum interval of 5 feet. The samples were recovered by using a California split barrel sampler of 2.50-inch inside diameter and 3.00-inch outside diameter, from the ground surface to the maximum depths attained. The sampler was driven by a 140-pound automatic trip hammer dropped from a height of 30 inches. The number of hammer blows required to drive the sampler into the ground the final 12 inches was recorded and further converted to an equivalent SPT N-value. Factors such as efficiency of the automatic trip hammer used during this investigation (80%), inner diameter of the hollow stem auger (3.75 in), and rod length at the test depth were considered for further computing of equivalent SPT N-values corrected for field procedures (N60) which are included in the boring logs, Enclosures B-1 through B-8.

The undisturbed soil samples were retained in brass sample rings of 2.42 inches in diameter and 1.00 inch in height, and placed in sealed plastic containers. Disturbed soil samples were obtained at selected levels within the borings and placed in sealed containers for transport to our geotechnical laboratory.

All samples obtained were taken to our geotechnical laboratory for storage and testing. Detailed logs of the borings are presented on the enclosed Boring Logs, Enclosures B-1 through B-8. A Boring Log Legend is presented on Enclosure B-i. A Soil Classification Chart is presented on Enclosure B-ii.

CONSISTENCY OF SOIL

SANDS

SPT BLOWS	CONSISTENCY
0-4	Very Loose
4-10	Loose
10-30	Medium Dense
30-50	Dense
Over 50	Very Dense

COHESIVE SOILS

SPT BLOWS	CONSISTENCY
0-2	Very Soft
2-4	Soft
4-8	Medium
8-15	Stiff
15-30	Very Stiff
30-60	Hard
Over 60	Very Hard

SAMPLE KEY

Symbol	Description
	INDICATES CALIFORNIA SPLIT SPOON SOIL SAMPLE
	INDICATES BULK SAMPLE
	INDICATES SAND CONE OR NUCLEAR DENSITY TEST
	INDICATES STANDARD PENETRATION TEST (SPT) SOIL SAMPLE

TYPES OF LABORATORY TESTS

1	Atterberg Limits
2	Consolidation
3	Direct Shear (undisturbed or remolded)
4	Expansion Index
5	Hydrometer
6	Organic Content
7	Proctor (4", 6", or Cal216)
8	R-value
9	Sand Equivalent
10	Sieve Analysis
11	Soluble Sulfate Content
12	Swell
13	Wash 200 Sieve

BORING LOG LEGEND

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY,CALIFORNIA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	B-i
LOR Geotechnical Group, Inc.		DATE:	AUGUST 2016

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
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

PARTICLE SIZE LIMITS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	

12" 3" 3/4" No. 4 No. 10 No. 40 200

(U.S. STANDARD SIEVE SIZE)

SOIL CLASSIFICATION CHART

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CALIFORNIA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	B-ii
LOR Geotechnical Group, Inc.		DATE:	AUGUST 2016

LOG OF BORING B-1

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	25	3, 7, 9 10, 11	5.0		113.8			SM	@ 0 feet, FILL:SILTY SAND, approximately 10% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 30% silty fines, brown, dry.
5	23		7.0		122.0				@ 2 feet, OLDER ALLUVIUM:SILTY SAND, approixmately 25% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 25% silty fines, brown, damp, trace pinhole porosity, micaceous.
10	39		6.1		122.6				@ 5 feet, becomes slightly finer grained, increase in moisture, remains micaceous, strong brown.
15	35		7.7		117.8				
20	38		4.2		124.2				END OF BORING Fill to 2' No groundwater No bedrock
25									
30									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1605
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-1

LOG OF BORING B-2

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)	DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
0	42		4.7	123.4			SM	@ 0 feet, FILL: SILTY SAND, approximately 10% coarse grained sand, 30% medium grained sand, 45% fine grained sand, 15% silty fines, brown, dry.
								@ 2 feet, OLDER ALLUVIUMSILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 25% silty fines, brown, damp, trace thin calcite stringers.
5	39		8.7	127.1				@ 5 feet, becomes strong brown, moist, micaceous, trace clay, trace pinhole porosity.
10	42		6.1	130.4				@ 10 feet, SILTY SAND, approximately 30% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 15% silty fines, strong brown, damp, micaceous.
15	57		10.1	113.0				@ 15 feet, becomes red-brown, moist.
20	68		7.6	127.2				
25	83 for 9"		9.3	110.8				@ 25 feet, BEDROCK: TONALITE, moderately to highly weathered, coarse to medium grained.
								END OF BORING
								Fill to 2'
								No groundwater
								Bedrock @ 25'
30								

TEST DATA

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1632
		DATE DRILLED:	August 11, 2016
LOR GEOTECHNICAL GROUP INC.		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-2

LOG OF BORING B-3

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	8, 9, 10, 11							SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines, brown, dry.
	49		5.3		116.6				@ 1 foot, OLDER ALLUVIUM: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines with trace clay, red-brown, damp, micaceous.
5	57 for 11"		5.5		117.5				@ 5.5 feet, BEDROCK: TONALITE, moderately weathered, coarse to medium grained, dry.
10	46 for 4"		4.3						@ 10 feet, rings disturbed.
									END OF BORING Fill to 1' No groundwater Bedrock @ 5.5'
15									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1603
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-3

LOG OF BORING B-4

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	15		3.7		124.7			SM	@ 0 feet, FILL: SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 35% fine grained sand, 15% silty fines, brown, dry. @ 2 feet, becomes damp.
5	13		9.7		120.6				@ 5 feet, OLDER ALLUVIUM: SILTY SAND, approximately 20% coarse grained sand, 20% medium grained sand, 20% fine grained sand, 40% silty fines with trace clay, strong brown, trace pinhole porosity, moist.
	39		6.5		124.7				
10	36		6.1		122.3				@ 7 feet, SILTY SAND, approximately 25% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 15% silty fine, red-brown, dry.
15	33		4.6		122.0			SW SM	@ 15 feet, WELL GRADED SAND with SILT, approximately 30% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 10% silty fines, speckled red-brown, damp, micaceous.
20	33		3.8		118.1				
25	27		8.2		116.7			SM	@ 25 feet SILTY SAND, approximately 25% coarse grained sand, 30% medium grained sand, 30% fine grained sand, 15% silty fines, yellow-brown, dry, micaceous.
30	25		6.3		115.7				@ 30 feet, SILTY SAND, approximately 5% coarse grained sand, 10% medium grained sand, 60% fine grained sand, 25% siilty fines, red-brown, damp.
35	31		7.6		121.6				
40	54 for 3"								@ 36.5 feet, BEDROCK: TONALITE, slighlty weathered, coarse grained, dry. @ 40 feet, no recovery. END OF BORING Fill to 5' No groundwater Bedrock @ 36.5
45									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1627
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-4

LOG OF BORING B-5

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0								SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 30% silty fines, brown, dry.
	37		5.7		113.2				@ 2 feet, OLDER ALLUVIUM: SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 20% silty fines, strong brown, damp, micaceous, trace pinhole porosity.
5	23		5.5		119.6				
10	33		6.2		117.9				@ 10 feet, becomes finer grained, approximately 10% coarse grained sand, 30% medium grained sand, 40% fine grained sand, 20% silty fines, yellow-brown, damp, micaceous.
15	32		5.5		119.7				
20	41		2.8		112.7			SW	@ 20 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 5% silty fines, speckeled red-brown, dry, micaceous.
									END OF BORING
25									Fill to 2'
									No groundwater
30									No bedrock

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1620
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-5

LOG OF BORING B-6

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	7, 9, 10, 11							SM	@ 0 feet, FILL: SILTY SAND, approximately 30% coarse grained sand, 30% medium grained sand, 25% fine grained sand, 15% silty fines, brown, dry.
	11		7.2		117.3				@ 1 foot, OLDER ALLUVIUM SILTY SAND, approximately 25% coarse grained sand, 25% medium grained sand, 30% fine grained sand, 20% silty fines, red-brown, damp.
5	9		8.4		121.9				@ 5 feet, contains trace pinhole porosity, strong brown.
	28		4.2		121.2				
10	14		2.9		107.7			SW	@ 10 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 5% silty fines, speckeled red-black, damp, micaceous
15	34		3.3		112.4				@ 17 feet, BEDROCK: TONALITE, highly weathered, coarse grained, dry.
20	51 for 5"		4.8		115.7				@ 20 feet, slighlty less weathered, rings disturbed.
									END OF BORING
25									Fill to 1'
									No groundwater
									Bedrock @ 17'

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1651
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-6

LOG OF BORING B-7

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
	TEST DATA								
0	66 for 12"		4.4		113.8			SM	@ 0 feet, FILL: SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 25% fine grained sand, 30% silty fines, brown, dry. @ 0.5 feet, OLDER ALLUVIUMSILTY SAND, approximately 15% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 20% silty fines with trace clay, strong brown, dry, abundant pinhole and slighlty larger porosity.
5	36		8.9		125.4			SC	@ 5 feet, CLAYEY SAND, approximately 20% coarse grained sand, 30% medium grained sand, 35% fine grained sand, 15% clayey fines of low plasticity, red-brown, damp.
10	47		5.6		126.1				@ 10 feet, BEDROCK: TONALITE, highly to severly weathered, coarse grained, speckeled red-brown, dry.
15	46 for 2"		3.0		112.9				@ 15 feet, becomes less weathered, speckeled gray-white, no recovery. END OF BORING Fill to 0.5' No groundwater Bedrock @ 10'
20									

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1650
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-7

LOG OF BORING B-8

DEPTH IN FEET	SPT BLOW COUNTS	LABORATORY TESTS	MOISTURE CONTENT (%)		DRY DENSITY (PCF)	SAMPLE TYPE	LITHOLOGY	U.S.C.S.	DESCRIPTION
			TEST DATA						
0	17		3.6		115.3			SM	@ 0 feet, FILL: SILTY SAND, approximately 15% coarse grained sand, 25% medium grained sand, 30% fine graine sand, 30% silty fines, brown, dry. @ 2 feet, SILTY SAND, approximately 20% coarse grained sand, 25% medium grained sand, 35% fine grained sand, 20% silty fines, light brown, damp.
5	12		4.9		109.7				
	14		3.4		115.6				@ 7 feet, OLDER ALLUVIUM:SILTY SAND, approximately 15% coarse grained sand, 30% medium grained sand, 25% fine grained sand, 20% silty fines, yellow-brown, damp, trace pinhole porosity, micaceous.
10	21		5.2		119.2				
15	32		2.6		108.3				@ 15 feet, becomes strong brown, trace pinhole porosity remains.
20	35		10.1		126.7			SW	@ 20 feet, WELL GRADED SAND, approximately 30% coarse grained sand, 35% medium grained sand, 30% fine grained sand, 5% silty fines, speckeled red-brown, dry, micaceous.
25	59							ML SM	@ 25 feet, SILTY SAND/SANDY SILT, approximately 15% coarse grained sand, 15% medium grained sand, 20% fine grained sand, 50% silty fines, strong brown, damp.
30									END OF BORING Fill to 7' No groundwater No bedrock

PROJECT:	Proposed Apartment Complex	PROJECT NUMBER:	33289.1
CLIENT:	ROC III CA Belago, LLC	ELEVATION:	1597
LOR GEOTECHNICAL GROUP INC.		DATE DRILLED:	August 11, 2016
		EQUIPMENT:	GP Drilling
		HOLE DIA.: 8'	ENCLOSURE: B-8

APPENDIX C

Laboratory Testing Program and Test Results

APPENDIX C
LABORATORY TESTING

General

Selected soil and bedrock samples obtained from the borings were tested in our geotechnical laboratory to evaluate the physical properties of the soils affecting foundation design and construction procedures. Laboratory testing included, in-place moisture content and density, laboratory compaction, direct shear, expansion index, sieve analysis, sand equivalent, and soluble sulfate content. Descriptions of the laboratory tests are presented in the following paragraphs:

Moisture-Density Tests

The moisture content and dry density information provides an indirect measure of soil consistency for each stratum, and can also provide a correlation between soils on this site. The dry unit weight and field moisture content were determined for selected undisturbed samples, in accordance with ASTM D 2216, and ASTM D 2937 and the results are shown on our boring logs, Enclosures B-1 through B-8, for convenient correlation with the soil profile.

Laboratory Compaction

Selected soil samples were tested in the laboratory to determine compaction characteristics using the ASTM D 1557 compaction test method. The results are presented in the following table:

LABORATORY COMPACTION				
Boring Number	Sample Depth (feet)	Soil Description (U.S.C.S.)	Maximum Dry Density (pcf)	Optimum Moisture Content (percent)
B-1	0-3	(SM) Silty Sand	136.5	8.0
B-3	0-3	(SM) Silty Sand	131.0	8.0

Direct Shear Tests

Shear tests are performed with a direct shear machine in general accordance with ASTM D 3080 at a constant rate-of-strain (usually 0.04 inches/minute). The machine is designed to test a sample partially extruded from a sample ring in single shear. Samples are tested at varying normal loads in order to evaluate the shear strength

parameters, angle of internal friction and cohesion. Samples are tested in a relatively undisturbed (u) or remolded (r) condition (90 percent per ASTM D 1557) and soaked, according to conditions expected in the field.

The results of the shear tests are presented in the following table:

DIRECT SHEAR TESTS				
Boring Number	Sample Depth (feet)	Soil Description (U.S.C.S.)	Angle of Internal Friction (degrees)	Apparent Cohesion (psf)
B-1(r)	0-3	(SM) Silty Sand	29	400
B-7 (u)	3 - 4	Granitic Bedrock	40	200

Expansion Index Test

Remolded samples are tested to determine their expansion potential in accordance with the Expansion Index (EI) test. The test is performed in accordance with the Uniform Building Code Standard 18-2. The test results are presented on the following table:

EXPANSION INDEX TESTS				
Boring Number	Sample Depth (feet)	Material Description (U.S.C.S)	Expansion Index (EI)	Expansion Potential
B-3	0-3	(SM) Silty Sand	1	Very Low
Expansion Index:	0-20 Very Low	21-50 Low	51-90 Medium	91-130 High

Sieve Analysis

A quantitative determination of the grain size distribution was performed for selected samples in accordance with ASTM D 422 laboratory test procedure. The determination is performed by passing the soil through a series of sieves, and recording the weights of retained particles on each screen. The results of the sieve analysis are presented graphically on Enclosure C-1.

Sand Equivalent

The sand equivalent of selected soils were evaluated using the California Sand Equivalent Test Method, Caltrans Number 217. The results of the sand equivalent tests are presented with the grain size distribution analysis on Enclosure C-1.

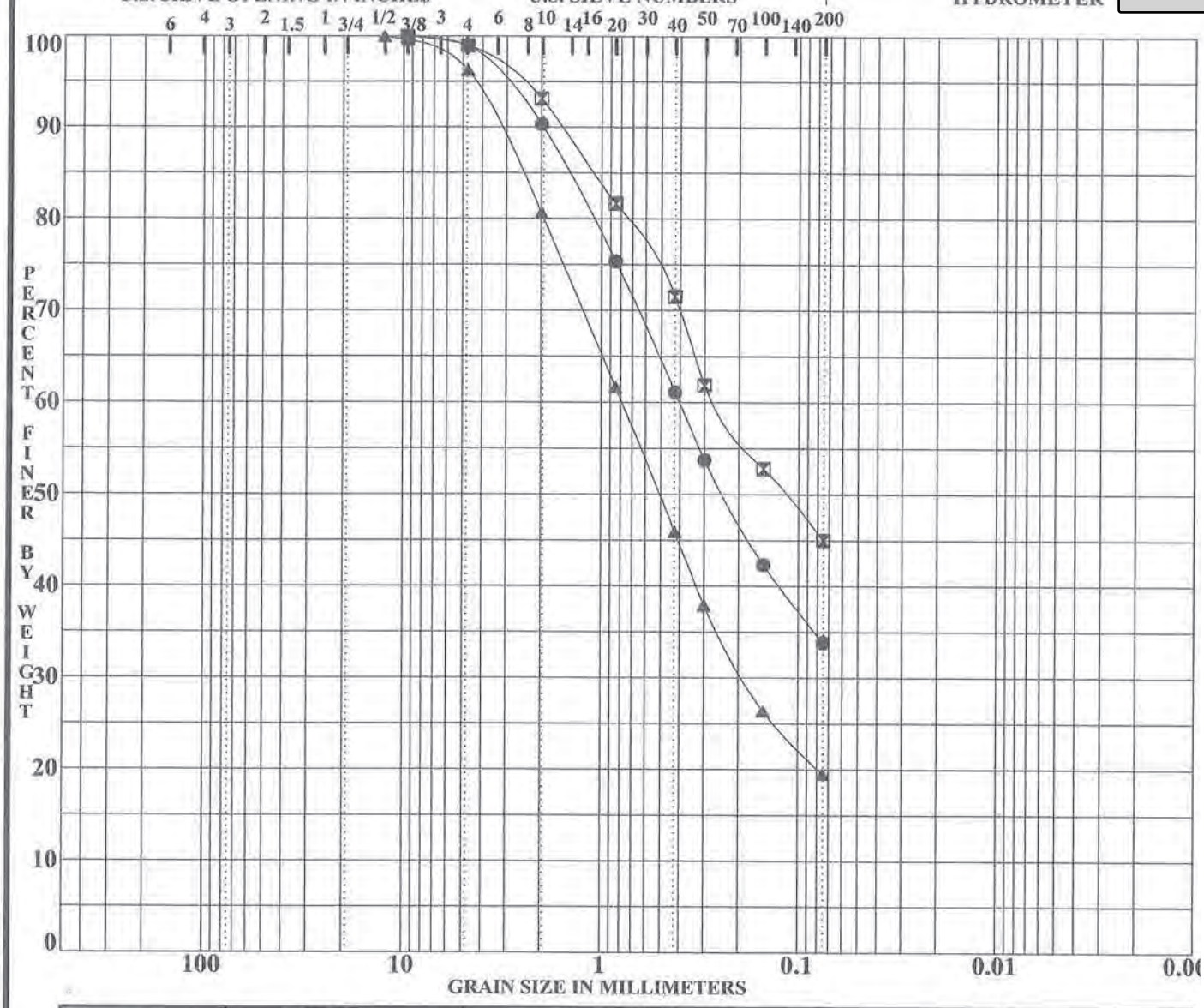
R-Value Test

Soil samples were obtained at probable pavement subgrade level and sieve analysis and sand equivalent tests were conducted. A selected soil sample was tested to determine its R-value using the California R-Value Test Method, Caltrans Number 301. The results of the sieve analysis, sand equivalent, and R-value tests are presented on Enclosure C-1.

Soluble Sulfate Content Tests

The soluble sulfate content of selected subgrade soils was evaluated. The concentration of soluble sulfates in the soils was determined by measuring the optical density of a barium sulfate precipitate. The precipitate results from a reaction of barium chloride with water extractions from the soil samples. The measured optical density is correlated with readings on precipitates of known sulfate concentrations. The test results are presented on the following table:

SOLUBLE SULFATE CONTENT TESTS			
Boring Number	**Sample Depth (feet)**	**Soil Description (U.S.C.S)**	**Sulfate Content (percent by weight)**
B-1	0-3	(SM) Silty Sand	< 0.005
B-3	0-3	(SM) Silty Sand	< 0.005
B-4	0-3	(SM) Silty Sand	< 0.005



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification		Soil Classification	SE	RV	PL	PI	Cc	Cu
B-1	@ 0-3 ft	(SM) Silty Sand	16	--				
B-3	@ 0-3 ft	(SM) Silty Sand	14	14				
B-4	@ 0-3 ft	(SM) Silty Sand	21	--				

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
B-1	@ 0-3 ft	9.50	0.40			1.0	65.2	33.9	
B-3	@ 0-3 ft	9.50	0.26			1.0	54.0	45.0	
B-4	@ 0-3 ft	12.50	0.79	0.186		3.7	76.8	19.5	

PROJECT *Proposed Apartment Complex*

PROJECT NO. *33289.1*

DATE *2/17/17*

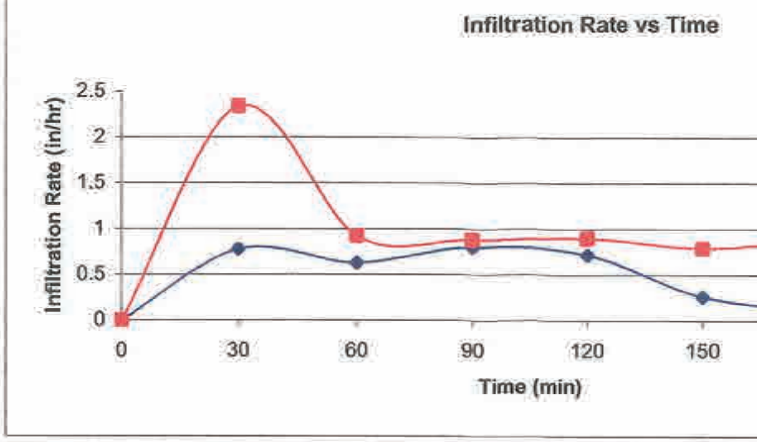
GRADATION CURVES
LOR Geotechnical Group, Inc.

ENCLOSURE C-1

APPENDIX D

Infiltration Test Results

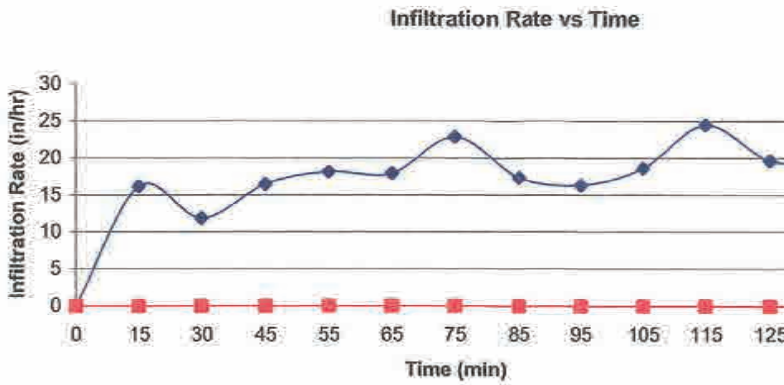
anch Apartments	**Test Date:**	February 9, 2017
9.1	**Test Hole No.:**	DRI-1
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9, 2017
Vater	**pH:**	7.8
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	3.5 in.
um Seal		
t.		



TEST PERIOD

NNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME ERVAL inutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	9:30 10:00	30	30	1.58	14.32	0.190	1.719	11.6	35.0	0.8	2.3
30	60	10:00 10:30	30	60	1.28	5.65	0.154	0.678	9.4	13.8	0.6	0.9
30	90	10:30 11:00	30	90	1.63	5.40	0.196	0.648	12.0	13.2	0.8	0.9
30	120	11:00 11:30	30	120	1.46	5.51	0.175	0.661	10.7	13.5	0.7	0.9
30	150	11:38 12:08	30	150	0.54	4.85	0.065	0.582	4.0	11.8	0.3	0.8
60	210	12:08 13:08	60	210	0.59	10.65	0.071	1.279	2.2	13.0	0.1	0.9
60	270	13:08 14:08	60	270	1.01	9.09	0.121	1.091	3.7	11.1	0.2	0.7

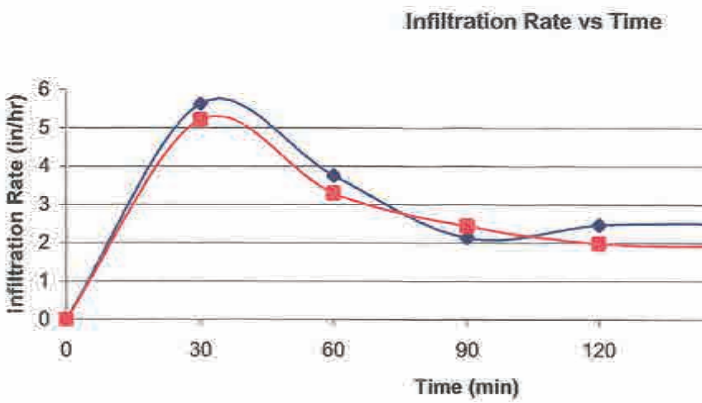
nch Apartment	**Test Date:**	February 9,2017
1	**Test Hole No.:**	DRI-2
M) Well Graded Sand with Silt	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9,2017
ater	**pH:**	7.8
0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	4 in.
m Seal		



TEST PERIOD

NER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)		LIQUID TEMP (°F)
ME RVAL utes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space	
5	15	*	*	*	16.48	*	1.978	*	241.9	*	16.2	*	68
5	30	*	*	*	12.08	*	1.450	*	177.3	*	11.9	*	69
5	45	*	*	*	16.78	*	2.014	*	246.3	*	16.5	*	69
0	55	*	*	*	12.30	*	1.477	*	270.9	*	18.1	*	69
0	65	*	*	*	12.15	*	1.459	*	267.6	*	17.9	*	70
0	75	*	*	*	15.49	*	1.860	*	341.1	*	22.9	*	70
0	85	*	*	*	11.77	*	1.413	*	259.2	*	17.4	*	70
0	95	*	*	*	11.10	*	1.333	*	244.4	*	16.4	*	70
0	105	*	*	*	12.62	*	1.515	*	277.9	*	18.6	*	71
0	115	*	*	*	16.61	*	1.994	*	365.8	*	24.5	*	71
0	125	*	*	*	13.35	*	1.603	*	294.0	*	19.7	*	
0		*											

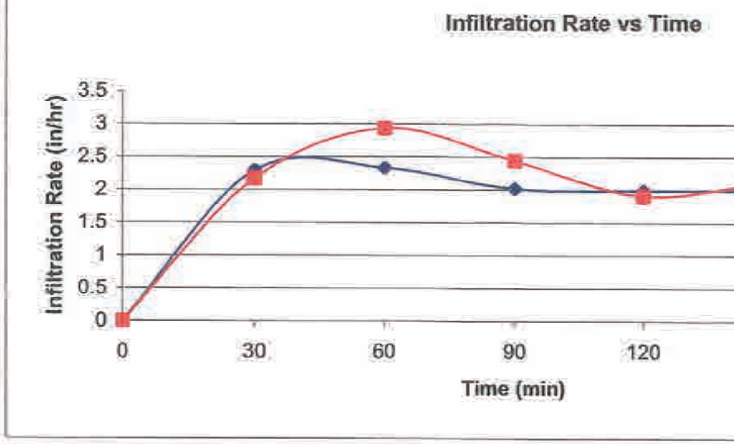
Ranch Apartments	**Test Date:**	February 9, 2017	
9.1	**Test Hole No.:**	DRI-3	
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular	
	Date Excavated:	February 9, 2017	
Water	**pH:**	7.8	
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.	
	Ring Penetration:	4 in.	
um Seal			
ft.			



TEST PERIOD

INNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	10:18 10:48	30	30	11.44	31.84	1.373	3.822	84.0	77.7	5.6	5.2
30	60	10:48 11:18	30	60	7.64	20.12	0.917	2.415	56.1	49.1	3.8	3.3
30	90	11:20 11:50	30	90	4.34	14.94	0.521	1.794	31.9	36.5	2.1	2.4
30	120	11:50 12:20	30	120	5.02	12.19	0.603	1.463	36.8	29.8	2.5	2.0
30	150	12:27 12:57	30	150	5.09	11.95	0.611	1.435	37.4	29.2	2.5	2.0
30	180	12:57 13:27	30	180	4.97	14.54	0.597	1.745	36.5	35.5	2.4	2.4

Ranch Apartments	**Test Date:**	February 9, 2017
9.1	**Test Hole No.:**	DRI-4
Silty Sand	**Test Hole Diameter:**	12 in. inner, 24 in. annular
	Date Excavated:	February 9, 2017
Water	**pH:**	7.8
= 0.785 ft^2 , Annular 2.36 ft^2	**Depth of Water in Rings:**	2 in.
	Ring Penetration:	5 in.
ium Seal		
ft.		



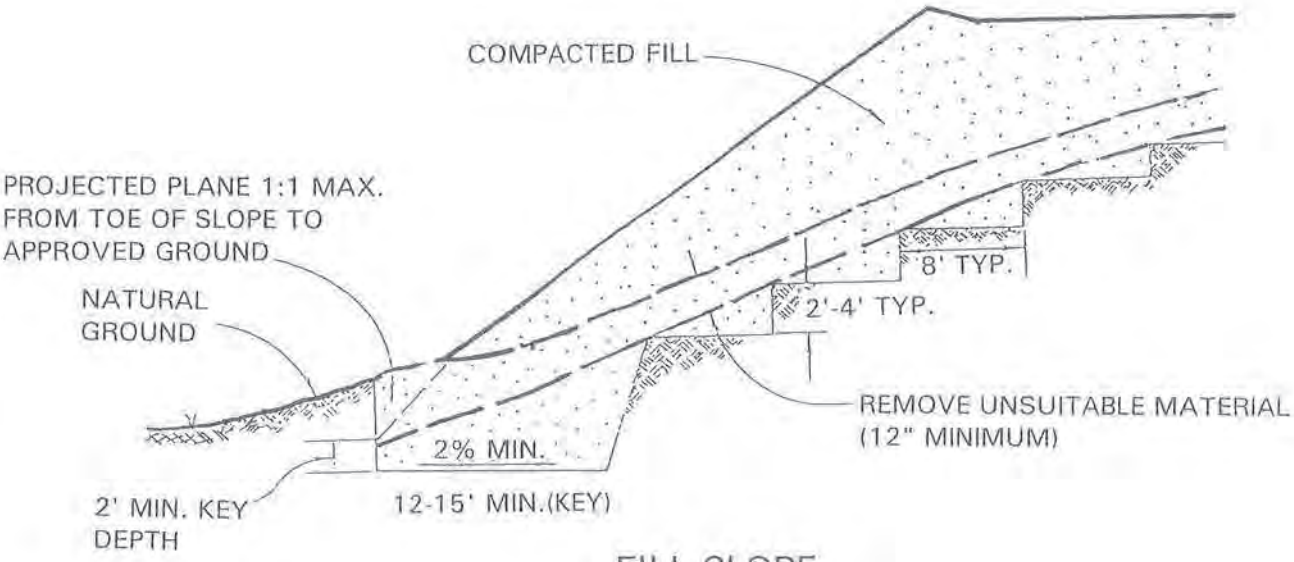
TEST PERIOD

INNER		ANNULAR SPACE			WATER USED (lbs.)		WATER USED (gal)		INFILTRATION RATE (gal/sf.day)		INFILTRATION RATE (in/hr)	
TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	TIME	TIME INTERVAL (minutes)	TOTAL ELASPED TIME (minutes)	inner	annular space	inner	annular space	inner	annular space	innner	annular space
30	30	10:15 10:45	30	30	4.66	13.28	0.559	1.594	34.2	32.4	2.3	2.2
30	60	10:45 11:15	30	60	4.74	17.96	0.569	2.156	34.8	43.9	2.3	2.9
30	90	11:15 11:45	30	90	4.11	14.91	0.493	1.790	30.2	36.4	2.0	2.4
30	120	11:50 12:20	30	120	4.06	11.65	0.487	1.399	29.8	28.4	2.0	1.9
30	150	12:20 12:50	30	150	4.05	12.95	0.486	1.555	29.7	31.6	2.0	2.1
30	180	12:50 13:20	30	180	3.92	12.33	0.471	1.480	28.8	30.1	1.9	2.0

APPENDIX E

Geotechnical Sketch

TYPICAL KEYING AND BENCHING DETAIL



FILL SLOPE

NOTES:
1) DIMENSIONS SHOWN SUBJECT TO FIELD CHANGE BASED ON ENGINEER'S JUDGEMENT
2) BENCHING REQUIRED WHEN FILLING OVER NATURAL GROUND STEEPER THAN 5H:1V

GEOTECHNICAL SKETCH

PROJECT:	PROPOSED APARTMENT COMPLEX, MORENO VALLEY, CA	PROJECT NO.:	33289.1
CLIENT:	ROC III CA BELAGO, LLC	ENCLOSURE:	E-1
LOR Geotechnical Group, Inc.		DATE:	FEBUARY 2017
		SCALE:	NA

APPENDIX F

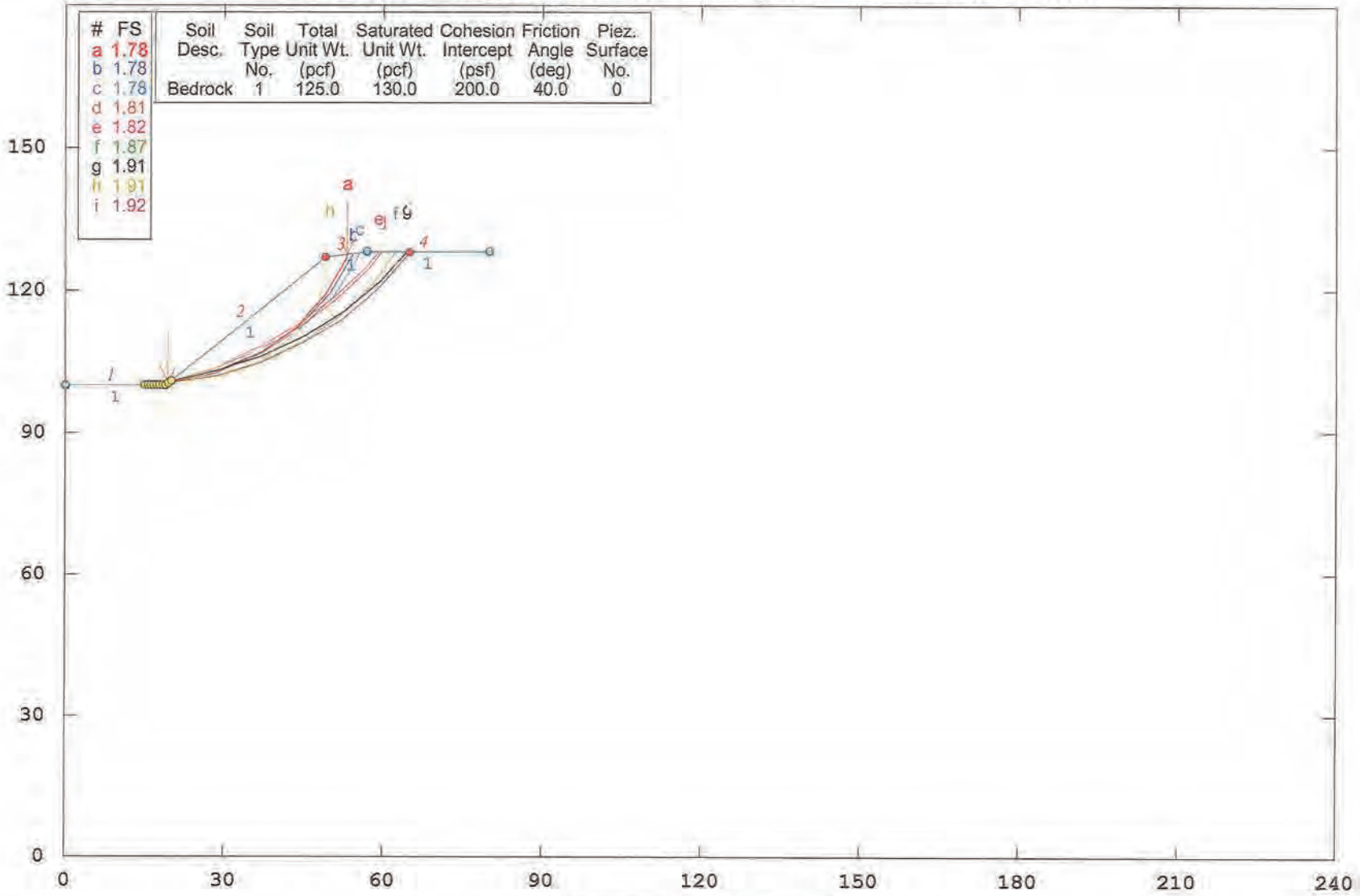
Slope Stability Calculations

27' Tall, 1.5:1 Cut Slope static analysis

C:\GABY\SLOPE\DATA\32289.1\AA2.PL2 Run By: Username 2/17/2017 1:30PM

#	FS
a	1.78
b	1.78
c	1.78
d	1.81
e	1.82
f	1.87
g	1.91
h	1.91
i	1.92

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Bedrock	1	125.0	130.0	200.0	40.0	0



PCSTABL5M/si FSmin=1.78

Safety Factors Are Calculated By The Modified Bishop Method

STED

```
                    ** PCSTABL5M **
                          by
                    Purdue University
                --Slope Stability Analysis--
              Simplified Janbu, Simplified Bishop
                or Spencer's Method of Slices
 Run Date:                    2/17/2017
 Time of Run:                 1:30PM
 Run By:                      Username
 Input Data Filename:         C:aa2.in
 Output Filename:             C:aa2.OUT
 Unit:                        ENGLISH
 Plotted Output Filename:     C:aa2.PLT
 PROBLEM DESCRIPTION   27' Tall, 1.5:1 Cut Slope
                       static analysis
 BOUNDARY COORDINATES
      Note: User origin value specified.
      Add 0.00 to X-values and 0.00 to Y-values listed.

     4 Top   Boundaries
     4 Total Boundaries
 Boundary     X-Left     Y-Left     X-Right    Y-Right    Soil Type
    No.        (ft)       (ft)       (ft)       (ft)     Below Bnd
     1          .00      100.00      19.00      100.00        1
     2        19.00      100.00      49.00      127.00        1
     3        49.00      127.00      57.00      128.00        1
     4        57.00      128.00      80.00      128.00        1
ISOTROPIC SOIL PARAMETERS
  1 Type(s) of Soil
 Soil  Total  Saturated  Cohesion Friction   Pore    Pressure   Piez.
 Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
  No.   (pcf)     (pcf)     (psf)     (deg)   Param.     (psf)    No.
   1   125.0     130.0     200.0     40.0      .00        .0      0
 A Critical Failure Surface Searching Method, Using A Random
 Technique For Generating Circular Surfaces, Has Been Specified.
 100 Trial Surfaces Have Been Generated.
  10 Surfaces Initiate From Each Of 10 Points Equally Spaced
 Along The Ground Surface Between  X =  15.00 ft.
                                   and  X =  20.00 ft.
 Each Surface Terminates Between   X =  49.00 ft.
                                   and  X =  65.00 ft.
 Unless Further Limitations Were Imposed, The Minimum Elevation
 At Which A Surface Extends Is  Y =   .00 ft.
  9.00 ft. Line Segments Define Each Trial Failure Surface.
 Following Are Displayed The Ten Most Critical Of The Trial
 Failure Surfaces Examined.  They Are Ordered - Most Critical
 First.
 * * Safety Factors Are Calculated By The Modified Bishop Method * *
 Failure Surface Specified By  7 Coordinate Points
   Point      X-Surf      Y-Surf
    No.        (ft)        (ft)
     1        19.44       100.40
     2        28.19       102.51
     3        36.29       106.45
     4        43.35       112.03
     5        49.05       118.99
     6        53.13       127.01
     7        53.26       127.53
 Circle Center At X =   14.1 ; Y =  141.8  and Radius,   41.7
       ***     1.776   ***
      Individual data on the     7  slices
                 Water  Water     Tie     Tie     Earthquake
                 Force  Force    Force   Force       Force   Surcharge
Width   Weight    Top    Bot     Norm     Tan     Hor     Ver     Load
```

(ft)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)	(lbs)
8.7	3152.5	.0	.0	.0	.0	.0	.0	.0
8.1	7526.0	.0	.0	.0	.0	.0	.0	.0
7.1	8386.0	.0	.0	.0	.0	.0	.0	.0
5.7	6342.7	.0	.0	.0	.0	.0	.0	.0
.1	50.3	.0	.0	.0	.0	.0	.0	.0
4.1	2169.1	.0	.0	.0	.0	.0	.0	.0
.1	4.2	.0	.0	.0	.0	.0	.0	.0

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.74	103.04
3	36.85	106.94
4	43.98	112.43
5	49.82	119.28
6	54.12	127.19
7	54.26	127.66

Circle Center At X = 14.1 ; Y = 143.8 and Radius, 43.3
*** 1.781 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.76	102.95
3	36.95	106.70
4	44.22	112.00
5	50.30	118.64
6	54.93	126.35
7	55.45	127.81

Circle Center At X = 14.2 ; Y = 145.6 and Radius, 45.1
*** 1.781 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.54	103.74
3	36.67	107.61
4	44.25	112.45
5	51.18	118.20
6	57.35	124.75
7	59.72	128.00

Circle Center At X = 1.4 ; Y = 171.2 and Radius, 72.8
*** 1.814 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.90
2	28.44	104.01
3	36.48	108.07
4	44.01	113.00
5	50.93	118.76
6	57.15	125.26
7	59.23	128.00

Circle Center At X = -3.2 ; Y = 176.8 and Radius, 79.3
*** 1.818 ***

Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	19.44	100.40
2	28.31	101.94
3	36.81	104.90
4	44.72	109.20
5	51.83	114.72

```
    6          57.95       121.32
    7          62.37       128.00
Circle Center At X =   14.4 ; Y =  155.5  and Radius,   55.3
     ***     1.873   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          20.00       100.90
    2          28.75       103.01
    3          37.17       106.20
    4          45.12       110.41
    5          52.48       115.59
    6          59.14       121.65
    7          64.56       128.00
Circle Center At X =    7.6 ; Y =  171.6  and Radius,   71.8
     ***     1.911   ***
Failure Surface Specified By  6 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          19.44       100.40
    2          28.39       101.37
    3          36.62       105.02
    4          43.34       111.00
    5          47.93       118.75
    6          49.84       127.10
Circle Center At X =   20.8 ; Y =  129.5  and Radius,   29.1
     ***     1.915   ***
Failure Surface Specified By  8 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          19.44       100.40
    2          28.30       101.98
    3          36.84       104.83
    4          44.88       108.88
    5          52.25       114.04
    6          58.80       120.22
    7          64.39       127.27
    8          64.81       128.00
Circle Center At X =   13.1 ; Y =  162.0  and Radius,   61.9
     ***     1.921   ***
Failure Surface Specified By  7 Coordinate Points
  Point       X-Surf      Y-Surf
   No.         (ft)        (ft)
    1          20.00       100.90
    2          28.49       103.90
    3          36.69       107.59
    4          44.57       111.95
    5          52.06       116.94
    6          59.11       122.53
    7          64.94       128.00
Circle Center At X =  -12.1 ; Y =  205.1  and Radius,  109.0
     ***     1.933   ***
```

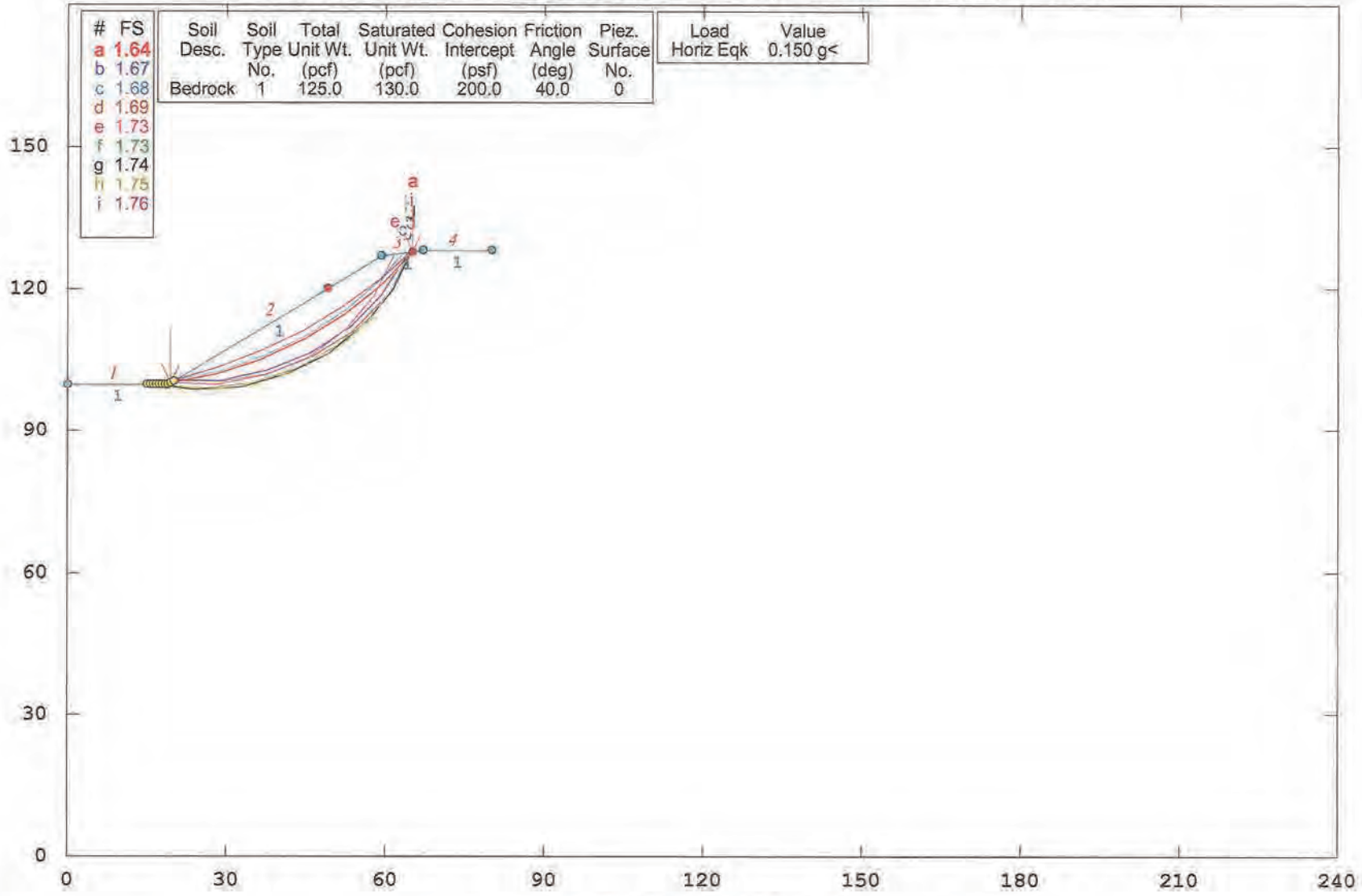
27' Tall, 1.5:1 Cut Slope psuedostatic analysis

C:\GABY\SLOPE\DATA\32289.1\AA2PS.PL2 Run By: Username 2/17/2017 1:24PM

#	FS
a	1.64
b	1.67
c	1.68
d	1.69
e	1.73
f	1.73
g	1.74
h	1.75
i	1.76

Soil Desc.	Soil Type No.	Total Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Piez. Surface No.
Bedrock	1	125.0	130.0	200.0	40.0	0

Load	Value
Horiz Eqk	0.150 g<



PCSTABL5M/si FSmin=1.64

Safety Factors Are Calculated By The Modified Bishop Method

STED

```
                    ** PCSTABL5M **
                          by
                    Purdue University
               --Slope Stability Analysis--
            Simplified Janbu, Simplified Bishop
               or Spencer`s Method of Slices
Run Date:                   2/17/2017
Time of Run:                1:24PM
Run By:                     Username
Input Data Filename:        C:aa2ps.in
Output Filename:            C:aa2ps.OUT
Unit:                       ENGLISH
Plotted Output Filename:    C:aa2ps.PLT
PROBLEM DESCRIPTION    27' Tall, 1.5:1 Cut Slope
                       psuedostatic analysis
BOUNDARY COORDINATES
     Note: User origin value specified.
     Add 0.00 to X-values and 0.00 to Y-values listed.

    4 Top   Boundaries
    4 Total Boundaries
Boundary     X-Left      Y-Left     X-Right     Y-Right     Soil Type
   No.         (ft)        (ft)       (ft)        (ft)     Below Bnd
    1           .00      100.00      19.00      100.00         1
    2         19.00      100.00      59.00      127.00         1
    3         59.00      127.00      67.00      128.00         1
    4         67.00      128.00      80.00      128.00         1
ISOTROPIC SOIL PARAMETERS
 1 Type(s) of Soil
Soil  Total  Saturated  Cohesion Friction   Pore    Pressure   Piez.
Type Unit Wt. Unit Wt. Intercept   Angle  Pressure Constant Surface
 No.   (pcf)     (pcf)     (psf)     (deg)  Param.     (psf)    No.
  1   125.0     130.0     200.0     40.0     .00        .0      0
A Horizontal Earthquake Loading Coefficient
Of .150 Has Been Assigned
A Vertical Earthquake Loading Coefficient
Of .000 Has Been Assigned
Cavitation Pressure =      .0 (psf)
A Critical Failure Surface Searching Method, Using A Random
Technique For Generating Circular Surfaces, Has Been Specified.
100 Trial Surfaces Have Been Generated.
 10 Surfaces Initiate From Each Of 10 Points Equally Spaced
Along The Ground Surface Between  X =  15.00 ft.
                                 and  X =  20.00 ft.
Each Surface Terminates Between   X =  49.00 ft.
                                 and   X =  65.00 ft.
Unless Further Limitations Were Imposed, The Minimum Elevation
At Which A Surface Extends Is  Y =    .00 ft.
 9.00 ft. Line Segments Define Each Trial Failure Surface.
Following Are Displayed The Ten Most Critical Of The Trial
Failure Surfaces Examined.  They Are Ordered - Most Critical
First.
* * Safety Factors Are Calculated By The Modified Bishop Method * *
Failure Surface Specified By  8 Coordinate Points
  Point      X-Surf      Y-Surf
   No.         (ft)        (ft)
    1         19.44      100.30
    2         28.23      102.26
    3         36.69      105.32
    4         44.70      109.44
    5         52.11      114.54
    6         58.81      120.55
    7         64.70      127.36
    8         64.95      127.74
```

Circle Center At X = 8.6 ; Y = 169.8 and Radius, 70.3
*** 1.638 ***
Individual data on the 8 slices

Width (ft)	Weight (lbs)	Water Force Top (lbs)	Water Force Bot (lbs)	Tie Force Norm (lbs)	Tie Force Tan (lbs)	Earthquake Force Hor (lbs)	Surcharge Ver (lbs)	Surcharge Load (lbs)
8.8	2179.4	.0	.0	.0	.0	326.9	.0	.0
8.5	5601.1	.0	.0	.0	.0	840.2	.0	.0
8.0	7266.3	.0	.0	.0	.0	1089.9	.0	.0
7.4	7282.1	.0	.0	.0	.0	1092.3	.0	.0
6.7	5923.3	.0	.0	.0	.0	888.5	.0	.0
.2	146.5	.0	.0	.0	.0	22.0	.0	.0
5.7	2348.5	.0	.0	.0	.0	352.3	.0	.0
.3	5.7	.0	.0	.0	.0	.9	.0	.0

Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	29.00	100.93
3	37.75	103.01
4	45.91	106.81
5	53.13	112.18
6	59.12	118.91
7	63.62	126.70
8	63.92	127.61

Circle Center At X = 23.3 ; Y = 144.6 and Radius, 44.0
*** 1.668 ***
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	28.73	102.87
3	37.10	106.16
4	44.99	110.51
5	52.24	115.83
6	58.75	122.05
7	63.18	127.52

Circle Center At X = 7.4 ; Y = 169.3 and Radius, 69.8
*** 1.677 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	29.00	100.51
3	37.83	102.25
4	46.10	105.81
5	53.43	111.02
6	59.50	117.67
7	64.04	125.44
8	64.79	127.72

Circle Center At X = 25.3 ; Y = 142.4 and Radius, 42.1
*** 1.694 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	19.44	100.30
2	28.44	100.03
3	37.25	101.87
4	45.38	105.74
5	52.37	111.41
6	57.83	118.56
7	61.46	126.80
8	61.55	127.32

Circle Center At X = 25.1 ; Y = 137.8 and Radius, 37.9
*** 1.725 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	16.67	100.00
2	25.63	99.15
3	34.56	100.26
4	43.03	103.29
5	50.65	108.09
6	57.04	114.43
7	61.90	122.00
8	63.96	127.62

Circle Center At X = 25.1 ; Y = 139.9 and Radius, 40.8
*** 1.727 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	15.00	100.00
2	23.92	98.79
3	32.89	99.51
4	41.50	102.14
5	49.34	106.55
6	56.06	112.54
7	61.34	119.83
8	64.79	127.72

Circle Center At X = 25.1 ; Y = 140.5 and Radius, 41.7
*** 1.744 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	16.67	100.00
2	25.60	98.87
3	34.55	99.78
4	43.07	102.67
5	50.73	107.40
6	57.13	113.73
7	61.94	121.33
8	64.16	127.65

Circle Center At X = 26.1 ; Y = 138.4 and Radius, 39.5
*** 1.755 ***
Failure Surface Specified By 7 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	20.00	100.68
2	28.52	103.58
3	36.75	107.22
4	44.64	111.56
5	52.11	116.57
6	59.13	122.21
7	64.90	127.74

Circle Center At X = -9.1 ; Y = 200.0 and Radius, 103.5
*** 1.757 ***
Failure Surface Specified By 8 Coordinate Points

Point No.	X-Surf (ft)	Y-Surf (ft)
1	15.56	100.00
2	24.46	98.67
3	33.43	99.40
4	42.00	102.15
5	49.72	106.78
6	56.19	113.04
7	61.06	120.60
8	63.56	127.57

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

Not Applicable

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Not Applicable

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)

pany Name: WAI | Date: 3/2/2017
gned by: Mariela Anguelov | Case No:
pany Project Number/Name: Reserve at Rancho Belago, MV

BMP Identification

NAME / ID: Infiltration Basin

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

Percentile, 24-hour Rainfall Depth, the Isohyetal Map in Handbook Appendix E — D_{85}= 0.68 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
DMA 1 BLDGS	*157,392*	*Roofs*	*1*	*0.89*	*140393.7*			
DMA 1 LNDSC	*282,498*	*Ornamental Landscaping*	*0.1*	*0.11*	*31204.2*			
DMA 1 DWYs PARKING	*367,248*	*Concrete or Asphalt*	*1*	*0.89*	*327585.2*			
	807138	***Total***			499183.1	0.68	*28287*	*31500*

s:

Infiltration Basin - Design Procedure (Rev. 03-2012)	BMP ID: Infiltr Basin	Legend: Required Entries / Calculated Cells

Company Name: WAI — Date: 7/19/2017
Designed by: Mariela Anguelov — County/City Case No.:

Design Volume

a) Tributary area (BMP subarea)	A_T =	18.53	acres
b) Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	28,287	ft^3

Maximum Depth

a) Infiltration rate	I =	2	in/hr
b) Factor of Safety (See Table 1, Appendix A: "Infiltration Testing" from this BMP Handbook)	FS =	3	
c) Calculate D_1 $D_1 = \frac{I\ (in/hr) \times 72\ hrs}{12\ (in/ft) \times FS}$	D_1 =	4.0	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)		50	ft
f) Enter depth to top of bedrock or impermeable layer (measured from **top** of basin)		10	ft
g) D_2 is the smaller of: Depth to groundwater - (10 ft + freeboard) and Depth to impermeable layer - (5 ft + freeboard)	D_2 =	4.0	ft
h) D_{MAX} is the smaller value of D_1 and D_2 but shall not exceed 5 feet	D_{MAX} =	4.0	ft

Basin Geometry

a) Basin side slopes (no steeper than 4:1)	z =	4	:1
b) Proposed basin depth (excluding freeboard)	d_B =	4	ft
c) Minimum bottom surface area of basin ($A_S = V_{BMP}/d_B$)	A_S =	7072	ft^2
d) Proposed Design Surface Area	A_D =	8060	ft^2

Forebay

a) Forebay volume (minimum 0.5% V_{BMP})	Volume =	141	ft^3
b) Forebay depth (height of berm/splashwall. 1 foot min.)	Depth =	1.5	ft
c) Forebay surface area (minimum)	Area =	94	ft^2
d) Full height notch-type weir	Width (W) =	4.0	in

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Not Applicable

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ A. **On-site storm drain inlets**	☒ **Locations of inlets.**	☒ **Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.**	☒ **Maintain and periodically repaint or replace inlet markings.** ☒ **Provide stormwater pollution prevention information to new site owners, lessees, or operators.** ☒ **See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** ☒ **Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."**
☐ B. **Interior floor drains and elevator shaft sump pumps**		☐ **State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**
☐ C. **Interior parking garages**		☐ **State that parking garage floor drains will be plumbed to the sanitary sewer.**	☐ **Inspect and maintain drains to prevent blockages and overflow.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ D1. **Need for future indoor & structural pest control**		☒ **Note building design features that discourage entry of pests.**	☒ **Provide Integrated Pest Management information to owners, lessees, and operators.**
☒ D2. **Landscape/ Outdoor Pesticide Use**	☐ **Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained.** ☒ **Show self-retaining landscape areas, if any.** ☒ **Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)**	**State that final landscape plans will accomplish all of the following.** ☐ **Preserve existing native trees, shrubs, and ground cover to the maximum extent possible.** ☒ **Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.** ☒ **Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions.** ☒ **Consider using pest-resistant plants, especially adjacent to hardscape.** **To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.**	☒ **Maintain landscaping using minimum or no pesticides.** ☒ **See applicable operational BMPs in "What you should know for…..Landscape and Gardening"** at http://rcflood.org/stormwater/**Error! Hyperlink reference not valid.** ☒ **Provide IPM information to new owners, lessees and operators.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ E. **Pools, spas, ponds, decorative fountains, and other water features.**	☒ **Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)**	**If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.**	☒ **See applicable operational BMPs in** "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
☐ F. **Food service**	☐ **For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment.** ☐ **On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.**	☐ **Describe the location and features of the designated cleaning area.** ☐ **Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.**	☐ **See the brochure, "**The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ **Provide this brochure to new site owners, lessees, and operators.**
☐ G. **Refuse areas**	☐ **Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas.** ☐ **If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area.** ☐ **Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.**	☐ **State how site refuse will be handled and provide supporting detail to what is shown on plans.** ☐ **State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.**	☐ **State how the following will be implemented:** **Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at** www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ H. **Industrial processes.**	❑ **Show process area.**	❑ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	❑ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ I. Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	❑ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area. ❑ Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. ❑ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for: ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank www.cchealth.org/groups/hazmat/	❑ See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ J. **Vehicle and Equipment Cleaning**	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑**Car dealerships and similar may rinse cars with water only.**

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ K. **Vehicle/Equipment Repair and Maintenance**	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ L. Fuel Dispensing Areas	❑ Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ❑ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.		❑ The property owner shall dry sweep the fueling area routinely. ❑ See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

[6] The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ M. Loading Docks	❑ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. ❑ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. ❑ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		❑ Move loaded and unloaded items indoors as soon as possible. ❑ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
❑ N. Fire Sprinkler Test Water		❑ Provide a means to drain fire sprinkler test water to the sanitary sewer.	❑ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
O. Miscellaneous Drain or Wash Water or Other Sources ❑ Boiler drain lines ❑ Condensate drain lines ❑ Rooftop equipment ❑ Drainage sumps ☒ Roofing, gutters, and trim. ❑ Other sources		❑ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ❑ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. ❑ Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. ❑ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. ☒ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. Include controls for other sources as specified by local reviewer.	

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 Potential Sources of Runoff Pollutants	2 Permanent Controls—Show on WQMP Drawings	3 Permanent Controls—List in WQMP Table and Narrative	4 Operational BMPs—Include in WQMP Table and Narrative
☒ P. **Plazas, sidewalks, and parking lots.**			☒ **Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.**

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

To be included in Final WQMP

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

To be included in Final WQMP

APPENDIX J

KUNZMAN ASSOCIATES, INC.

MORENO VALLEY GOLF COURSE PROJECT

NOISE IMPACT ANALYSIS

September 1, 2016

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment

KUNZMAN ASSOCIATES, INC.

MORENO VALLEY GOLF COURSE PROJECT

NOISE IMPACT ANALYSIS

September 1, 2016

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JN 6639a

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I. INTRODUCTION AND SETTING

A. Purpose and Objectives

The purpose of this report is to provide an assessment of the noise impacts resulting from development of the proposed Moreno Valley Golf Course project and to identify mitigation measures that may be necessary to reduce those impacts. The noise issues related to the proposed land use and development have been evaluated in the context of the California Environmental Quality Act.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to noise analysis, a list of acronyms and a glossary of terms have been provided in Appendix A and Appendix B of this report, respectively.

B. Project Location

The project is located east of Moreno Beach Drive between John F. Kennedy Drive and Championship Drive in the City of Moreno Valley. A vicinity map showing the project location is provided on Figure 1.

C. Project Description

The site is proposed to be developed with approximately 446 multi-family attached residential dwelling units, a clubhouse with a pool, and additional outdoor amenities. Figure 2 illustrates the project's site plan.

Figure 1
Project Location Map

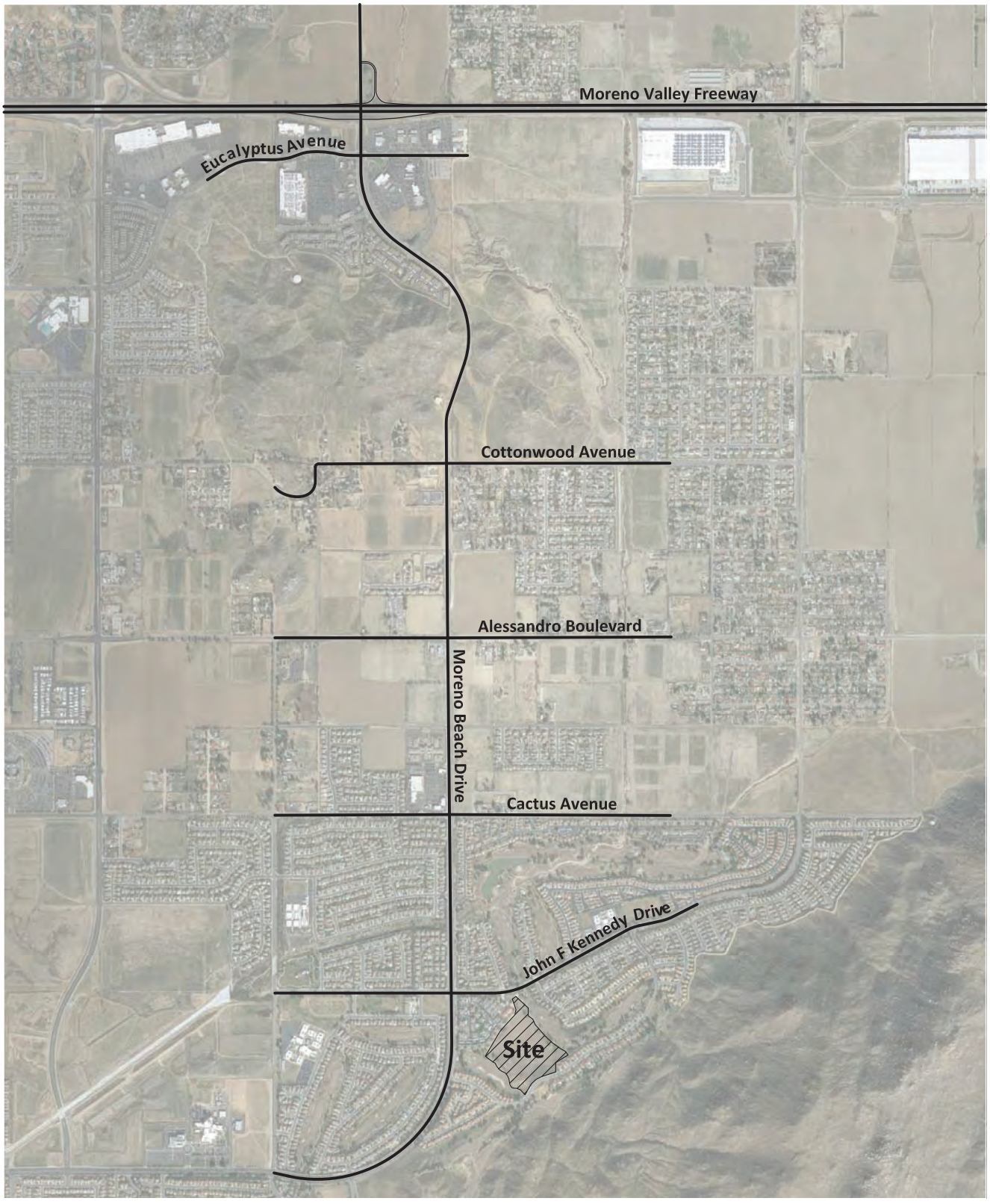

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Figure 2
Site Plan

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II. NOISE AND VIBRATION FUNDAMENTALS

A. 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_{Leq}, or the equivalent noise level for that period of time. For example, $L_{eq(3)}$ 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 (L_{dn}). 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. L_{dn} 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 Traffic Noise Analysis Protocol for New Highway and Reconstruction Projects (2009).

B. 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.

Construction operations generally include a wide range of activities that can generate groundborne vibration. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, or the differential settlement of pavement all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement conditions.

Typically, particle velocity or acceleration (measured in gravities) is used to describe vibration. Table 1 shows the peak particle velocities (PPV) of some common construction equipment and Table 2 shows typical human reactions to various levels of PPV as well as the effect of PPV on buildings.

Table 1

Construction Equipment Vibration Source Levels[1]

Equipment	Peak Partical Velocity in inches per second[2]		
	at 25 feet	at 50 feet	at 100 feet
Clam Shovel Drop (slurry wall)	**0.202**	0.071	0.025
Vibratory Roller	**0.210**	0.074	0.026
Hoe Ram	**0.089**	0.031	0.011
Large Bulldozer	**0.089**	0.031	0.011
Caisson Drilling	**0.089**	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Jackhammer	0.035	0.012	0.004
Small Bulldozer	0.003	0.001	0.0004

[1] Source: Federal Transit Administration: Transit Noise and Vibration Impact Assessment, 2006.

[2] Bold values are considered annoying to people.

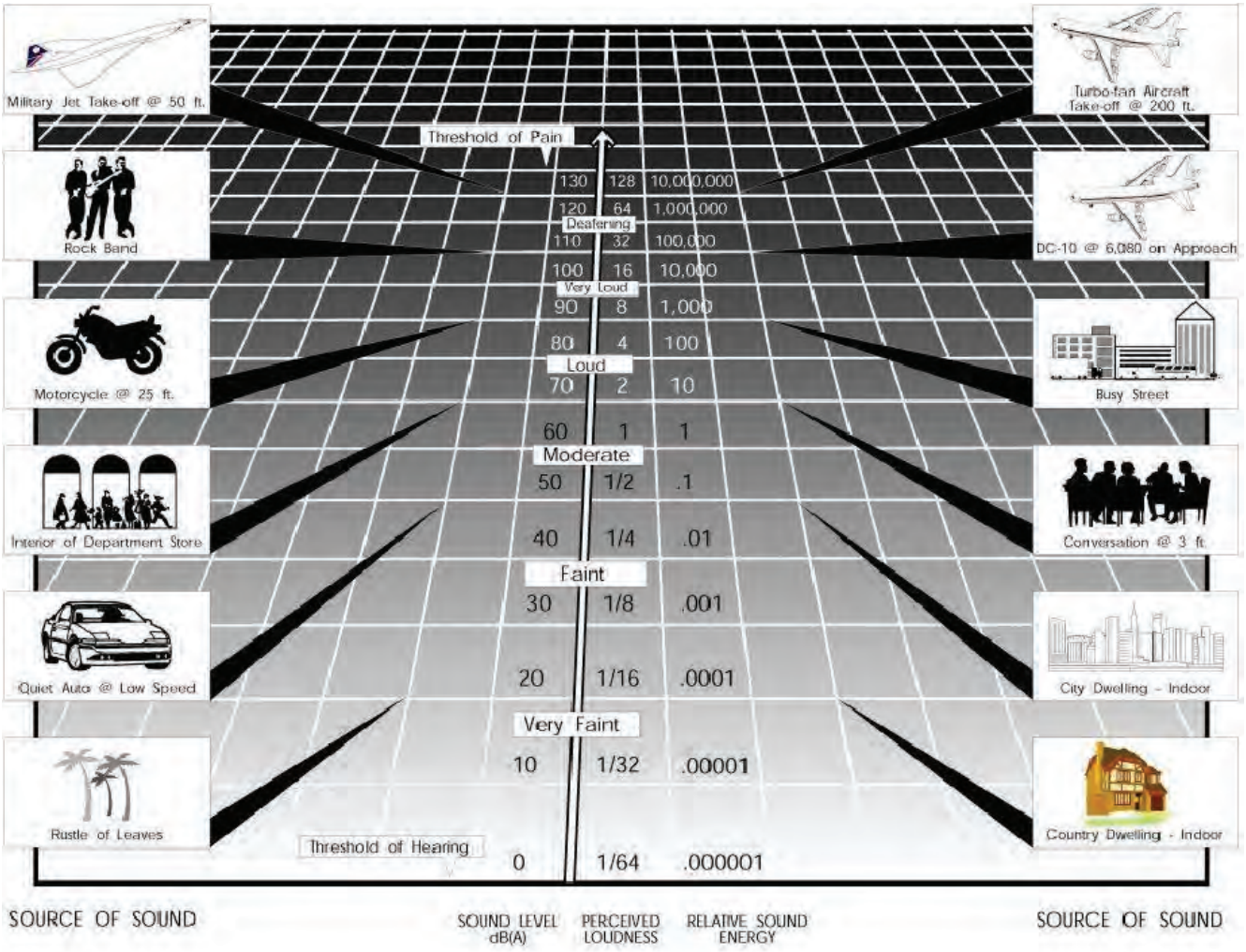
Table 2

Typical Human Reaction and Effect on Buildings Due to Groundborne Vibration[1]

Vibration Level Peak Particle Velocity (PPV)	Human Reaction	Effect on Buildings
0.006–0.019 in/sec	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08 in/sec	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10 in/sec	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20 in/sec	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6 in/sec	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

[1] Source: California Department of Transportation, 2002.

Figure 3
Common Noise Sources and Noise Levels



III. EXISTING NOISE ENVIRONMENT

A. Existing Land Uses and Sensitive Receptors

The project site is located east of Moreno Beach Drive between John F. Kennedy Drive and Championship Drive. Land uses to the north are multi-family attached and single-family detached residential dwelling units and land uses to the east, south, and west are all single-family detached residential dwelling units. Vacant land is also located to the south of the proposed project.

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. In addition to the proposed residential uses, sensitive receptors that may be affected by project generated noise include the multi-family and single-family residential dwelling units surrounding the project site.

B. Ambient Noise Measurements

An American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter was used to measure existing ambient noise levels at the project site. As shown on Figure 4, the noise measurement was taken near the center of the site. The ambient noise level was 47.6 dBA L_{eq}. Noise sources included a leaf blower operating near the clubhouse, bird song, and nearby roadway noise. Table 3 provides a summary of the short-term ambient noise data. Field worksheets and measurement output data are included in Appendix C.

Table 3

Short-Term Noise Measurement Summary (dBA)[1, 2]

Daytime								
Site Location	Time Started	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)
NM1	9:05 AM	47.6	67.0	40.4	54.2	49.6	47.4	43.4

[1] See Figure 4 for noise measurement locations. Each noise measurement was performed over a 10-minute duration.

[2] Noise measurements performed on August 11, 2016.

Figure 4
Noise Measurement Location Map

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IV. REGULATORY SETTING

A. Federal Regulations

1. 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 addition, the Levels of Environmental Noise identified five (5) dBA as an "adequate margin of safety" for a noise level increase relative to a baseline noise exposure level of 55 dBA Ldn (i.e., there would not be a noticeable increase in adverse community reaction with an increase of five dBA or less from this baseline level). The EPA did not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no risk to a community from any health or welfare effect of noise.

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.

B. State Regulations

1. State of California General Plan Guidelines 2003

Though not adopted by law, the State of California General Plan Guidelines 2003, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provide 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 identifies acceptable and

unacceptable community noise exposure limits for various land use categories. These tables are the primary tools that allow the City to ensure integrated planning for compatibility between land uses and outdoor noise.

2. State of California Building Code

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, California Building Code. These noise standards are applied to new construction in California for the purpose of interior noise compatibility from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 65 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

C. Local Regulations

1. City of Moreno Valley General Plan

The State of California requires each city to adopt a general plan outlining the effects of development, including the effect of noise. Noise is considered in the Environmental Safety section of the City of Moreno Valley General Plan. Applicable objectives and policies from the General Plan Safety Element are provided below.

Objective 6.3: Provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes.

Policies

6.3.1: The following uses shall require mitigation to reduce noise exposure where current or future exterior noise levels exceed 20 CNEL above the desired interior noise level:

a. Single and multiple family residential buildings shall achieve an interior noise level of 45 CNEL or less. Such buildings shall include sound insulating windows, walls, roofs and ventilation systems. Sound barriers shall also be installed (e.g., masonry walls or walls with berms) between single-family residences and major roadways.

6.3.2: Discourage residential uses where current or projected exterior noise due to aircraft over flights will exceed 65 CNEL.

6.3.3: Where the future noise environment is likely to exceed 70 CNEL due to overflights from the joint-use airport at March, new buildings containing uses that are not addressed under Policy 6.3.1 shall require insulation to achieve interior noise levels

recommended in the March Air Reserve Base Air Installation Compatible Use Zone Report.

6.3.4: Encourage residential development heavily impacted by aircraft over flight noise, to transition to uses that are more noise compatible. 6.3.5 Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.

6.3.5: Enforce the California Administrative Code, Title 24 noise insulation standards for new multi-family housing developments, motels and hotels.

Objective 6.4: Review noise issues during the planning process and require noise attenuation measures to minimize acoustic impacts to existing and future surrounding land uses.

Policies

6.4.1 Site, landscape and architectural design features shall be encouraged to mitigate noise impacts for new developments, with a preference for noise barriers that avoid freeway sound barrier walls.

Objective 6.5: Minimize noise impacts from significant noise generators such as, but not limited to, motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities.

Policies

6.5.2: Construction activities shall be operated in a manner that limits noise impacts on surrounding uses.

2. <u>City of Moreno Valley Municipal Ordinance</u>

8.14.040 Miscellaneous standards and regulations
Any construction within the city shall only be as follows: Monday through Friday (except for holidays which occur on weekdays), 6:00 AM to 8:00 PM; weekends and holidays (as observed by the city and described in Chapter 2.55 of this code), 7:00 AM to 8:00 PM, unless written approval is obtained from the city building official or city engineer. (Ord. 759 § 5.5, 2007; Ord. 484 § 3.2 (part), 1995).

8.21.050 Grading permit requirements.
Grading and equipment operations shall only be completed between the hours of 7:00 AM to 6:00 PM Monday through Friday, excluding holidays and from 8:00 AM to 4:00 PM on weekends and holidays. The city engineer may, however, permit grading or equipment operations before or after the allowable hours of operation if he or she determines that such operations are not detrimental to the health, safety, or welfare of residents or the general public. Permitted hours of operations may be shortened by the city engineer's finding of a previously unforeseen effect on the health, safety, or welfare of the surrounding community.

9.03.040 Residential site development standards.

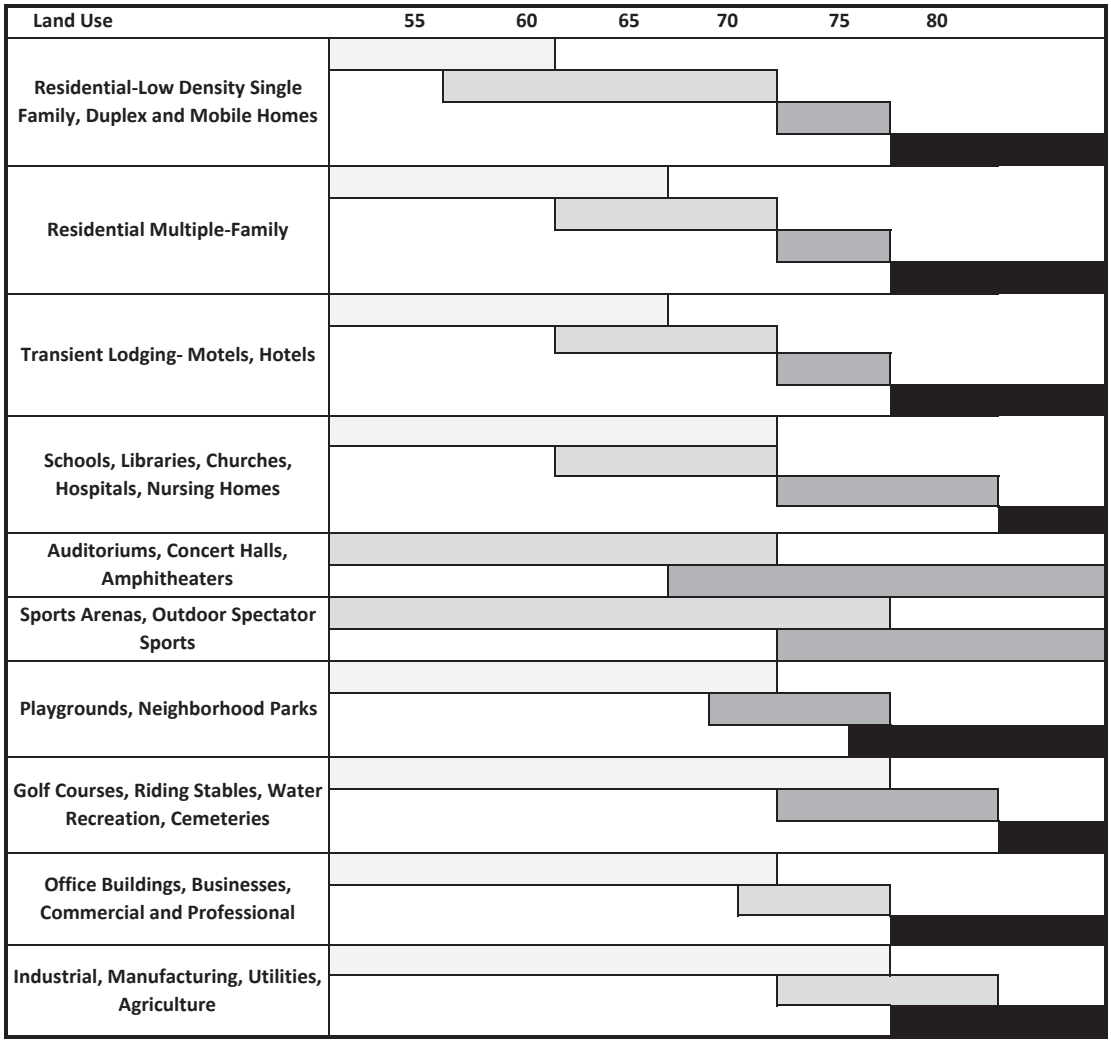
In all residential districts, air conditioners, heating, cooling and ventilating equipment and all other mechanical, lighting or electrical devices shall be operated so that noise levels do not exceed sixty (60) dBA (Ldn) at the property line. Additionally, such equipment, including roof-mounted installation, shall be screened from surrounding properties and streets and shall not be located in the required front yard or street side yard. All equipment shall be installed and operated in accordance with other applicable city ordinances.

11.80.030 Prohibited acts.

Construction and Demolition. No person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of 8:00 PM and 7:00 AM the following day such that the sound there from creates a noise disturbance, except for emergency work by public service utilities or for other work approved by the city manager or designee. This section shall not apply to the use of power tools as provided in subsection (D)(9) of this section.

Table 4

Land Use Compatibility for Community Noise Exposure[1] (dBA CNEL or Ldn)



Normally Acceptable: Specified land uses is satisfactory based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation or 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 and development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with needed noise insulation features included in the design. Outdoor areas must be shielded.	**Clearly Unacceptable:** New construction or development should generally not be undertaken. Construction costs to make the indoor environment acceptable would be prohibitive and the outdoor environment would not be usable.

[1] Source: California Office of Noise Control and the County of Riverside General Plan Noise Element, 2003.

V. ANALYTICAL METHODOLOGY AND MODEL PARAMETERS

A. Noise Modeling and Input

1. Road Construction Model

A worst-case construction noise scenario was modeled using a version of the Federal Highway Administration's Roadway Construction Noise Model (RCNM). RCNM utilizes standard noise emission levels for many different types of equipment and includes utilization percentage, impact, and shielding parameters. Modeling input parameters and output are provided in Appendix D.

2. Federal Highway Administration (FHWA) Traffic Noise Prediction Model

In order to determine if buildout traffic noise levels would affect the proposed project traffic noise was modeled utilizing the FHWA Traffic Noise Prediction Model – FHWA-RD-77-108, as modified for CNEL and the "Calveno" energy curves. This model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). Adjustments are then made to the REMEL to account for total average daily trips (ADT), roadway classification, width, speed, and truck mix, roadway grade and site conditions (hard or soft surface). Areas adjacent to all modeled roadways were assumed to be "soft site". Hard site, such as pavement, is highly reflective and does not attenuate noise as quickly as grass or vegetation. Possible reduction in noise levels due to intervening topography and vegetation were not accounted for in the analysis.

Buildout traffic volumes were obtained from the County of Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and County of Riverside General Plan, Chapter 4, Figure C-3 "Link Volume Capacities/Level of Service for Riverside County Roadways" revised March 2001. Future buildout noise levels associated with these roadways were modeled using Average Daily Trip (ADT) Level of Service "C" design capacities (also known as future build-out daily traffic volumes). Vehicle speeds were based on posted speed limits. FHWA worksheets are included in Appendix E.

VI. IMPACT ANALYSIS

A. Noise Impacts

This impact discussion analyzes the potential for project operational noise to cause an exposure of person to or generation of noise levels in excess of established City of Moreno Valley noise standards related to transportation and stationary related noise impacts both to the proposed project and caused by the proposed project.

1. Construction Noise

Existing multi-family attached and single-family detached residential dwelling units located to the north, east, south, and west of the project site may be affected by short-term noise impacts associated with the transport of workers, the movement of construction materials to and from the project site, ground clearing, excavation, grading, and building activities. Construction noise is considered a short-term impact and would be considered significant if construction activities are undertaken outside the allowable times as described by the City's Municipal ordinances 8.14.040 and 8.14.050. This noise analysis reviews the construction noise levels during the various phases of the project.

Project generated 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. Site grading is expected to produce the highest sustained construction noise levels. Typical noise sources and noise levels associated with the site grading phase of construction are shown in **Error! Reference source not found.**. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. A likely worst-case construction noise scenario during grading assumes the use of a grader, a dozer, an excavator, a backhoe, and a water truck (modeled as a dump truck) operating between 25 and 350 feet from the property line.

Assuming a usage factor of 40 percent for each piece of equipment, unmitigated noise levels have the potential to reach 84.3 dBA L_{eq} and 87.7 dBA_{Lmax} at the property line during grading.

Consistency with Applicable Standards

City of Moreno Valley General Plan

The City of Moreno Valley General Plan Objective 6.5 requires the minimization of noise impacts from significant noise generators such as construction. Policy 6.5.2 states that construction activities shall be operated in a manner that limits noise impacts on surrounding uses. Mitigation measures to minimize the impact of construction on nearby sensitive receptors are provided in Section VII.

City of Moreno Valley Municipal Code

The City's Municipal Code Section 8.14.040E limits the hours of construction to 6:00 AM to 8:00 PM Monday through Friday (except for holidays), and 7:00 AM to 8:00 PM on weekends and holidays, unless written approval is obtained from the city building official or city engineer. Section 8.21.050O further restricts the grading portion of construction to 7:00 AM to 6:00 PM Monday through Friday and 8:00 AM to 4:00 PM on weekends and holidays. In addition, Section 11.80.030D of the City's Municipal Code does not allow construction between the hours of 8:00 PM and 7:00 AM that creates a noise disturbance, defined as being audible at a distance of 200 feet from the property line.

Construction is anticipated to occur during the permissible hours according to the City's Municipal Code. Construction noise will have a temporary or periodic increase in the ambient noise levels above existing within the project vicinity. As stated above, project construction noise may reach 84.3 dBA L_{eq} and 87.7 dBA_{Lmax} at the property line during grading. The nearest sensitive receptors to the project site are located adjacent to the project's northern and southern property lines. As stated earlier, any construction activities that occur outside the allowable times of the City's Municipal Code would be considered significant. Therefore, the impact is considered less than significant; however, noise reduction measures have been provided in Section VII to further reduce construction noise.

2. Noise Impacts to Off-Site Receptors Due to Project Generated Traffic

The proposed project is expected to generate approximately 2,966 average daily vehicle trips which will not noticeably increase ambient noise levels in the project area. Typically, a doubling of traffic volumes is required to result in an increase of 3 dBA, which is considered to be a barely audible change. Based on existing traffic data, project trip generation and distribution information provided by Kunzman Associates (August 2016), project generated traffic will not result in a doubling of traffic volumes along any affected road segment. No further analysis is necessary.

3. Transportation Noise Impacts to the Proposed Project

The City of Moreno Valley's General Plan does not identify criteria in order to assess those impacts related to transportation noise. Therefore, for the purpose of this analysis, the standards contained in the General Plan Guidelines, a publication of the California Office of Planning and Research has been used in order to assess transportation noise impacts to the proposed project. These standards specify maximum noise levels allowable for new developments potentially impacted by transportation noise sources and are used by many California cities and counties. As shown in Table 4, multiple family residential uses are considered to be "acceptable" in environments where the exterior noise level reach up to 65 dBA CNEL and "conditionally acceptable" in environments where the exterior noise level reaches up to 70 dBA CNEL. In areas where the noise level reaches up to 70 dBA CNEL, new construction or development should be undertaken only after a detailed noise analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Further, the City of Moreno Valley enforces the provisions of

the State Noise Insulation Standards (Title 24), which also specifies that indoor noise for multi-family living spaces shall not exceed 45 dB(A) CNEL.

Roadways that may generate enough traffic noise under buildout conditions to effect the proposed residential uses include Moreno Beach Drive and John F. Kennedy Drive. The City of Moreno Valley General Plan Environmental Impact Report identifies Moreno Beach Drive as a Divided Major Arterial and John F. Kennedy Drive as an Arterial Roadway. Per County of Riverside Industrial Hygiene Guidelines for Determining and Mitigating Traffic Noise Impacts to Residential Structures and County of Riverside General Plan, Chapter 4, Figure C-3 "Link Volume Capacities/Level of Service for Riverside County Roadways" revised March 2001, future buildout noise levels associated with these roadways were modeled using Average Daily Trip (ADT) Level of Service "C" design capacities (also known as future build-out daily traffic volumes). Moreno Beach Drive is expected to accommodate up to 43,100 vehicles per day at the Level of Service C and John F. Kennedy Drive is expected to accommodate up to 28,700 vehicles per day at Level of Service C.

FHWA modeling was conducted to calculate noise levels associated with buildout vehicle traffic noise from each of these roadways. As shown in Table 6, buildout traffic noise levels could reach up to 69 dBA CNEL at the proposed multi-family residential building that lies closest to Moreno Beach Drive, approximately 596 feet east of the roadway; and up to 62 dBA CNEL at the proposed multi-family residential building that is closest to John F. Kennedy Drive, approximately 480 feet south of the roadway. Exterior noise levels at existing and proposed recreational facilities are not expected to exceed 65 dBA CNEL. In addition, the distances from the centerline to the 60, 65, and 70 CNEL contours for both Moreno Beach Drive and John F. Kennedy Drive have been calculated and are presented in Table 7. Modeling spreadsheets are presented in Appendix E.

Consistency with Applicable Standards

City of Moreno Valley

As stated previously, the City of Moreno Valley does not identify criteria in order to assess those impacts related to transportation noise. Therefore, the standards contained in the General Plan Guidelines, a publication of the California Office of Planning and Research has been used in order to assess transportation noise impacts to the proposed project. The guidelines state that the proposed residential land uses would be “normally acceptable” in areas with noise levels up to 65 dBA CNEL and “conditionally acceptable” in areas with noise levels above 70 dBA CNEL.

Conventional construction, but with closed windows and fresh air supply systems or air conditioning will suffice. A measure requiring air conditioning be provided for the group of homes proposed nearest to the driving range will be added to Section VII of this report.

3. Aircraft Noise Impacts to the Proposed Project

The nearest airport to the project site is the March Reserve Air Base, located approximately 4.16 miles to the southwest of the proposed project. As depicted on the City of Moreno Valley General Plan Figure 5.4-1 March Reserve Air Base Noise Impact Area, the project site falls well outside the 60 dBA noise contour for this airport. Therefore, aircraft noise associated with the March Reserve Air Base is not considered to be a source that contributes to the ambient noise levels on the project site and the proposed project would not expose persons residing or working within the area to excessive noise levels from aircraft.

B. Vibration Impacts

This impact discussion analyzes the potential for the proposed project to cause an exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Vibration levels in the project area may be influenced by construction. A vibration impact would generally be considered significant if it involves any construction-related or operations-related impacts in excess of 0.1 inches per second (in/sec) PPV.

1. Construction Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment used on the site. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings respond to these vibrations with varying results ranging from no perceptible effects at the low levels to slight damage at the highest levels. Table 2 gives approximate vibration levels for particular construction activities. This data provides a reasonable estimate for a wide range of soil conditions.

The nearest existing structures to the project site are located approximately 25 feet to the north of the project site.

As shown in Table 2, the threshold at which there may be a risk of architectural damage to normal houses with plastered walls and ceilings is 0.20 PPV in/second. Primary sources of vibration during construction would be from bulldozers. As shown in Table 2, a large bulldozer could produce up to 0.089 PPV at 25 feet.

Therefore, at up to 0.089 PPV at 25 feet a large bulldozer yields a worst-case noise level well below the threshold of perception and below any risk of architectural damage.

Consistency with Applicable Standards

The City of Moreno Valley does not have standards or guidelines regarding ground-borne vibration. Vibration impacts will be reduced through implementation of construction mitigation measures provided in Section VII. Project construction will not result in any structural damage. Vibration associated with project construction would be less than significant.

Table 5

Typical Construction Equipment Noise Levels[1]

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Suggested Maximum Sound Levels for Analysis (dBA at 50 feet)
Rock Drills	83-99	96
Jack Hammers	75-85	82
Pneumatic Tools	78-88	85
Pumps	74-84	80
Dozers	77-90	85
Scrappers	83-91	87
Haul Trucks	83-94	88
Cranes	79-86	82
Portable Generators	71-87	80
Rollers	75-82	80
Tractors	77-82	80
Front-End Loaders	77-90	86
Hydraulic Excavators	81-90	86
Graders	79-89	86
Air Compressors	76-89	86
Trucks	81-87	86

[1] Source: Bolt, Beranek & Newman; Noise Control for Buildings and Manufacturing Plants, 1987.

Table 6

Future On-Site Noise Levels

Land Use	Noise Level (CNEL)
Multiple-Family Residential Nearest Moreno Beach Drive	69
Multiple-Family Residential Nearest John F. Kennedy Drive	62
Existing Clubhouse	65
Proposed Clubhouse	62
Driving Range	63

Table 7

Buildout Noise Contours (dBA CNEL)[1]

Roadway	Distance to Contour (feet)		
	70 dBA CNEL	65 dBA CNEL	60 dBA CNEL
Moreno Beach Drive	494	1,562	4,940
John F. Kennedy Drive	197	623	1,970

[1] Exterior noise levels calculated 5-feet above pad elevation, perpendicular to subject roadway.

VII. MEASURES TO REDUCE IMPACTS

A. Construction Mitigation Measures

In addition to adherence to the City of Moreno Valley's policies found in the General Plan Noise Element and Municipal Code limiting the construction hours of operation, the following measures are recommended to reduce construction noise and vibrations, emanating from the proposed project:

1. During all project site excavation and grading on-site, construction contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

2. The contractor shall place all stationary construction equipment so that emitted noise is directed away from the noise sensitive receptors nearest the project site.

3. Equipment shall be shut off and not left to idle when not in use.

4. The contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise/vibration sources and sensitive receptors nearest the project site during all project construction.

5. Jackhammers, pneumatic equipment and all other portable stationary noise sources shall be shielded and noise shall be directed away from sensitive receptors.

B. On-Site Mitigation Measures

1. Provide forced air circulation systems or air conditioning systems shall be provided for the group of multi-family attached residential dwelling units located immediately west of the driving range.

VIII. REFERENCES

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APPENDICES

Appendix A – List of Acronyms

Appendix B – Definitions of Acoustical Terms

Appendix C – Noise Monitoring Field Worksheets

Appendix D – RCNM Noise Modeling Output

Appendix E – FHWA Traffic Noise Prediction Model – FHWA-RD-77-108 Output

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
L_{dn}	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

Definitions of Acoustical Terms

Term	Definition
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.
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).
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.
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.
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.
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.
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.
L_{max}, L_{min}	L_{max} 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. L_{min} is the minimum level.
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.
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.

APPENDIX C

Noise Monitoring Field Worksheets

Noise Measurement
Field Data

Project Name: Moreno Valley Ranch Golf Course Project - Noise Date: 11-Aug-16

Project #: 6639a

Noise Measurement #: NM1 **3099 LxT_Data.076 .xlsx** Technician: **Ian Edward Gallagher**

Nearest Address or Cross Street: **Moreno Beach Drive & Championship Drive**

Site Description (Type of Existing Land Use and any other notable features) **Golf course, surrounding: all residential, course wraps its way around between houses and rocky hills**

Weather: Clear sunny skies, Haze/ Smog, wind almost calm. **Settings:** **SLOW** **FAST** (Circle one)

Temperature: 68 deg F **Wind: Calm to 2mph** **Humidity:** 72% **Terrain:** **Hilly, sloping down North East**

Start Time: **9:05 AM** **End Time:** **9:15 AM** **Run Time:** **10 MIN**

Leq:	47.6 **dB**	**Primary Noise Source:**	**Workmen drilling for soil samples. Noise measurement taken between drills. Drill**
Lmax	67 **dB**		**not active. Ocassional clatter or bang from drill site**
L2	54.2 **dB**	**Secondary Noise Sources:**	**Leaf blower operating by club house. Bird song, chirping day crickets.**
L8	49.6 **dB**		**Very light traffic ambiance from surrounding roads.**
L25	47.4 **dB**		
L50	43.4 **dB**		

NOISE METER:	SoundTrack LxT Class 1	**CALIBRATOR:**	Larson Davis CAL250 Acoustic Calibrator
MAKE:	Larson Davis	**MAKE:**	Larson Davis
MODEL:	LxT1	**MODEL:**	Cal250
SERIAL NUMBER:	3099	**SERIAL NUMBER:**	2723
ACTORY CALIBRATION DATE:	11/4/2014	**FACTORY CALIBRATION DATE:**	11/3/2014
IELD CALIBRATION DATE:			

KUNZMAN ASSOCIATES, INC.

Additional Notes/Sketch

NM1 looking back towards club house.

NM1 looking uphill towards houses along Championship Drive

Summary				
File Name	LxT_Data.076			
Serial Number	0003099			
Model	SoundTrack LxT®			
Firmware Version	2.301			
Start	2016-08-11 9:05:46			
Stop	2016-08-11 9:15:46			
Duration	0:10:00.0			
Run Time	0:10:00.0			
Pause	0:00:00.0			
Pre Calibration	2016-08-11 9:04:43			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamp	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Low			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	Z Weighting			
OBA Max Spectrum	Bin Max			
Overload	121.3 dB			
Results				
LAeq	47.6 dB			
LAE	75.4 dB			
EA	3.826 µPa²h			
EA8	183.625 µPa²h			
EA40	918.126 µPa²h			
LZpeak (max)	2016-08-11 9:15:35	88.0 dB		
LASmax	2016-08-11 9:05:50	67.0 dB		
LASmin	2016-08-11 9:13:23	40.4 dB		
SEA	-99.9 dB			
LCeq	57.7 dB		**Statistics**	
LAeq	47.6 dB		**LAS2.00**	54.2 dB
LCeq - LAeq	10.1 dB		**LAS8.00**	49.6 dB
LAIeq	53.5 dB		**LAS25.00**	47.4 dB
LAeq	47.6 dB		**LAS50.00**	43.4 dB
LAIeq - LAeq	5.9 dB		**LAS66.60**	42.3 dB
# Overloads	0		**LAS90.00**	41.3 dB
Overload Duration	0.0 s			

APPENDIX D

RCNM Noise Modeling Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 8/10/2016
Case Description: 6639a Moreno Valley Golf Course

---- Receptor #1 ----

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Residential	Residential	65	65	45

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	25	0
Grader	No	40	85		100	0
Dump Truck	No	40		76.5	175	0
Excavator	No	40		80.7	250	0
Backhoe	No	40		77.6	350	0

Equipment	Calculated (dBA) *Lmax	Leq	Results Day Lmax
Dozer	87.7	83.7	N/A
Grader	79	75	N/A
Dump Truck	65.6	61.6	N/A
Excavator	66.7	62.8	N/A
Backhoe	60.7	56.7	N/A
Total	87.7	84.3	N/A

*Calculated Lmax is the Loudest value.

APPENDIX E

FHWA Traffic Noise Prediction Model
- FHWA RD-77-108 Output

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 60 CNEL Noise Contour
Moreno Beach Drive Noise Level at Nearest Proposed Residential

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	2496.09	51.72	86.20	1853.07	8.62	14.37	459.52	71.83	119.72
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	26.68	9.84	12.06	25.38	2.06	4.28	19.33	11.27	13.49
Distance	-10.83	-10.83	-10.83	-10.83	-10.83	-10.83	-10.83	-10.83	-10.83
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	61.96	52.80	59.25	60.67	45.02	51.47	54.61	54.23	60.67

DAY LEQ	64.16	EVENING LEQ	61.27	NIGHT LEQ	62.36	
CNEL	**69.18**					

ADT	43100.00
SPEED	50.00
DISTANCE	596.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	69.18
DAY LEQ	64.16
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout Noise Levels
John F. Kennedy Drive Noise Level at Nearest Residential

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	1752.47	22.96	11.48	1301.01	3.83	1.91	322.62	31.89	15.94
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	26.69	7.86	4.85	25.40	0.08	-2.93	19.34	9.29	6.28
Distance	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.91	47.80	50.01	55.61	40.02	42.22	49.56	49.23	51.43

DAY LEQ	58.14	EVENING LEQ	55.92	NIGHT LEQ	54.96	
CNEL	**62.19**					

ADT	28700.00
SPEED	35.00
DISTANCE	480.00
% A	97.00
% MT	2.00
% HT	1.00
LEFT	-90.00
RIGHT	90.00
CNEL	62.19
DAY LEQ	58.14
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout CNEL

John F. Kennedy Drive Noise Level at Existing Clubhouse

	DAYTIME			EVENING			NIGHTTIME				
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	ADT	28700.00
										SPEED	35.00
										DISTANCE	247.00
INPUT PARAMETERS											
Vehicles per hour	1752.47	22.96	11.48	1301.01	3.83	1.91	322.62	31.89	15.94	% A	97.00
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	% MT	2.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	% HT	1.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	LEFT	-90.00
										RIGHT	90.00
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	CNEL	65.07
ADJUSTMENTS										DAY LEQ	61.02
Flow	26.69	7.86	4.85	25.40	0.08	-2.93	19.34	9.29	6.28		
Distance	-7.01	-7.01	-7.01	-7.01	-7.01	-7.01	-7.01	-7.01	-7.01	Day hour	89.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Absorbtive?	no
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	Use hour?	no
LEQ	59.79	50.68	52.89	58.50	42.90	45.11	52.44	52.11	54.32	GRADE dB	0.00

DAY LEQ	61.02	EVENING LEQ	58.81	NIGHT LEQ	57.84	
CNEL	**65.07**					

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout Noise Levels
John F. Kennedy Drive Noise Level at Proposed Clubhouse

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	1752.47	22.96	11.48	1301.01	3.83	1.91	322.62	31.89	15.94
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	26.69	7.86	4.85	25.40	0.08	-2.93	19.34	9.29	6.28
Distance	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89	-9.89
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	56.91	47.80	50.01	55.61	40.02	42.22	49.56	49.23	51.43

DAY LEQ	58.14	EVENING LEQ	55.92	NIGHT LEQ	54.96	
CNEL	**62.19**					

ADT	28700.00
SPEED	35.00
DISTANCE	480.00
% A	97.00
% MT	2.00
% HT	1.00
LEFT	-90.00
RIGHT	90.00
CNEL	62.19
DAY LEQ	58.14
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout CNEL

John F. Kennedy Drive Noise Level at Driving Range

	DAYTIME			EVENING			NIGHTTIME				
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	ADT	28700.00
										SPEED	35.00
										DISTANCE	357.00
INPUT PARAMETERS											
Vehicles per hour	1752.47	22.96	11.48	1301.01	3.83	1.91	322.62	31.89	15.94	% A	97.00
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	% MT	2.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	% HT	1.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	LEFT	-90.00
										RIGHT	90.00
NOISE CALCULATIONS											
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05	CNEL	63.47
ADJUSTMENTS										DAY LEQ	59.42
Flow	26.69	7.86	4.85	25.40	0.08	-2.93	19.34	9.29	6.28		
Distance	-8.61	-8.61	-8.61	-8.61	-8.61	-8.61	-8.61	-8.61	-8.61	Day hour	89.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Absorbtive?	no
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	Use hour?	no
LEQ	58.19	49.08	51.29	56.90	41.30	43.51	50.84	50.51	52.72	GRADE dB	0.00

DAY LEQ	59.42	EVENING LEQ	57.21	NIGHT LEQ	56.24	
CNEL	**63.47**					

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 60 CNEL Noise Contour
Moreno Beach Drive

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	2496.09	51.72	86.20	1853.07	8.62	14.37	459.52	71.83	119.72
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	26.68	9.84	12.06	25.38	2.06	4.28	19.33	11.27	13.49
Distance	-20.02	-20.02	-20.02	-20.02	-20.02	-20.02	-20.02	-20.02	-20.02
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	52.78	43.62	50.06	51.49	35.84	42.28	45.43	45.04	51.49

DAY LEQ	54.97	EVENING LEQ	52.08	NIGHT LEQ	53.18	
CNEL	**60.00**					

ADT	43100.00
SPEED	50.00
DISTANCE	4940.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	60.00
DAY LEQ	54.97
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 65 CNEL Noise Contour
Moreno Beach Drive

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	2496.09	51.72	86.20	1853.07	8.62	14.37	459.52	71.83	119.72
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02
ADJUSTMENTS									
Flow	26.68	9.84	12.06	25.38	2.06	4.28	19.33	11.27	13.49
Distance	-15.02	-15.02	-15.02	-15.02	-15.02	-15.02	-15.02	-15.02	-15.02
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	57.78	48.62	55.06	56.49	40.84	47.28	50.43	50.04	56.49

DAY LEQ	59.97	EVENING LEQ	57.08	NIGHT LEQ	58.18	
CNEL	**65.00**					

ADT	43100.00
SPEED	50.00
DISTANCE	1562.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	65.00
DAY LEQ	59.97
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 70 CNEL Noise Contour
Moreno Beach Drive

	DAYTIME			EVENING			NIGHTTIME				
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	ADT	43100.00
										SPEED	50.00
										DISTANCE	494.00
INPUT PARAMETERS											
Vehicles per hour	2496.09	51.72	86.20	1853.07	8.62	14.37	459.52	71.83	119.72	% A	92.00
Speed in MPH	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	% MT	3.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	% HT	5.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	LEFT	-90.00
										RIGHT	90.00
NOISE CALCULATIONS											
Reference levels	71.12	78.79	83.02	71.12	78.79	83.02	71.12	78.79	83.02	CNEL	70.00
ADJUSTMENTS										DAY LEQ	64.97
Flow	26.68	9.84	12.06	25.38	2.06	4.28	19.33	11.27	13.49		
Distance	-10.02	-10.02	-10.02	-10.02	-10.02	-10.02	-10.02	-10.02	-10.02	Day hour	89.00
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Absorbtive?	no
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	Use hour?	no
LEQ	62.78	53.62	60.06	61.49	45.84	52.28	55.43	55.04	61.49	GRADE dB	0.00

DAY LEQ 64.97 EVENING LEQ 62.08 NIGHT LEQ 63.18

CNEL **70.00**

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 60 CNEL Noise Contour
John F. Kennedy Drive

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	1662.13	34.44	57.40	1233.95	5.74	9.57	305.99	47.83	79.72
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	26.46	9.62	11.84	25.17	1.84	4.06	19.11	11.05	13.27
Distance	-16.03	-16.03	-16.03	-16.03	-16.03	-16.03	-16.03	-16.03	-16.03
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	50.54	43.43	50.86	49.25	35.65	43.08	43.20	44.85	52.29

DAY LEQ	54.11	EVENING LEQ	50.34	NIGHT LEQ	53.44	
CNEL	**60.00**					

ADT	28700.00
SPEED	35.00
DISTANCE	1970.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	60.00
DAY LEQ	54.11
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 65 CNEL Noise Contour
John F. Kennedy Drive

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	1662.13	34.44	57.40	1233.95	5.74	9.57	305.99	47.83	79.72
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	26.46	9.62	11.84	25.17	1.84	4.06	19.11	11.05	13.27
Distance	-11.03	-11.03	-11.03	-11.03	-11.03	-11.03	-11.03	-11.03	-11.03
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	55.54	48.43	55.86	54.25	40.65	48.08	48.20	49.85	57.29

DAY LEQ	59.11	EVENING LEQ	55.34	NIGHT LEQ	58.44	
CNEL	**65.00**					

ADT	28700.00
SPEED	35.00
DISTANCE	623.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	65.00
DAY LEQ	59.11
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

FHWA Sound32 Spreadsheet
Riverside County Published Mix
Larger than Secondary

Buildout 70 CNEL Noise Contour
John F. Kennedy Drive

	DAYTIME			EVENING			NIGHTTIME		
	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS	AUTOS	M.TRUCKS	H.TRUCKS
INPUT PARAMETERS									
Vehicles per hour	1662.13	34.44	57.40	1233.95	5.74	9.57	305.99	47.83	79.72
Speed in MPH	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Left angle	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00	-90.00
Right angle	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
NOISE CALCULATIONS									
Reference levels	65.11	74.83	80.05	65.11	74.83	80.05	65.11	74.83	80.05
ADJUSTMENTS									
Flow	26.46	9.62	11.84	25.17	1.84	4.06	19.11	11.05	13.27
Distance	-6.03	-6.03	-6.03	-6.03	-6.03	-6.03	-6.03	-6.03	-6.03
Finite Roadway	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barrier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Constant	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00	-25.00
LEQ	60.54	53.43	60.86	59.25	45.65	53.08	53.20	54.85	62.29

DAY LEQ	64.11	EVENING LEQ	60.34	NIGHT LEQ	63.44	
CNEL	**70.00**					

ADT	28700.00
SPEED	35.00
DISTANCE	197.00
% A	92.00
% MT	3.00
% HT	5.00
LEFT	-90.00
RIGHT	90.00
CNEL	70.00
DAY LEQ	64.11
Day hour	89.00
Absorbtive?	no
Use hour?	no
GRADE dB	0.00

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RESOLUTION NUMBER 2021-06

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, CALIFORNIA, APPROVING PLOT PLAN PEN20-0060 FOR THE DEVELOPMENT OF A 5,000 SQUARE FOOT GOLF COURSE CLUBHOUSE BUILDING, WITH 1,950 SQUARE FEET OF OUTDOOR SEATING AT THE EXISTING RANCHO DEL SOL GOLF COURSE LOCATED AT 28095 JOHN F KENNEDY DRIVE (APN 304-100-007)

WHEREAS, the City of Moreno Valley ("City") is a general law city and a municipal corporation of the State of California; and

WHEREAS, ROCIII CA Belago LLC., ("Developer") has filed an application for the approval of Plot Plan PEN20-0060 ("Application") for the development of a new 5,000 square foot golf course clubhouse building with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course ("Project") located at 28095 John F Kennedy Drive (APN 304-100-007) ("Site"); and

WHEREAS, Section 9.02.070 (Plot Plan) of the Moreno Valley Municipal Code acknowledges that the purpose of a plot plan is to provide a mechanism by which all new construction of industrial, commercial or multiple-family residential can be reviewed when not subject to other discretionary review processes which have review authority over project design; and

WHEREAS, the Application has been evaluated in accordance with Section 9.02.070 (Plot Plan) of the Municipal Code with consideration given to the City's General Plan, Specific Plan 193, Zoning Ordinance, and other applicable laws and regulations; and

WHEREAS, Section 9.02.070 of the Municipal Code imposes conditions of approval upon projects for which a Plot Plan is required, which conditions may be imposed by the Planning Commission to address on-site improvements, off-site improvements, the manner in which the site is used and any other conditions as may be deemed necessary to protect the public health, safety and welfare and ensure that the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, Staff has presented for the Planning Commission's consideration Conditions of Approval to be imposed upon Plot Plan PEN20-0060, which conditions have been deemed necessary to protect the public health, safety and welfare and ensure that the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, pursuant to the provisions of Section 9.02.200 (Public Hearing and Notification Procedures) of the Municipal Code and Government Code section 65905, a public hearing was scheduled for February 11, 2021, and notice thereof was duly

published and posted, and mailed to all property owners of record within 600 feet of the Site; and

WHEREAS, on February 11, 2021, the public hearing to consider the Application was duly conducted by the Planning Commission at which time all interested persons were provided with an opportunity to testify and to present evidence; and

WHEREAS, consistent with the requirements of Section 9.02.070 (Plot Plan) of the Municipal Code, at the public hearing the Planning Commission considered Conditions of Approval to be imposed upon Plot Plan PEN20-0060, which conditions were prepared by Planning Division staff who deemed said conditions to be necessary to protect the public health, safety and welfare and to ensure the proposed Project will be developed in accordance with the purpose and intent of Title 9 (Planning and Zoning) of the Municipal Code; and

WHEREAS, at the public hearing, the Planning Commission considered whether each of the requisite findings specified in Section 9.02.070 of the Municipal Code and set forth herein could be made with respect to the proposed Project as conditioned by the Conditions of Approval; and

WHEREAS, on February 11, 2021, in accordance with the provisions of the California Environmental Quality Act (CEQA) as set forth in Public Resources Code Sections 21000 – 21177 and the CEQA Guidelines as set forth in 14 California Code of Regulations §§15000-15387, the Planning Commission reviewed and considered the Planning Division's recommendation that the proposed Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendment (PEN16-0128) has been prepared pursuant to CEQA and the CEQA Guidelines in that the Project will not cause a significant effect on the environment because site conditions are consistent and do not create more or different environmental impacts than those addressed in the Mitigated Negative Declaration and the Project will not increase the intensity of the golf course provided in the Specific Plan.

NOW, THEREFORE, THE PLANNING COMMISSION OF THE CITY OF MORENO VALLEY, 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. **Notice**

That pursuant to Government Code section 66020(d)(1), notice is hereby given that the proposed project is subject to certain fees, dedications, reservations and other exactions as provided herein.

Section 3. **Evidence**

That the Planning Commission has considered all of the evidence submitted into the administrative record for the proposed Plot Plan, including, but not limited to, the following:

(a) Moreno Valley General Plan and all other relevant provisions contained therein;
(b) Title 9 (Planning and Zoning) of the Moreno Valley Municipal Code, Specific Plan 193, and all other relevant provisions referenced therein;
(c) Application for the approval of Plot Plan PEN20-0060 and all documents, records and references contained therein;
(d) Conditions of Approval for Plot Plan PEN20-0060, attached hereto as Exhibit A;
(e) Staff Report prepared for the Planning Commission's consideration and all documents, records and references related thereto, and Staff's presentation at the public hearing;
(f) Testimony and/or comments from Applicant and its representatives during the public hearing; and
(g) Testimony and/or comments from all persons that was provided in written format or correspondence prior to or at the public hearing.

Section 4. Findings

That based on the foregoing Recitals and the Evidence contained in the Administrative Record as set forth above, the Planning Commission makes the following findings in approving Plot Plan PEN20-0060:

(a) That as conditioned, The proposed Project is consistent with the goals, objectives, policies and programs of the General Plan;
(b) That as conditioned, The proposed Project complies with all applicable zoning and other regulations;
(c) That as conditioned, The proposed Project will not be detrimental to the public health, safety or welfare or materially injurious to properties or improvements in the vicinity; and
(d) That as conditioned, The location, design and operation of the proposed Project will be compatible with existing and planned land uses in the vicinity.

Section 5. Approval

That based on the foregoing Recitals, Evidence contained in the Administrative Record and Findings set forth above, the Planning Commission hereby approves Plot Plan PEN20-0060 subject to the Conditions of Approval for Plot Plan PEN20-0060 attached hereto as Exhibit A.

Section 6. Repeal of Conflicting Provisions

That all the provisions as heretofore adopted by the Planning Commission that are in conflict with the provisions of this Resolution are hereby repealed.

Section 7. **Severability**

That the Planning Commission 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 8. **Effective Date**

That this Resolution shall take effect immediately upon the date of adoption.

PASSED AND ADOPTED THIS _____ day of _____, 2021.

CITY OF MORENO VALLEY
PLANNING COMMISSION

_____
Patricia Korzec,
Chairperson

ATTEST:

_____
Patty Nevins,
Planning Official

APPROVED AS TO FORM:

_____
Steven B. Quintanilla,
City Attorney

Exhibits:
Exhibit A: Conditions of Approval PEN20-0060

Exhibit A

CONDITIONS OF APPROVAL

CITY OF MORENO VALLEY
CONDITIONS OF APPROVAL
Plot Plan (PEN20-0060)

EFFECTIVE DATE:
EXPIRATION DATE:

COMMUNITY DEVELOPMENT DEPARTMENT

Planning Division

1. A change or modification to the land use or the approved site plans may require a separate approval. Prior to any change or modification, the property owner shall contact the City of Moreno Valley Community Development Department to determine if a separate approval is required.

2. Any expansion to this use or exterior alterations will require the submittal of a separate application(s) and shall be reviewed and approved under separate permit(s). (MC 9.02.080)

3. The developer, or the developer's successor-in-interest, shall be responsible for maintaining any undeveloped portion of the site in a manner that provides for the control of weeds, erosion and dust. (MC 9.02.030)

4. Unless specifically superseded herein, these conditions of approval do not replace or supersede the final conditions of approval for approved project PEN 16-0130 and PEN20-0024 or any related projects or plan checks.

5. This approval shall expire three years after the approval date of this project unless used or extended as provided for by the City of Moreno Valley Municipal Code; otherwise it shall become null and void and of no effect whatsoever. Use means the beginning of substantial construction contemplated by this approval within the three-year period, which is thereafter pursued to completion, or the beginning of substantial utilization contemplated by this approval. (MC 9.02.230)

6. All landscaped areas shall be maintained in a healthy and thriving condition, free from weeds, trash and debris. (MC 9.02.030)

7. This project is located within the Moreno Valley Ranch Specific Plan 193. The provisions of the specific plan, the design manual, their subsequent amendments, and the Conditions of Approval shall prevail unless modified herein. (MC 9.13)

8. The site shall be developed in accordance with the approved plans on file in the Community Development Department - Planning Division, the Municipal Code

regulations, General Plan, and the conditions contained herein. Prior to any use of the project site or business activity being commenced thereon, all Conditions of Approval shall be completed to the satisfaction of the Planning Official. (MC 9.14.020)

9. Any signs indicated on the submitted plans are not included with this approval. Any signs, whether permanent (e.g. wall, monument) or temporary (e.g. banner, flag), require separate application and approval by the Planning Division. No signs are permitted in the public right of way. (MC 9.12)

10. All site plans, grading plans, landscape and irrigation plans, fence/wall plans, lighting plans and street improvement plans shall be coordinated for consistency with this approval.

Special Conditions

11. When there is a parking space adjacent to a trash enclosure provide a landscape finger with a minimum of a 5-foot landscape area shall be provided between the two.

12. The site has been approved for a new 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course property. A change or modification shall require separate approval.

13. Prior to final occupancy of the new clubhouse building an application shall be submitted to the Planning Division for the demolition or modification of the second floor of the existing clubhouse building and associated treatment of the remaining area if applicable. Additionally, demolition or modification of the second floor of the existing clubhouse building and treatment of remaining area if applicable must be completed prior to final occupancy of the new clubhouse building.

14. The current temporary portable clubhouse building in used will be removed once the permanent clubhouse building has been built and issued a certificate of occupancy.

15. The 9-hole recreation area shall continue to be maintained in a park-like conditions in compliance with the maintenance agreement between ROC III CA Belago, LLC and the City of Moreno Valley.

Prior to Building Permit

16. Prior to the issuance of building permits, proposed covered trash enclosures shall be included in the Planning review of the Fence and Wall plan or separate Planning submittal. The trash enclosure(s), including the roof materials, shall be compatible with the architecture, color and materials of the building(s) design. Trash enclosure

areas shall include landscaping on three sides. Approved design plans shall be included in a Building submittal (Fence and Wall or building design plans). (GP Objective 43.6, DG)

17. Prior to issuance of any building permits, final landscaping and irrigation plans shall be submitted for review and approved by the Planning Division. After the third plan check review for landscape plans, an additional plan check fee shall apply. The plans shall be prepared in accordance with the City's Landscape Requirements and shall include:

a. A three (3) foot high decorative wall, solid hedge or berm shall be placed in any setback areas between a public right of way and a parking lot for screening.

b. Drought tolerant landscape shall be used.

c. Street trees shall be provided every 40 feet on center in the right of way.

d. On-site trees shall be planted at an equivalent of one (1) tree per thirty (30) linear feet of the perimeter of a parking lot and per thirty linear feet of a building dimension for the portions of the building visible from a parking lot or right of way. Trees may be massed for pleasing aesthetic effects.

e. Enhanced landscaping shall be provided at all driveway entries and street corner locations The review of all utility boxes, transformers etc. shall be coordinated to provide adequate screening from public view.

f. Landscaping on three sides of any trash enclosure.

g. All site perimeter and parking lot landscape and irrigation shall be installed prior to the release of certificate of any occupancy permits for the site.

18. Prior to issuance of building permits, the Planning Division shall review and approve the location and method of enclosure or screening of transformer cabinets, commercial gas meters and back flow preventers as shown on the final working drawings. Location and screening shall comply with the following criteria: transformer cabinets and commercial gas meters shall not be located within required setbacks and shall be screened from public view either by architectural treatment or landscaping; multiple electrical meters shall be fully enclosed and incorporated into the overall architectural design of the building(s); back-flow preventers shall be screened by landscaping. (GP Objective 43.30)

19. Prior to issuance of a building permit, the developer/property owner or developer's successor-in-interest shall pay all applicable impact fees due at permit issuance, including but not limited to Multi-species Habitat Conservation Plan (MSHCP)

mitigation fees. (Ord)

20. Prior to building final, the developer/owner or developer's/owner's successor-in-interest shall pay all applicable impact fees, including but not limited to Transportation Uniform Mitigation fees (TUMF), and the City's adopted Development Impact Fees. (Ord)

21. Prior to issuance of building permits, for projects that will be phased, a phasing plan shall be submitted to and approved by the Planning Division if occupancy is proposed to be phased.

22. Prior to or at building plan check submittal, two copies of a detailed, on-site, computer generated, point-by-point comparison lighting plan, including exterior building, parking lot, and landscaping lighting, shall be submitted to the Planning Division for review and approval prior to the issuance of a building permit. The lighting plan shall be generated on the plot plan and shall be integrated with the final landscape plan. The plan shall indicate the manufacturer's specifications for light fixtures used, shall include style, illumination, location, height and method of shielding per the City's Municipal Code requirements. After the third plan check review for lighting plans, an additional plan check fee will apply. (MC 9.08.100, 9.16.280)

23. Prior to issuance of building permits, screening details shall be addressed on the building plans for roof top equipment submitted for Planning Division review and approval through the building plan check process. All equipment shall be completely screened so as not to be visible from public view, and the screening shall be an integral part of the building.

24. Prior to issuance of any grading permit, all Conditions of Approval, and Mitigation Measures shall be printed on the grading plans.

25. Prior to the issuance of grading permits, decorative (e.g. colored/scored concrete or as approve by the Planning Official) pedestrian pathways across circulation aisles/paths shall be provided throughout the development to connect dwellings with open spaces and/or recreational uses or commercial/industrial buildings with open space and/or parking. and/or the public right-of-way. The pathways shall be shown on the precise grading plan. (GP Objective 46.8, DG)

26. Prior to issuance of grading permits, the developer shall pay the applicable Stephens' Kangaroo Rat (SKR) Habitat Conservation Plan mitigation fee. (Ord)

27. If potential historic, archaeological, Native American cultural resources or paleontological resources are uncovered during excavation or construction activities at the project site, work in the affected area must cease immediately and a qualified person (meeting the Secretary of the Interior's standards (36CFR61)) shall be

consulted by the applicant to evaluate the find, and as appropriate recommend alternative measures to avoid, minimize or mitigate negative effects on the historic, prehistoric, or paleontological resource. Determinations and recommendations by the consultant shall be immediately submitted to the Planning Division for consideration, and implemented as deemed appropriate by the Community Development Director, in consultation with the State Historic Preservation Officer (SHPO) and any and all affected Native American Tribes before any further work commences in the affected area.

If human remains are discovered during grading and other construction excavation, no further disturbance shall occur until the County Coroner has made necessary findings as to origin. If the County Coroner determines that the remains are potentially Native American, the California Native American Heritage Commission shall be notified within 5-days of the published finding to be given a reasonable opportunity to identify the "most likely descendant." The "most likely descendant" shall then make recommendations, and engage in consultations concerning the treatment of the remains (California Public Resources Code 5097.98). (GP Objective 23.3, CEQA).

28. Prior to approval of any grading permits, plans for any security gate system shall be submitted to and approved by to the Planning Division.

29. Prior to the issuance of grading permits, the site plan and grading plans shall show decorative hardscape (e.g. colored concrete, stamped concrete, pavers or as approved by the Planning Official) consistent and compatible with the design, color and materials of the proposed development for all driveway ingress/egress locations of the project. [apply to commercial and multi-family project, and major entry driveways for industrial]

30. Prior to the issuance of grading permits, a temporary project identification sign shall be erected on the site in a secure and visible manner. The sign shall be conspicuously posted at the site and remain in place until occupancy of the project. The sign shall include the following:

    a. The name (if applicable) and address of the development.
    b. The developer's name, address, and a 24-hour emergency telephone number.

<u>Prior to Building Final or Occupancy</u>

31. Prior to building final, all required landscaping and irrigation shall be installed per plan, certified by the Landscape Architect and inspected by the Planning Division. (MC 9.03.040, MC 9.17).

32. Prior to building final, Planning approved/stamped landscape plans shall be provided to the Community Development Department – Planning Division on a CD disk.

33. Prior to building final, all required and proposed fences and walls shall be constructed according to the approved plans on file in the Planning Division. (MC 9.080.070).

Building Division

34. The proposed non-residential project shall comply with the latest Federal Law, Americans with Disabilities Act, and State Law, California Code of Regulations, Title 24, Chapter 11B for accessibility standards for the disabled including access to the site, exits, bathrooms, work spaces, etc.
Minimum # of egress exits (to be equal to no less than the minimum # of required exits) shall be provided with connection provided to the accessible route and the public right of way.

35. Prior to submittal, all new development, including residential second units, are required to obtain a valid property address prior to permit application. Addresses can be obtained by contacting the Building Safety Division at 951.413.3350.

36. Contact the Building Safety Division for permit application submittal requirements.

37. Any construction within the city shall only be as follows: Monday through Friday seven a.m. to seven p.m(except for holidays which occur on weekdays), eight a.m. to four p.m.; weekends and holidays (as observed by the city and described in the Moreno Valley Municipal Code Chapter 2.55), unless written approval is first obtained from the Building Official or City Engineer.

38. Building plans submitted shall be signed and sealed by a California licensed design professional as required by the State Business and Professions Code.

39. The proposed development shall be subject to the payment of required development fees as required by the City's current Fee Ordinance at the time a building application is submitted or prior to the issuance of permits as determined by the City.

40. The proposed project will be subject to approval by the Eastern Municipal Water District and all applicable fees and charges shall be paid prior to permit issuance. Contact the water district at 951.928.3777 for specific details.

41. All new structures shall be designed in conformance to the latest design standards adopted by the State of California in the California Building Code, (CBC) Part 2,

Title 24, California Code of Regulations including requirements for allowable area, occupancy separations, fire suppression systems, accessibility, etc.

42. The proposed non-residential project shall comply with California Green Building Standards Code, Section 5.106.5.3, mandatory requirements for Electric Vehicle Charging Station (EVCS).

43. The proposed project's occupancy shall be classified by the Building Official and must comply with exiting, occupancy separation(s) and minimum plumbing fixture requirements. Minimum plumbing fixtures shall be provided per the California Plumbing Code, Table 422.1. The occupant load and occupancy classification shall be determined in accordance with the California Building Code.

44. Prior to permit issuance, every applicant shall submit a properly completed Waste Management Plan (WMP), as a portion of the building or demolition permit process. (MC 8.80.030)

FIRE DEPARTMENT

Fire Prevention Bureau

45. All Fire Department access roads or driveways shall not exceed 12 percent grade. (CFC 503.2.7 and MVMC 8.36.060[G])

46. The Fire Department emergency vehicular access road shall be (all weather surface) capable of sustaining an imposed load of 80,000 lbs. GVW, based on street standards approved by the Public Works Director and the Fire Prevention Bureau. The approved fire access road shall be in place during the time of construction. Temporary fire access roads shall be approved by the Fire Prevention Bureau. (CFC 501.4, and MV City Standard Engineering Plan 108d)

47. The angle of approach and departure for any means of Fire Department access shall not exceed 1 ft drop in 20 ft (0.3 m drop in 6 m), and the design limitations of the fire apparatus of the Fire Department shall be subject to approval by the AHJ. (CFC 503 and MVMC 8.36.060)

48. Prior to construction, all locations where structures are to be built shall have an approved Fire Department access based on street standards approved by the Public Works Director and the Fire Prevention Bureau. (CFC 501.4)

49. Prior to issuance of Building Permits, the applicant/developer shall provide the Fire Prevention Bureau with an approved site plan for Fire Lanes and signage. (CFC 501.3)

50. Prior to issuance of Certificate of Occupancy or Building Final, “Blue Reflective Markers” shall be installed to identify fire hydrant locations in accordance with City specifications. (CFC 509.1 and MVLT 440A-0 through MVLT 440C-0)

51. Prior to issuance of building permits, plans specifying the required structural materials for building construction in high fire hazard severity zones shall be submitted to the Fire Prevention Bureau for approval. (CFC, 4905)

52. Prior to issuance of Certificate of Occupancy or Building Final, all commercial buildings shall display street numbers in a prominent location on the street side and rear access locations. The numerals shall be a minimum of twelve inches in height. (CFC 505.1, MVMC 8.36.060[I])

53. Existing fire hydrants on public streets are allowed to be considered available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads. (CFC 507, 501.3) a - After the local water company signs the plans, the originals shall be presented to the Fire Prevention Bureau for signatures. The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

54. Final fire and life safety conditions will be addressed when the Fire Prevention Bureau reviews building plans. These conditions will be based on occupancy, use, California Building Code (CBC), California Fire Code (CFC), and related codes, which are in effect at the time of building plan submittal.

55. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire alarm system monitored by an approved Underwriters Laboratory listed central station based on a requirement for monitoring the sprinkler system, occupancy or use. Fire alarm panel shall be accessible from exterior of building in an approved location. Plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9 and MVMC 8.36.100)

56. The Fire Code Official is authorized to enforce the fire safety during construction requirements of Chapter 33. (CFC Chapter 33 & CBC Chapter 33)

57. Fire lanes and fire apparatus access roads shall have an unobstructed width of not less than twenty–four (24) feet and an unobstructed vertical clearance of not less the thirteen (13) feet six (6) inches. (CFC 503.2.1 and MVMC 8.36.060[E])

58. Prior to issuance of Certificate of Occupancy or Building Final, the applicant/developer shall install a fire sprinkler system based on square footage

and type of construction, occupancy or use. Fire sprinkler plans shall be submitted to the Fire Prevention Bureau for approval prior to installation. (CFC Chapter 9, MVMC 8.36.100[D])

59. Prior to issuance of the building permit for development, independent paved access to the nearest paved road, maintained by the City shall be designed and constructed by the developer within the public right of way in accordance with City Standards. (MVMC 8.36.060, CFC 501.4)

60. Prior to issuance of a Certificate of Occupancy or Building Final, a "Knox Box Rapid Entry System" shall be provided. The Knox-Box shall be installed in an accessible location approved by the Fire Code Official. All exterior security emergency access gates shall be electronically operated and be provided with Knox key switches for access by emergency personnel. (CFC 506.1)

61. Fire Department access driveways over 150 feet in length shall have a turn-around as determined by the Fire Prevention Bureau capable of accommodating fire apparatus. (CFC 503 and MVMC 8.36.060, CFC 501.4)

62. Prior to issuance of Building Permits, plans for structural protection from vegetation fires shall be submitted to the Fire Prevention Bureau for review and approval. Measures shall include, but are not limited to: noncombustible barriers (cement or block walls), fuel modification zones, etc. (CFC Chapter 49)

63. Plans for private water mains supplying fire sprinkler systems and/or private fire hydrants shall be submitted to the Fire Prevention Bureau for approval. (CFC 105 and CFC 3312.1)

64. The Fire Prevention Bureau is required to set a minimum fire flow for the remodel or construction of all commercial buildings per CFC Appendix B and Table B105.1. The applicant/developer shall provide documentation to show there exists a water system capable of delivering said waterflow for 2 hour(s) duration at 20-PSI residual operating pressure. The required fire flow may be adjusted during the approval process to reflect changes in design, construction type, or automatic fire protection measures as approved by the Fire Prevention Bureau. Specific requirements for the project will be determined at time of submittal. (CFC 507.3, Appendix B)

65. Dead-end streets and/or fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround for fire apparatus.

66. Prior to construction, all traffic calming designs/devices must be approved by the Fire Marshal and City Engineer.

67. Prior to building construction, dead end roadways and streets which have not been completed shall have a turnaround capable of accommodating fire apparatus. (CFC

503.2.5)

68. Prior to issuance of Building Permits, the applicant/developer shall furnish one copy of the water system plans to the Fire Prevention Bureau for review. Plans shall: a. Be signed by a registered civil engineer or a certified fire protection engineer; b. Contain a Fire Prevention Bureau approval signature block; and c. Conform to hydrant type, location, spacing of new and existing hydrants and minimum fire flow required as determined by the Fire Prevention Bureau. The required water system, including fire hydrants, shall be installed, made serviceable, and be accepted by the Moreno Valley Fire Department prior to beginning construction. They shall be maintained accessible.

PUBLIC WORKS DEPARTMENT

Land Development

69. The developer shall comply with all applicable City ordinances and resolutions including the City's Municipal Code (MC) and if subdividing land, the Government Code (GC) of the State of California, specifically Sections 66410 through 66499.58, said sections also referred to as the Subdivision Map Act (SMA). [MC 9.14.010]

70. The final approved conditions of approval (COAs) issued and any applicable Mitigation Measures by the Planning Division shall be photographically or electronically placed on mylar sheets and included in the Grading and Street Improvement plans.

71. The developer shall monitor, supervise and control all construction related activities, so as to prevent these activities from causing a public nuisance, including but not limited to, insuring strict adherence to the following:
(a) Removal of dirt, debris, or other construction material deposited on any public street no later than the end of each working day.
(b) Observance of working hours as stipulated on permits issued by the Land Development Division.
(c) The construction site shall accommodate the parking of all motor vehicles used by persons working at or providing deliveries to the site.
(d) All dust control measures per South Coast Air Quality Management District (SCAQMD) requirements during the grading operations.
Violation of any condition, restriction or prohibition set forth in these conditions shall subject the owner, applicant, developer or contractor(s) to remedy as noted in City Municipal Code 8.14.090. In addition, the City Engineer or Building Official may suspend all construction related activities for violation of any condition, restriction or prohibition set forth in these conditions until such time as it has been determined that all operations and activities are in conformance with these conditions.

72. Drainage facilities (e.g., catch basins, water quality basins, etc.) with sump conditions shall be designed to convey the tributary 100-year storm flows. Secondary emergency escape shall also be provided.

73. The developer shall protect downstream properties from damage caused by alteration of drainage patterns (i.e. concentration or diversion of flow, etc). Protection shall be provided by constructing adequate drainage facilities, including, but not limited to, modifying existing facilities or by securing a drainage easement. [MC 9.14.110]

74. This project shall submit civil engineering design plans, reports and/or documents (prepared by a registered/licensed civil engineer) for review and approval by the City Engineer per the current submittal requirements, prior to the indicated threshold or as required by the City Engineer. The submittal consists of, but is not limited to, the following:
    a. Parcel Map (recordation prior to building permit issuance);
    b. Precise grading w/ erosion control plan (prior to building permit issuance);
    c. Final WQMP (prior to grading plan approval);
    d. As-Built revision for all plans (prior to occupancy release).

Prior to Grading Plan Approval

75. Resolution of all drainage issues shall be as approved by the City Engineer.

76. Emergency overflow areas shall be shown at all applicable drainage improvement locations in the event that the drainage improvement fails or exceeds full capacity.

77. A final project-specific Water Quality Management Plan (WQMP) shall be submitted for review and approved by the City Engineer, which:
    a. Addresses Site Design Best Management Practices (BMPs) such as minimizing impervious areas, maximizing permeability, minimizes directly connected impervious areas to the City's street and storm drain systems, and conserves natural areas;
    b. Incorporates Source Control BMPs and provides a detailed description of their implementation;
    c. Describes the long-term operation and maintenance requirements for BMPs requiring maintenance; and
    d. Describes the mechanism for funding the long-term operation and maintenance of the BMPs.
    A copy of the final WQMP template can be obtained on the City's Website or by contacting the Land Development Division. A digital (pdf) copy of the approved final project-specific Water Quality Management Plan (WQMP) shall be submitted to the Land Development Division.

78. The final project-specific Water Quality Management Plan (WQMP) shall be consistent with the approved P-WQMP, as well as in full conformance with the document: "Water Quality Management Plan - A Guidance Document for the Santa Ana Region of Riverside County" dated October 22, 2012. The F-WQMP shall be submitted and approved prior to application for and issuance of grading permits. At a minimum, the F-WQMP shall include the following: Site Design BMPs; Source Control BMPs, Treatment Control BMPs, Operation and Maintenance requirements for BMPs and sources of funding for BMP implementation.

a. The Applicant has proposed to incorporate the use of a bioretention basin. Final design and sizing details of all BMPs must be provided in the first submittal of the F-WQMP. The Applicant acknowledges that more area than currently shown on the plans may be required to treat site runoff as required by the WQMP guidance document.

b. The Applicant shall substantiate the applicable Hydrologic Condition of Concerns (HCOC) in Section F of the F-WQMP. The HCOC designates that the project will be exempt from mitigation requirements based on Exemption 3.

c. All proposed LID BMP's shall be designed in accordance with the RCFC&WCD's Design Handbook for Low Impact Development Best Management Practices, dated September 2011.

d. The proposed LID BMP's as identified in the project-specific P-WQMP shall be incorporated into the Final WQMP.

e. The NPDES notes per City Standard Drawing No. MVFE-350-0 shall be included in the grading plans.

f. Post-construction treatment control BMPs, once placed into operation for post-construction water quality control, shall not be used to treat runoff from construction sites or unstabilized areas of the site.

g. Prior to precise grading plan approval, the grading plan shall show any proposed trash enclosure to include a cover (roof) and sufficient size for dual bin (1 for trash and 1 for recyclables). The architecture shall be approved by the Planning Division and any structural approvals shall be made by the Building and Safety Division.

79. The developer shall ensure compliance with the City Grading ordinance, these Conditions of Approval and the following criteria:

a. The project street and lot grading shall be designed in a manner that perpetuates the existing natural drainage patterns with respect to tributary drainage area and outlet points. Unless otherwise approved by the City Engineer, lot lines shall be located at the top of slopes.

b. Any grading that creates cut or fill slopes adjacent to the street shall provide erosion control, sight distance control, and slope easements as approved by the City Engineer.

c. All improvement plans are substantially complete and appropriate clearance letters are provided to the City.

d. A soils/geotechnical report (addressing the soil's stability and geological

conditions of the site) shall be submitted to the Land Development Division for review. A digital (pdf) copy of the soils/geotechnical report shall be submitted to the Land Development Division.

80. Grading plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

81. The developer shall select Low Impact Development (LID) Best Management Practices (BMPs) designed per the latest version of the Water Quality Management Plan (WQMP) - a guidance document for the Santa Ana region of Riverside County.

82. The developer shall pay all remaining plan check fees.

83. Prior to precise grading plan approval, existing brow ditches outletting to John F. Kennedy Drive shall be removed and reconstructed to direct runoff to parkway culverts per MVSI-150A-0

84. 100. Prior to precise grading plan approval, the plans shall show all driveway approaches to be constructed per City Standard Plan MVSI-112C-O.

a. The driveways shall have a minimum radius of 12 feet and transition from an 8 inch curb height to a 0 inch curb height at the ultimate right-of-way behind the curb line, or as approved by the City Engineer.

b. There shall be 4-foot wide pedestrian sidewalk area at 1.5% maximum grade behind the ultimate right-of-way.

Prior to Grading Permit

85. A receipt showing payment of the Area Drainage Plan (ADP) fee to Riverside County Flood Control and Water Conservation District shall be submitted. [MC 9.14.100(O)]

86. If the developer chooses to construct the project in phases, a Construction Phasing Plan for the construction of on-site public or private improvements shall be submitted for review and approved by the City Engineer.

87. A digital (pdf) copy of all approved grading plans shall be submitted to the Land Development Division.

88. Security, in the form of a cash deposit (preferable), bond or letter of credit shall be submitted as a guarantee of the implementation and maintenance of erosion control measures. At least twenty-five (25) percent of the required security shall be in the form of a cash deposit with the City. [MC 8.21.160(H)]

89. Security, in the form of a cash deposit (preferable), bond or letter of credit shall be submitted as a guarantee of the completion of the grading operations for the project. [MC 8.21.070]

90. The developer shall pay all applicable inspection fees.

91. For non-subdivision projects, a copy of the Covenants, Conditions and Restrictions (CC&Rs) shall be submitted for review by the City Engineer. The CC&Rs shall include, but not be limited to, access easements, reciprocal access, private and/or public utility easements. This includes off-site easements for water quality basin(s), drainage, slopes, and grading as may be relevant to the project.

Prior to Improvement Plan Approval

92. All public improvement plans (prepared by a licensed/registered civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

93. The plans shall indicate any restrictions on trench repair pavement cuts to reflect the City's moratorium on disturbing newly-constructed pavement less than three (3) years old and recently slurry sealed streets less than one (1) year old. Pavement cuts may be allowed for emergency repairs or as specifically approved in writing by the City Engineer. Special requirements shall be imposed for repaving, limits to be determined by the City Engineer.

Prior to Encroachment Permit

94. A digital (pdf) copy of all approved improvement plans shall be submitted to the Land Development Division.

95. All applicable inspection fees shall be paid.

96. The plans shall indicate any restrictions on trench repair pavement cuts to reflect the City's moratorium on disturbing newly-constructed pavement less than three (3) years old and recently slurry sealed streets less than one (1) year old. Pavement cuts may be allowed for emergency repairs or as specifically approved in writing by the City Engineer. Special requirements shall be imposed for repaving, limits to be determined by the City Engineer.

97. Any work performed within public right-of-way requires an encroachment permit.

Prior to Building Permit

98. An engineered-fill certification, rough grade certification and compaction report shall be submitted for review and approved by the City Engineer. A digital (pdf) copy of the approved compaction report shall be submitted to the Land Development Division. All pads shall meet pad elevations per approved grading plans as noted by the setting of "blue-top" markers installed by a registered land surveyor or licensed civil engineer.

99. For all subdivision projects, the map shall be recorded (excluding model homes). [MC 9.14.190]

100. A walk through with a Land Development Inspector shall be scheduled to inspect existing improvements within public right of way along project frontage. Any missing, damaged or substandard improvements including ADA access ramps that do not meet current City standards shall be required to be installed, replaced and/or repaired. The applicant may be required to post security to cover the cost of the repairs and complete the repairs within the time allowed in the public improvement agreement used to secure the improvements.

101. Certification to the line, grade, flow test and system invert elevations for the water quality control BMPs shall be submitted for review and approved by the City Engineer (excluding models homes).

Prior to Occupancy

102. All outstanding fees shall be paid.

103. All required as-built plans (prepared by a registered/licensed civil engineer) shall be submitted for review and approved by the City Engineer per the current submittal requirements.

104. The final/precise grade certification shall be submitted for review and approved by the City Engineer.

105. For commercial, industrial and multi-family projects, in compliance with Proposition 218, the developer shall agree to approve the City of Moreno Valley NPDES Regulatory Rate Schedule that is in place at the time of certificate of occupancy issuance. Under the current permit for storm water activities required as part of the National Pollutant Discharge Elimination System (NPDES) as mandated by the Federal Clean Water Act, this project is subject to the following requirements:

a. Select one of the following options to meet the financial responsibility to provide storm water utilities services for the required continuous operation, maintenance, monitoring system evaluations and enhancements, remediation and/or replacement, all in accordance with Resolution No. 2002-46.

i. Participate in the mail ballot proceeding in compliance with Proposition

218, for the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule and pay all associated costs with the ballot process; or

ii. Establish an endowment to cover future City costs as specified in the Common Interest, Commercial, Industrial and Quasi-Public Use NPDES Regulatory Rate Schedule.

b. Notify the Special Districts Division of the intent to request building permits 90 days prior to their issuance and the financial option selected. The financial option selected shall be in place prior to the issuance of certificate of occupancy. [California Government Code & Municipal Code]

106. The developer shall complete all public improvements in conformance with current City standards, except as noted in the Special Conditions, including but not limited to the following:

a. Street improvements including, but not limited to: pavement, base, curb and/or gutter, cross gutters, spandrel, sidewalks, drive approaches, pedestrian ramps, street lights (<MVU: SL-2 / SCE: LS-2>), signing, striping, under sidewalk drains, landscaping and irrigation, medians, pavement tapers/transitions and traffic control devices as appropriate.

b. Storm drain facilities including, but not limited to: storm drain pipe, storm drain laterals, open channels, catch basins and local depressions.

c. City-owned utilities.

d. Sewer and water systems including, but not limited to: sanitary sewer, potable water and recycled water.

e. Under grounding of all existing and proposed utilities adjacent to and on-site. [MC 9.14.130]

f. Relocation of overhead electrical utility lines including, but not limited to: electrical, cable and telephone.

107. For commercial, industrial and multi-family projects, a “Stormwater Treatment Device and Control Measure Access and Maintenance Covenant” shall be recorded to provide public notice of the maintenance requirements to be implemented per the approved final project-specific WQMP. A boilerplate copy of the covenants and agreements can be obtained by contacting the Land Development Division.

108. The applicant shall ensure the following, pursuant to Section XII. I. of the 2010 NPDES Permit:

a. Field verification that structural Site Design, Source Control and Treatment Control BMPs are designed, constructed and functional in accordance with the approved Final Water Quality Management Plan (WQMP).

b. Certification of best management practices (BMPs) from a state licensed civil engineer. An original WQMP BMP Certification shall be submitted for review and approved by the City Engineer.

109. The Developer shall comply with the following water quality related items:

a. Notify the Land Development Division prior to construction and installation of all structural BMPs so that an inspection can be performed.

b. Demonstrate that all structural BMPs described in the approved final project-specific WQMP have been constructed and installed in conformance with the approved plans and specifications;

c. Demonstrate that Developer is prepared to implement all non-structural BMPs described in the approved final project-specific WQMP; and

d. Demonstrate that an adequate number of copies of the approved final project-specific WQMP are available for future owners/occupants.

e. Clean and repair the water quality BMP's, including re-grading to approved civil drawing if necessary.

f. Obtain approval and complete installation of the irrigation and landscaping.

Special Districts Division

110. This project is conditioned for a proposed district to provide a funding source for the operation and maintenance of public improvements and/or services associated with new development in that territory. The Developer shall satisfy this condition with one of the options outlined below.

a. Participate in a special election for maintenance/services and pay all associated costs of the election process and formation, if any. Financing may be structured through a Community Facilities District, Landscape and Lighting Maintenance District, or other financing structure as determined by the City; or

b. Establish an endowment fund to cover the future maintenance and/or service costs.

The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the district has been or is in the process of being formed the Developer must inform the Special Districts Division of its selected financing option (a. or b. above). The option for participating in a special election requires 90 days to complete the special election process. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution.

The financial option selected shall be in place prior to the issuance of the first certificate of occupancy for the project.

111. Commercial (BP) If Land Development, a Division of the Public Works Department, requires this project to supply a funding source necessary to provide for, but not

limited to, stormwater utilities services for the continuous operation, remediation and/or replacement, monitoring, systems evaluations and enhancement of on-site facilities and performing annual inspections of the affected areas to ensure compliance with state mandated stormwater regulations, a funding source needs to be established. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org of its selected financial option for the National Pollution Discharge Elimination System (NPDES) program when submitting the application for the first building permit issuance (see Land Development's related condition). Participating in a special election the process requires a 90 day period prior to the City's issuance of a building permit. This allows adequate time to be in compliance with the provisions of Article 13D of the California Constitution. (California Health and Safety Code Sections 5473 through 5473.8 (Ord. 708 Section 3.1, 2006) & City of Moreno Valley Municipal Code Title 3, Section 3.50.050.)

112. This project has been identified to be included in the formation of a Community Facilities District (Mello-Roos) for Public Safety services, including but not limited to Police, Fire Protection, Paramedic Services, Park Rangers, and Animal Control services. The property owner(s) shall not protest the formation; however, they retain the right to object to the rate and method of maximum special tax. In compliance with Proposition 218, the property owner shall agree to approve the mail ballot proceeding (special election) for either formation of the CFD or annexation into an existing district. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting the application for building permit issuance to determine the requirement for participation. If the first building permit is pulled prior to formation of the district, this condition will not apply. If the condition applies, the special election will require a minimum of 90 days prior to issuance of the first building permit. This allows adequate time to be in compliance with the provisions of Article 13C of the California Constitution. (California Government Code Section 53313 et. seq.)

113. The ongoing maintenance of any landscaping required to be installed behind the curb shall be the responsibility of the property owner.

114. Any damage to existing landscape areas maintained by the City of Moreno Valley due to project construction shall be repaired/replaced by the Developer, or Developer's successors in interest, at no cost to the City of Moreno Valley.

115. MAJOR INFRASTRUCTURE FINANCING DISTRICT. This project has been identified to potentially be included in the formation of a special financing district for the construction and maintenance of major infrastructure improvements which may include but are not limited to thoroughfares, bridges, and certain flood control improvements. The property owner(s) shall participate in such district and pay any special tax, assessment, or fee levied upon the project property for such district. At

the time of the public hearing to consider formation of or annexation into the district, the qualified elector(s) will not protest the formation or annexation, but will retain the right to object to any eventual tax/assessment/fee that is not equitable should the financial burden of the tax/assessment/fee not be reasonably proportionate to the benefit the affected property obtains from the improvements to be installed and/or maintained. The Developer must notify the Special Districts Division at 951.413.3480 or at specialdistricts@moval.org when submitting an application for the first building permit to determine whether the development will be subjected to this condition. If subject to the condition, the special election requires a minimum 90-day process in compliance with the provisions of Article 13C of the California Constitution.

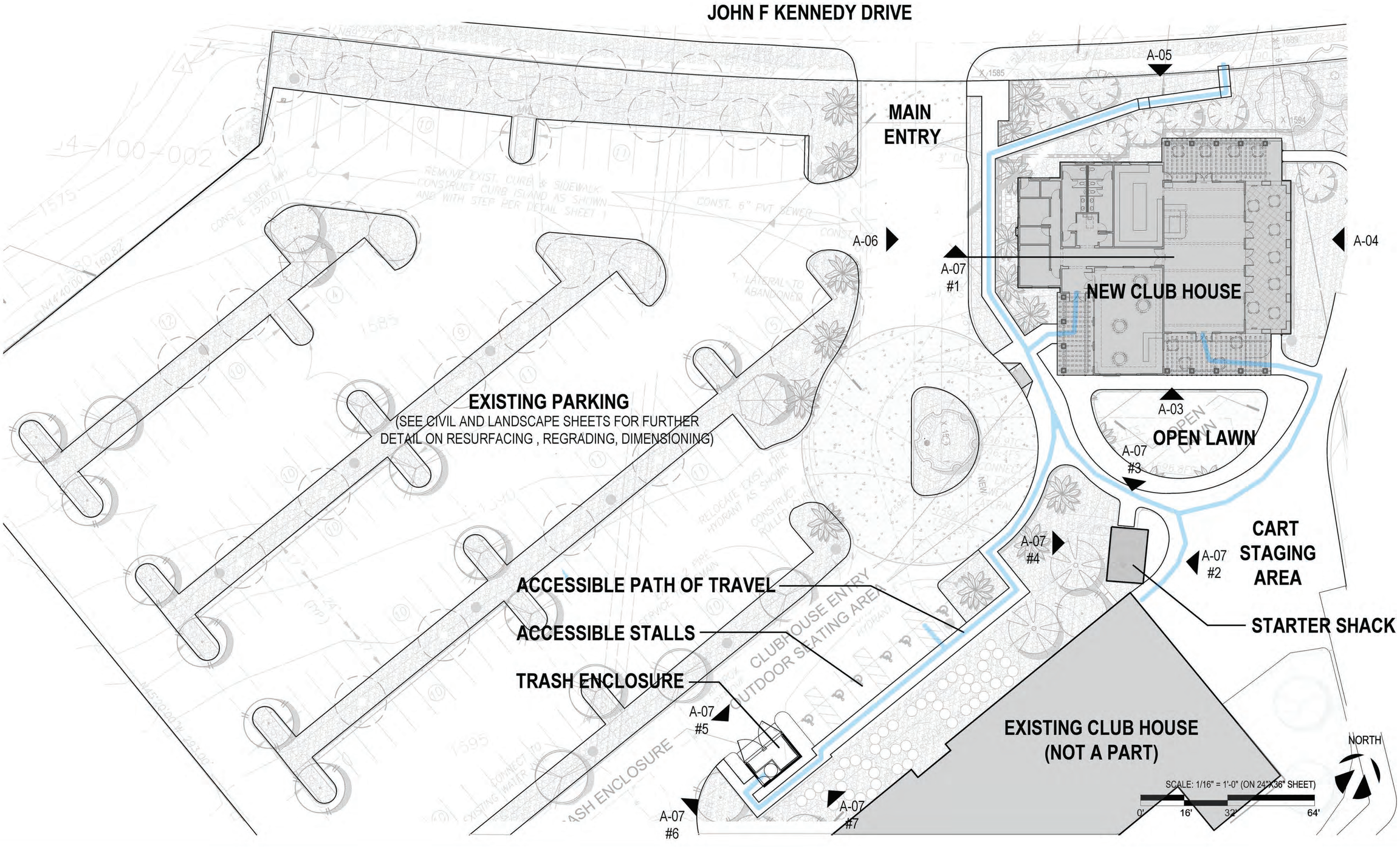
116. The parcels associated with this project are located within the boundaries of Zone 04 of Moreno Valley Community Services District Landscape Maintenance District 2014-02 and subject to assessment in connection therewith. An annual assessment is levied in connection with Zone 04 to fund landscape maintenance services associated with parkway and median landscaping. The existing parcel associated with this project is currently classified by the assessment administrator as land use classification "exempt." When preparing the assessment roll for a given fiscal year, the assessment administrator calculates the assessment against each parcel in Zone 04 based upon its actual land use as of the March 1st prior to that fiscal year. The parcels associated with this project will be classified as "Developed Non-Residential" or "Undeveloped/Vacant Property" (as appropriate) for assessment purposes unless and until improved. Once improved, they will be classified based on actual use as set forth in the Engineer's Report for the assessment district. Property owner will execute a document acknowledging the property will no longer be exempt from the Zone 04 assessment.

117. The parcel(s) associated with this project have been incorporated into the Moreno Valley Community Services District Zone A (Parks & Community Services) and Zone C (Arterial Street Lighting). All assessable parcels therein shall be subject to annual parcel taxes for Zone A and Zone C for operations and capital improvements.

Transportation Engineering Division

118. All project driveways shall conform to Section 9.11.080, and Table 9.11.080-14 of the City's Development Code – Design Guidelines and City of Moreno Valley Standard Plans No. MVSI-112A~D-0 for commercial driveway approaches.

119. Prior to final approval of any landscaping or monument sign plans, the project plans shall demonstrate that sight distance at the project driveways conforms to City Standard Plan No. MVSI-164A, B, C-0.



DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

REFERENCE PLAN / SITE CONTEXT
August 28, 2020

A-00

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

OCCUPANCY DATA

CLUBHOUSE

FLOOR / ROOM	OCCUPANCY CLASSIFICATION CBC CHAPTER 3	SQ FT/ ROOM	OCCUPANT LOAD FACTOR PER TABLE 1004.1	OCCUPANT LOAD PER ROOM
GOLF SHOP	M	1000 SQ FT	60	1000/60 = 17
RESTAURANT AREA	A2	1600 SQ FT	15	1600/15 = 107
PREP KITCHEN	A2	500 SQ FT	200	500/200 = 3
OFFICE	B	100 SQ FT	150	100/150 = 1
MANAGER'S OFFICE	B	180 SQ FT	150	180/150 = 1
STORAGE	B M	70 SQ FT	300	180/300 = 1
COVERED VERANDA	A2	850 SQ FT	15	850/15 = 57
JANITOR ROOM	U	25 SQ FT	300	25/300 = 1
MECH. ROOM	U	50 SQ FT	300	50/300 = 1
FIRE RISER. ROOM	U	50 SQ FT	300	50/300 = 1

PLUMBING FIXTURE CALCULATIONS

CLUBHOUSE REQUIRED FIXTURES:

OCCUPANT LOAD: 190 OCC /2 = 95 (95 WOMEN , 95 MEN)

REQUIRED FIXTURES PER PLUMBING CODE 2016: TABLE 422.1 GROUP A2

	WATER CLOSET	URINAL	LAVATORIES	DRINKING FOUNTAIN
WOMEN	3	-	1	1 PER FLOOR
MEN	2	1	1	

FIXTURES PROVIDED:

WOMEN	3	-	2	1 PER FLOOR
MEN	2	1	2	

BUILDING CODE SUMMARY

OCCUPANCY CLASSIFICATION:
CLUBHOUSE A2

CONSTRUCTION TYPE:
TYPE VB

FIRE PROTECTION SYSTEM:
PER CBC 1007.2.1, EXCEPTION 1:
IN BUILDINGS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1 OR 903.3.1.2, THE ELEVATOR SHALL NOT BE REQUIRED ON FLOORS PROVIDED WITH A HORIZONTAL EXIT AND LOCATED AT OR ABOVE THE LEVEL OF EXIT DISCHARGE.

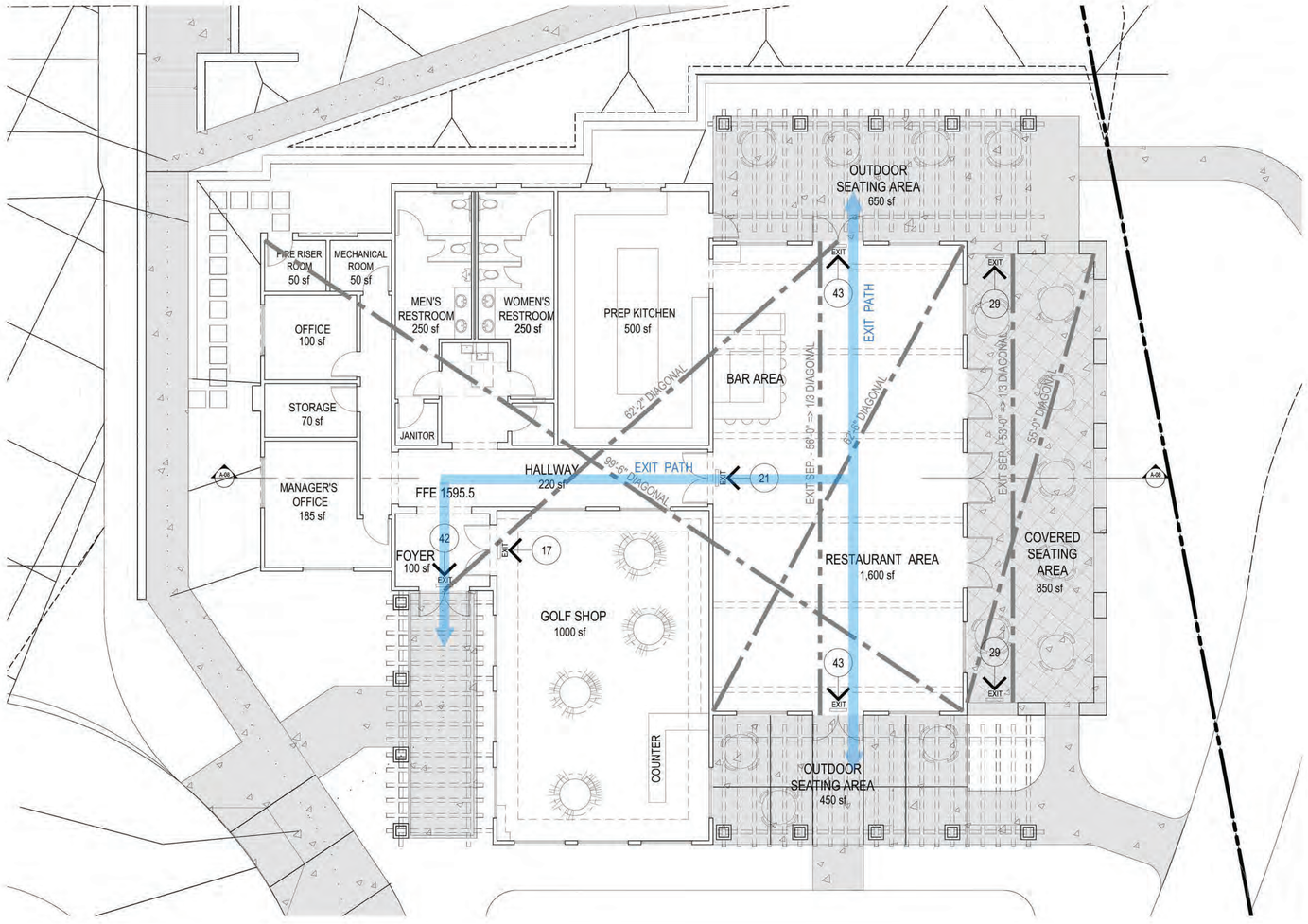
SITE PARKING TABULATIONS

PARKING CALCULATION

PARKING REQUIRED:
18 HOLES X 6 STALLS/EA. = 108 STALLS
3,550 RESTAURANT SPACE @ 10 PER 1000 SF = 36 STALLS
TOTAL PARKING REQUIRED: 144 STALLS

PARKING PROVIDED:
153 STANDARD + 6 ADA STALLS
TOTAL PARKING PROVIDED: 153 STALLS

FOR PARKING LAYOUT REFER TO SHEET LP 02



BUILDING AREA SUMMARY

CLUBHOUSE AREA:

GROSS = 5,000 SF
GROSS WITH COVERED AREA = 5,850 SF
GROSS WITH OUTDOOR AREA = 6,100 SF

LEGEND

DIAGONAL OF AREA SERVED

EXIT SEPARATION > 1/3 OF DIAGONAL

TRAVEL DISTANCE (T.D.)

ILLUMINATED EXIT SIGN (SEE ELECT PLANS)
SHADING DENOTES LOCATION OF VIEWER
ARROW DENOTES DIRECTION OF EXIT
SEE EGRESS PLANS FOR LOCATIONS OF ALL EXIT SIGNS

VISUAL & TACTILE EXIT AND OCCUPANCY SIGNS
(SEE DETAILS SHEET A1.02)
EXIT

EXITING OCCUPANT LOAD
XX

NORTH

SCALE: 1/8" = 1'-0" (ON 24"X36" SHEET)
0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

SITE PLAN AND CLUBHOUSE FLOOR PLAN
August 28, 2020

A-01

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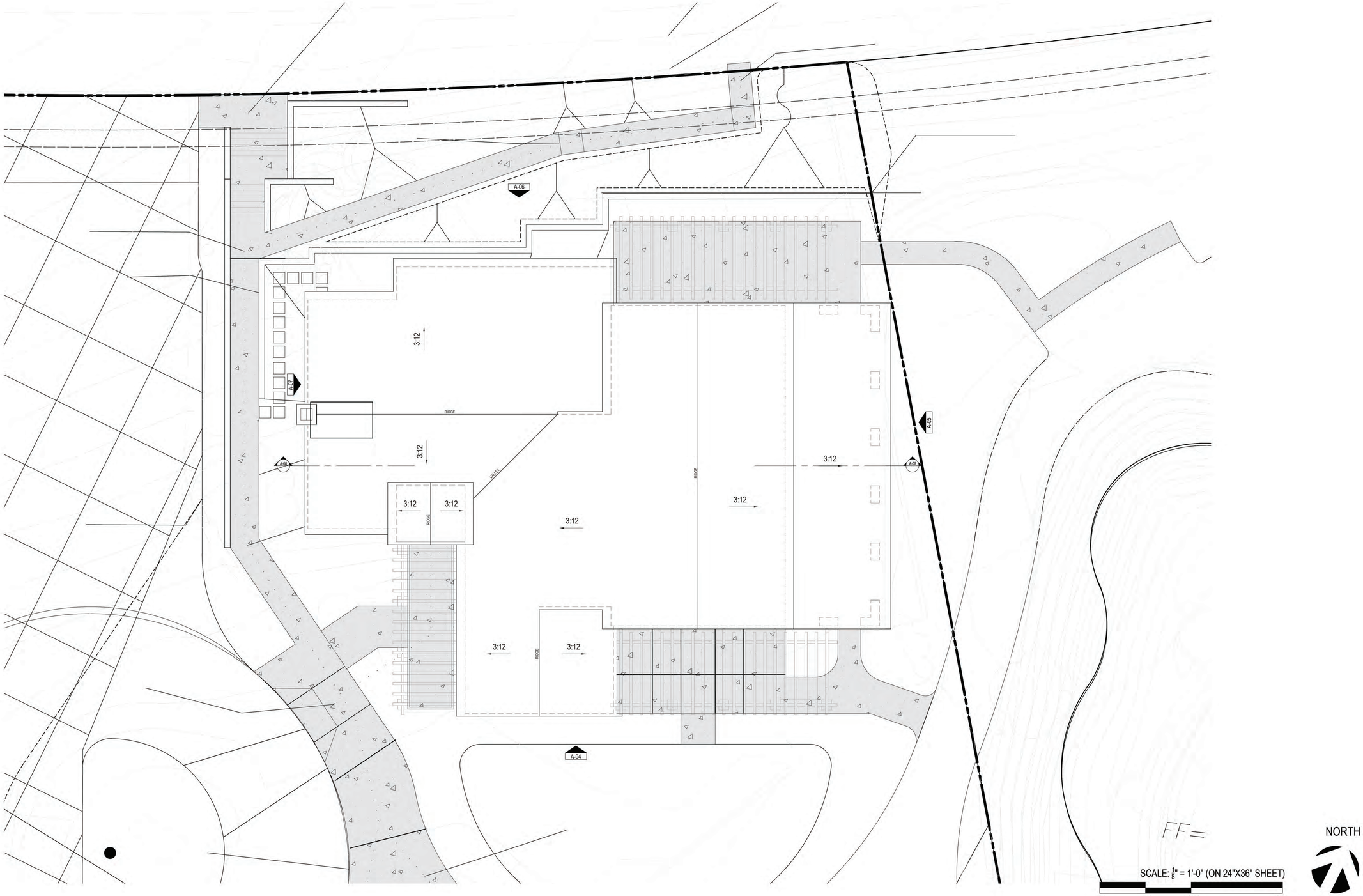
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com



DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - ROOF PLAN
August 28, 2020

A-02

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5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

SCALE: $\frac{1}{8}$" = 1'-0" (ON 24"X36" SHEET)

0' 8' 16' 32'

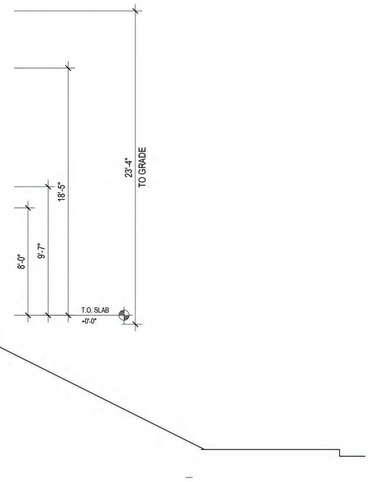
DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - SOUTH ELEVATION
August 28, 2020

A-03

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com



SCALE: $\frac{1}{8}$" = 1'-0" (ON 24"X36" SHEET)

0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - EAST ELEVATION
August 28, 2020

A-04

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5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

SCALE: 1/8" = 1'-0" (ON 24"X36" SHEET)

0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - NORTH ELEVATION
August 28, 2020

A-05

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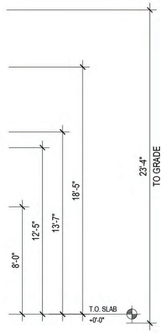

SCALE: $\frac{1}{8}$" = 1'-0" (ON 24"X36" SHEET)

0' 8' 16' 32'

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE - WEST ELEVATION
August 28, 2020

A-06

HUMPHREYS & PARTNERS ARCHITECTS, L.P.
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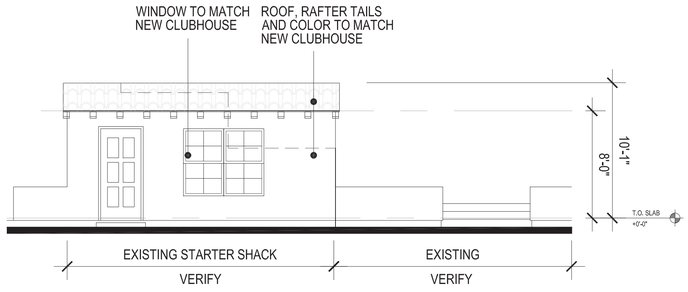
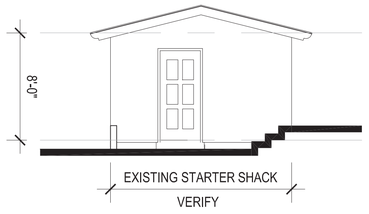
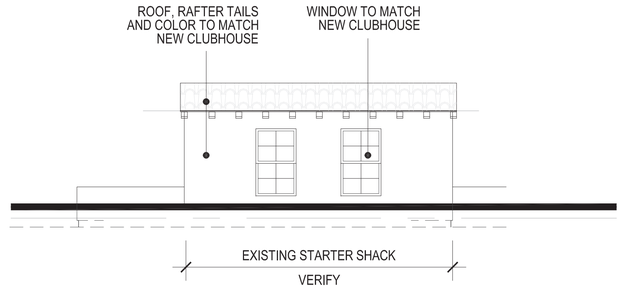
1. CLUB HOUSE SECTION



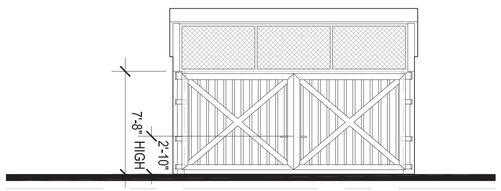
2. EAST STARTER SHACK ELEVATION



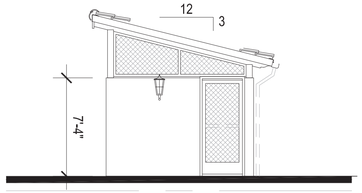
3. NORTH STARTER SHACK ELEVATION



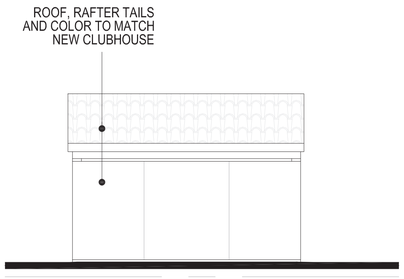
4. WEST STARTER SHACK ELEVATION



5. NORTH TRASH ENCLOSURE ELEVATION



6. WEST TRASH ENCLOSURE ELEVATION



7. SOUTH TRASH ENCLOSURE ELEVATION

0' 4' 8' 16'

SCALE: 3/16" = 1'-0" (ON 24"X36" SHEET)

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT GROUP HOLDINGS

CLUBHOUSE, STARTER SHACK, TRASH ENCLOSURE
August 28, 2020

A-07

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TEAL 6x6

BLUE 6x6

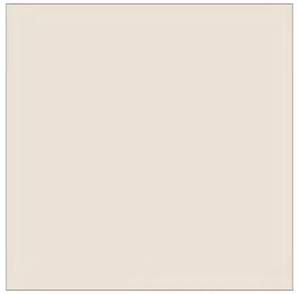
GREEN 6x6

DECORATIVE 6x6

DECORATIVE 6x6

DECORATIVE 6x6

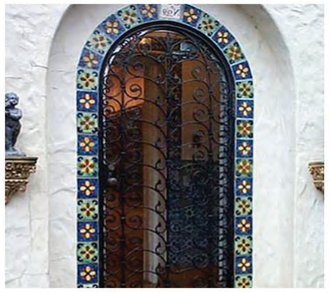
1. TILED ARCHED ENTRY

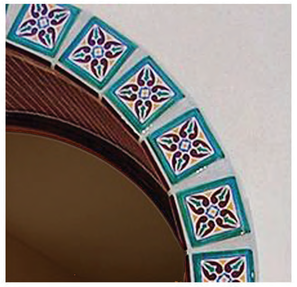


2. DUNN EDWARD
DEW383
COOL DECEMBER
STUCCO FINISH
20/30 SAND FINISH

3. DUNN EDWARD
DE6399
MOLASSES
STUCCO FINISH
20/30 SAND FINISH

4. EAGLE ROOFING
CAPRISTANO
3636
SUNRISE BLEND





BY ARIZONA TILE

DEL SOL GOLF CLUBHOUSE
MORENO VALLEY, CA
HPA# 2019536

BRIDGE INVESTMENT
GROUP HOLDINGS

CLUBHOUSE - COLORS & MATERIALS BOARD
August 28, 2020

A-08

HUMPHREYS & **PARTNERS** ARCHITECTS, L.P.
5339 Alpha Rd., Suite 300, Dallas, TX 75240 | 972.701.9636 | www.humphreys.com

IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA

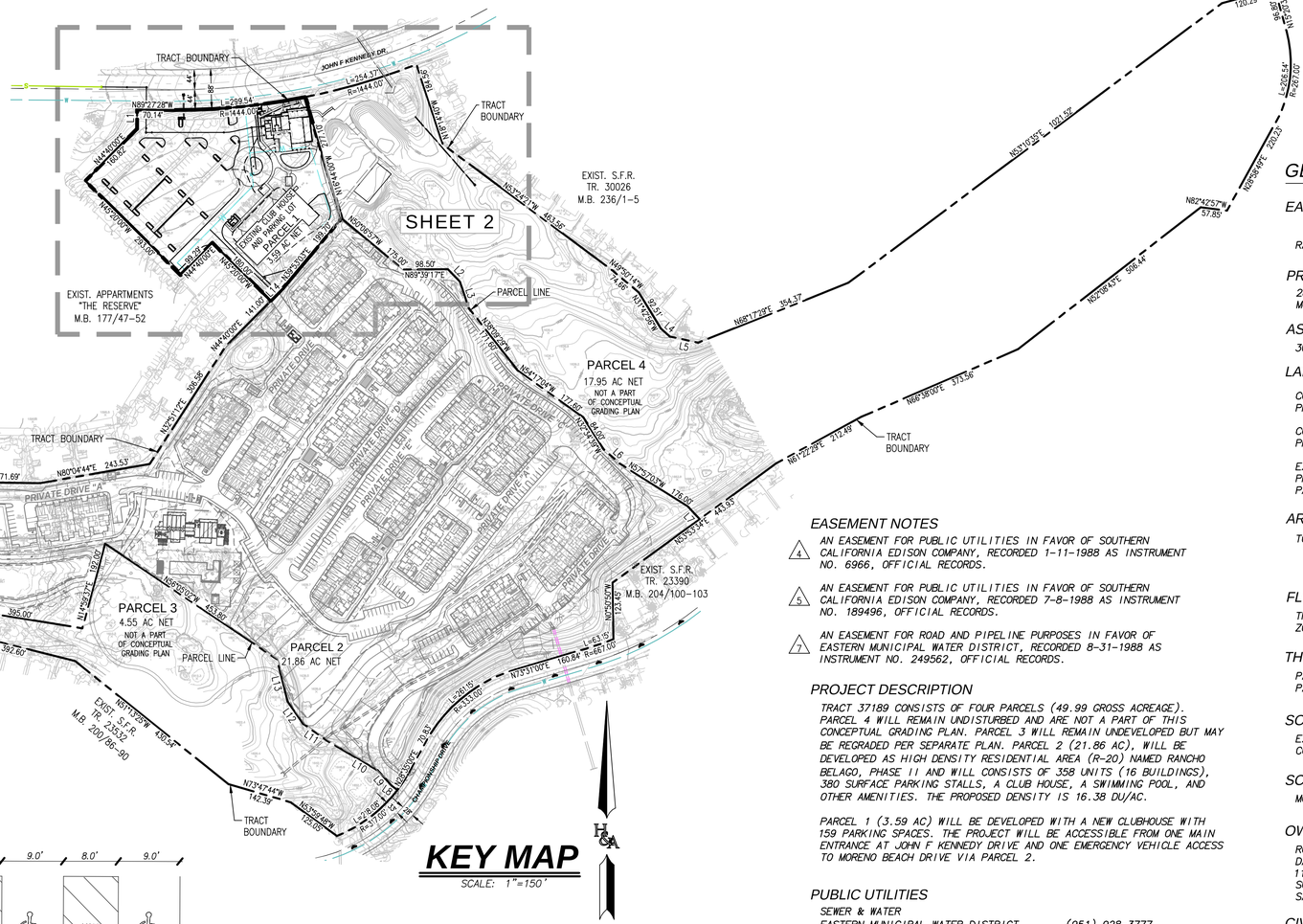
SITE PLAN AND PRELIMINARY GRADING PLAN
DEL SOL CLUBHOUSE

LEGAL DESCRIPTION

PARCEL A AS SHOWN ON LOT LINE ADJUSTMENT NO. 861, AS EVIDENCED BY DOCUMENT RECORDED JANUARY 09, 1995 AS INSTRUMENT NO. 95-6042 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: LOTS 11 AND 12 OF TRACT NO. 22552, IN THE CITY OF MORENO VALLEY, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN MAP BOOK 177, PAGES 47 THROUGH 52, INCLUSIVE, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA. EXCEPTING THEREFROM THAT PORTION OF SAID LOT 12 AS SHOWN ON LOT LINE ADJUSTMENT NO. 768, CITY OF MORENO VALLEY, APPROVED AUGUST 01, 1988, SAID PARCEL ALSO DESCRIBED IN DEED RECORDED SEPTEMBER 21, 1988 AS INSTRUMENT NO. 273090, OF OFFICIAL RECORDS; SAID PARCEL ALSO SHOWN ON TRACT 23693-1 AS SHOWN BY MAP ON FILE IN MAP BOOK 236, PAGES 1 THROUGH 5, INCLUSIVE, RECORDS OF RIVERSIDE COUNTY, DESCRIBED AS FOLLOWS:
BEGINNING AT THE MOST SOUTHERLY CORNER OF LOT 13 OF TRACT 22552 AS SHOWN ON SAID MAP;
THENCE NORTH 77° 46' 33" WEST A DISTANCE OF 63.48 FEET;
THENCE NORTH 35° 12' 14" WEST A DISTANCE OF 117.73 FEET TO A POINT FROM WHICH THE MOST SOUTHERLY CORNER OF SAID LOT 13 BEARS SOUTH 49° 50' 14" EAST A DISTANCE OF 170.00 FEET; SAID POINT BEING ON THE COMMON LOT LINE BETWEEN SAID LOT 12 AND SAID LOT 13;
THENCE SOUTH 49° 50' 14" EAST ALONG SAID COMMON LOT LINE 170.00 FEET TO THE POINT OF BEGINNING.
ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LOT 11 LYING SOUTHWESTERLY OF THE LINE AS SHOWN ON LOT LINE ADJUSTMENT NO. 772, CITY OF MORENO VALLEY APPROVED SEPTEMBER 14, 1988, ALSO DESCRIBED IN DEED RECORDED SEPTEMBER 19, 1988 AS INSTRUMENT NO. 269801, DESCRIBED AS FOLLOWS:
BEGINNING AT THE MOST EASTERLY CORNER OF SAID LOT 11;
THENCE SOUTH 44° 40' 00" WEST ALONG THE SOUTHEASTERLY LINE OF SAID LOT 11 A DISTANCE OF 234.00 FEET TO THE TRUE POINT OF BEGINNING;
THENCE NORTH 45° 20' 00" WEST A DISTANCE OF 180.00 FEET;
THENCE SOUTH 44° 40' 00" WEST A DISTANCE OF 99.29 FEET;
THENCE NORTH 45° 20' 00" WEST A DISTANCE OF 293.00 FEET;
THENCE NORTH 44° 40' 00" EAST A DISTANCE OF 160.82 FEET;
THENCE NORTH 00° 32' 34" EAST A DISTANCE OF 41.95 FEET TO THE NORTHERLY LINE OF SAID LOT 11.
ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LOT 12 LYING NORTHEASTERLY OF THE FOLLOWING DESCRIBED LINE: BEGINNING AT THE MOST WESTERLY CORNER OF TRACT 23693-1, AS PER MAP RECORDED IN BOOK 236 OF MAPS, PAGES 1 THROUGH 5, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY,
THENCE SOUTH 31° 42' 58" EAST A DISTANCE OF 92.51 FEET;
THENCE SOUTH 47° 41' 58" EAST A DISTANCE OF 26.01 FEET TO AN ANGLE POINT IN THE SOUTHEASTERLY LINE OF SAID TRACT 23693-1, SAID ANGLE POINT BEING NORTH 77° 46' 33" WEST A DISTANCE OF 63.48 FEET FROM THE MOST SOUTHERN CORNER OF SAID TRACT 23693-1.
ALSO EXCEPTING THEREFROM ALL OIL, GAS, PETROLEUM, HYDROCARBON SUBSTANCES AND OTHER MINERALS WITHIN OR UNDERLYING SAID LAND BUT WITHOUT RIGHT OF SURFACE ENTRY UPON THE SURFACE OF SAID LAND OR SUBSURFACE THEREOF TO A DEPTH OF 500.00 FEET TO REMOVE OR EXACT THE SAME, AS RESERVED BY TRUST DATED FEBRUARY 23, 1965 (TI TRUST NO. 71-5449-005) IN DEED RECORDED NOVEMBER 22, 1983, AS INSTRUMENT NO. 242971 OF OFFICIAL RECORDS.

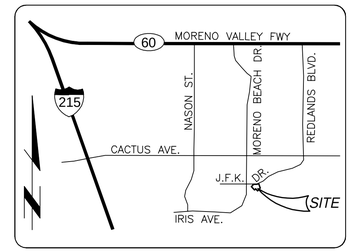
LEGEND

- PROPERTY LINE
- EXISTING SEWER & MH
- EXISTING WATER
- EXISTING 48" RCP
- PROPOSED SEWER & MH
- PROPOSED SEWER LATERAL
- PROPOSED WATER AND FH
- PROPOSED WATER LATERAL
- FLOWLINE
- DAYLIGHT LINE
- CENTERLINE
- PROPOSED RETAINING WALL
- PROPOSED STORM DRAIN & INLET
- PROPOSED HEADWALL & RIPRAP (ENERGY DISSIPATER)
- PROPOSED CART PATH
- PROPOSED BROW DITCH
- PROPOSED LANDING
- PROPOSED BYPASS STORM DRAIN
- PROPOSED CROSSWALK
- PROPOSED CONCRETE SIDEWALK
- PERMEABLE PAVERS
- PROPOSED CUT/FILL SLOPE (2:1)
- PROPOSED TRASH ENCLOSURE (TRASH)
- ACCESSIBLE PATH



KEY MAP

SCALE: 1"=150'



VICINITY MAP

NOT TO SCALE

GENERAL NOTES

EARTHWORK ESTIMATE

	EXCAVATION	EMBANKMENT
RAW CUT	3,500 CY	3,500 CY

PROJECT ADDRESS

28095 JOHN F KENNEDY DRIVE,
MORENO VALLEY, CA 92555

ASSESOR'S PARCEL NUMBER

304-100-007

LAND USE AND ZONING

CURRENT GENERAL PLAN	SP 193
PROPOSED GENERAL PLAN	SP 193
CURRENT ZONING	SP 193 OS
PROPOSED ZONING	SP 193 OS
EXISTING LAND USE	OS
PROPOSED LAND USE: PARCEL 1	OS

AREA AND DENSITY

TOTAL:
GROSS ACREAGE: 3.59 ACRES
NET ACREAGE: 3.59 ACRES

FLOOD HAZARD

THE SUBJECT TRACT IS NOT WITHIN THE 500 YEAR FLOOD PLAIN, ZONE X. FEMA FLOOD INSURANCE PANEL NO. 06065C0770G.

THOMAS BROTHERS GUIDE

PAGE 718 D-7, E-7, AND
PAGE 748 D-1, E-1 2006 EDITION

SOURCE OF TOPOGRAPHY

EXISTING TOPOGRAPHY WAS OBTAINED FROM AERIAL SURVEY CONDUCTED BY R.J. LUNG, INC. DATE OF PHOTOGRAPHY 10-04-2019.

SCHOOL

MORENO VALLEY UNIFIED SCHOOL DISTRICT

OWNER/SUBDIVIDER

ROCIII CA BELAGO, LLC
DAVID ARTEAGA
111 EAST SEGO LILY DRIVE
SUITE 408
SALT LAKE CITY, UTAH 84070

CIVIL ENGINEER

HUNSAKER & ASSOCIATES, SAN DIEGO,
INC 9707 WAPLES ST.
SAN DIEGO, CA 92121
(858) 558-4500

EASEMENT NOTES

4 AN EASEMENT FOR PUBLIC UTILITIES IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED 1-11-1988 AS INSTRUMENT NO. 6966, OFFICIAL RECORDS.

5 AN EASEMENT FOR PUBLIC UTILITIES IN FAVOR OF SOUTHERN CALIFORNIA EDISON COMPANY, RECORDED 7-8-1988 AS INSTRUMENT NO. 189496, OFFICIAL RECORDS.

7 AN EASEMENT FOR ROAD AND PIPELINE PURPOSES IN FAVOR OF EASTERN MUNICIPAL WATER DISTRICT, RECORDED 8-31-1988 AS INSTRUMENT NO. 249562, OFFICIAL RECORDS.

PROJECT DESCRIPTION

TRACT 37189 CONSISTS OF FOUR PARCELS (49.99 GROSS ACREAGE). PARCEL 4 WILL REMAIN UNDISTURBED AND ARE NOT A PART OF THIS CONCEPTUAL GRADING PLAN. PARCEL 3 WILL REMAIN UNDEVELOPED BUT MAY BE REGRADED PER SEPARATE PLAN. PARCEL 2 (21.86 AC), WILL BE DEVELOPED AS HIGH DENSITY RESIDENTIAL AREA (R-20) NAMED RANCHO BELAGO, PHASE II AND WILL CONSISTS OF 358 UNITS (16 BUILDINGS), 380 SURFACE PARKING STALLS, A CLUB HOUSE, A SWIMMING POOL, AND OTHER AMENITIES. THE PROPOSED DENSITY IS 16.38 DU/AC.

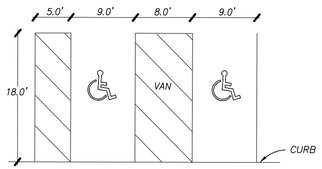
PARCEL 1 (3.59 AC) WILL BE DEVELOPED WITH A NEW CLUBHOUSE WITH 159 PARKING SPACES. THE PROJECT WILL BE ACCESSIBLE FROM ONE MAIN ENTRANCE AT JOHN F KENNEDY DRIVE AND ONE EMERGENCY VEHICLE ACCESS TO MORENO BEACH DRIVE VIA PARCEL 2.

PUBLIC UTILITIES

SEWER & WATER	EASTERN MUNICIPAL WATER DISTRICT 2270 TRUMBLE RD., PERRIS, CA 92572	(951) 928-3777
ELECTRICITY	MORENO VALLEY ELECTRIC UTILITY 14331 FREDERICK ST., SUITE 2 MORENO VALLEY, CA 92553	(951) 413-3500
GAS	SOUTHERN CALIFORNIA GAS COMPANY 4495 HOWARD AVE., RIVERSIDE, CA 91756	(800) 427-2200
TELEPHONE	VERIZON	(951) 748-6656

SHEET INDEX

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	41.96'	N00°32'34"E
L2	38.20'	N44°30'12"W
L3	61.30'	N18°22'46"W
L4	26.05'	N47°38'08"W
L5	63.48'	N77°48'33"W
L6	46.00'	N48°20'36"W
L7	39.00'	N42°51'10"W
L8	15.71'	N52°21'34"W
L9	45.00'	N42°25'16"W
L10	128.00'	N59°39'12"W
L11	65.00'	N54°40'15"W
L12	60.00'	N35°05'24"W
L13	95.00'	N13°56'30"W
L14	38.01'	N44°40'03"E



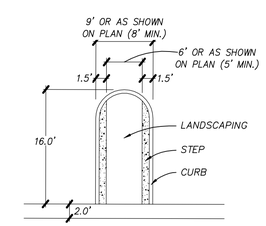
ACCESSIBLE PARKING DETAIL

NTS

PARKING SUMMARY

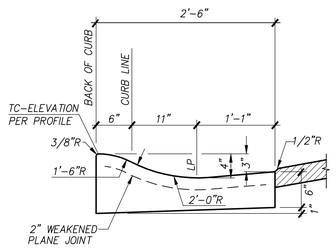
REQUIRED		PROVIDED*	
TYPE	SPACES	TYPE	SPACES
STANDARD	108	STANDARD	153
DISABLED	5	DISABLED	6
TOTAL	113	TOTAL	159

*EXISTING PARKING TO BE RE-STRIPED THROUGHOUT PER FIGURE 9.11.080-6 PER MUNICIPAL CODE.



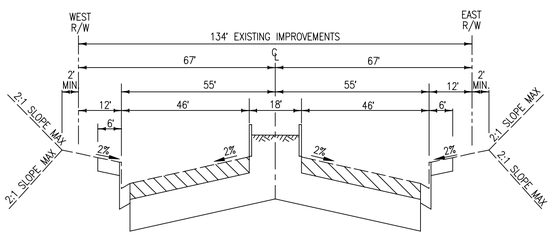
LANDSCAPE ISLAND DETAIL

NTS



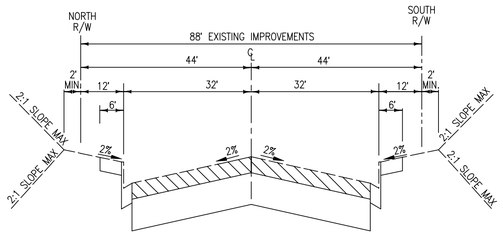
4" MOD. ROLLED CURB

NOT TO SCALE



EXISTING MORENO BEACH BLVD.

TYPICAL SECTION
N.T.S.



EXISTING JOHN F. KENNEDY DRIVE

TYPICAL SECTION
N.T.S.

REGISTERED PROFESSIONAL ENGINEER ALISA S. VIALPANDO R.C.E. 47945 Exp. 12/31/21 CIVIL STATE OF CALIFORNIA

ALISA S. VIALPANDO R.C.E. 47945 DATE
MY REGISTRATION EXPIRES ON 12/31/21

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

NO.	REVISIONS	DATE	BY
1	FIRST SUBMITTAL	04/23/20	H&A
2	SECOND SUBMITTAL	06/22/20	OWNER
3	THIRD SUBMITTAL	08/25/20	OWNER
4	FOURTH SUBMITTAL	01/21/21	OWNER
5			
6			
7			

SITE PLAN AND PRELIMINARY GRADING PLAN
PEN 20-0060 / TPM 37189

DEL SOL CLUBHOUSE

CITY OF MORENO VALLEY, CALIFORNIA

SHEET 1 OF 4

W.O. 3442-0004

R:\1458\&Pln\Studies\Del Sol Design Base\CUP AND PGP\Del Sol PGP Sht 01.dwg[]Jan-28-2021:10:52

JOHN F KENNEDY DRIVE

STEPHENSON STREET

EXISTING SEWER

EXISTING STORM DRAIN

EXISTING WATER

CONSTRUCT 8" SEWER

PROP. 3' SPAN TYPE 1 PARKWAY CULVERT PER MVSI-150A-0

EXISTING CONC BROW DITCH TO BE REMOVED AND REPLACED

R/W

EXISTING WATER LINE CONNECTION

EXIST. NON CONTIGUOUS SIDEWALK

EXISTING 12'X8'-129 LF (PROTECT) RCB STORM DRAIN PER TR 02552, SHEET 8 Q100=246 CFS

EXISTING 12'X8'-129 LF RCB STORM DRAIN PER PM20557-PM21574 AT SHEET 3

R/W 18" CMP FROM TR-22552 PER SHEET 23 AT

EXIST. LANDSCAPED PARKWAY

LANDSCAPE EASEMENT BOOK 177 PAGE 47-52 TR22552

6' SCE UTILITY EASEMENT

R/W

BASIN OUTLET PIPE FL 1586

BIORETENTION BASIN BOTTOM EL 1590.5

10" BASIN OUTLET HDPE PIPE SLOPE 4.7%

BASIN OUTLET PIPE SLOPE 4.7% FL 1579.75

EXISTING CART PATH

NEW 18" RCP TO OUTLET ONTO CONCRETE

10' BASIN INLET HDPE PIPE SLOPE 1%

CART PARKING

EXIST. SEEPAGE PIT TO BE ABANDONED

REMOVE EXIST. CURB & SIDEWALK. CONSTRUCT CURB ISLAND AS SHOWN AND WITH STEP PER DETAIL SHEET 1

CONST. 6" PVT SEWER

CONST. SEWER CLEAN OUT IE 1582.0

EXIST. LATERAL TO BE ABANDONED

5" PRO SERIES CHANNEL DRAIN SYSTEM

CAP & REMOVE EXIST. 8" WATER

EXIST. 12" WATER

FF=1596.5

CART PATH

CONNECT TO EXIST. SEWER LATERAL

STARTER SHACK

CART STAGING

RELOCATE EXIST. FIRE HYDRANT AS SHOWN

CONSTRUCT ROLLED CURB

EXIST. 2 FIRE SERVICE TO REMAIN

CAP & REMOVE EXIST. 8" WATER

APPROX. LIMITS OF SAWCUT AND REMOVE EXIST. AC PAVING

CONST. FIRE HYDRANT

EXISTING GREASE INTERCEPTOR TO REMAIN

SLOPE VARIES 2.5:1-3:1

EXIST. BUILDING N.A.P.

PARCEL 1

EXIST. TRANSFORMER FS1598.0

DEDICATED 24' FIRE ACCESS ROAD

CONNECT TO EXISTING WATER LINE

RELOCATE EXIST. FIRE HYDRANT

CART PATH

TYPE 2 (12-PLEX) FF=1614.2 P=1613.5

TYPE 2 (12-PLEX) FF=1614.9 P=1614.2

TYPE 2 (12-PLEX)

TOPS FORWARD

ACCESS EASEMENT TO DEL SOL REMOVE & RECONSTRUCT EXIST. WALL AS REQUIRED TO CONSTRUCT CURB RETURN

EXIST. FIRE HYDRANT TO REMAIN

DO NOT DISTURB ROCK OUTCROPPING. TEMPORARY 6' SCREENED CHAINLINK FENCE AROUND PERIMETER

TEE BOX HOLE 10

TEE BOX TG 1605.0

PRACTICE PUTTING GREEN FF=1600

EXISTING CART PATH

DRIVING CAGE FF 1606.0

EVENT LAWN

APN 304-100-002

APN 304-100-002

N89°27'28"W 70.14'

N00°32'32"E 4.96'

N44°40'00"E 160.82'

N45°20'00"W 283.00'

N44°40'00"E 99.29'

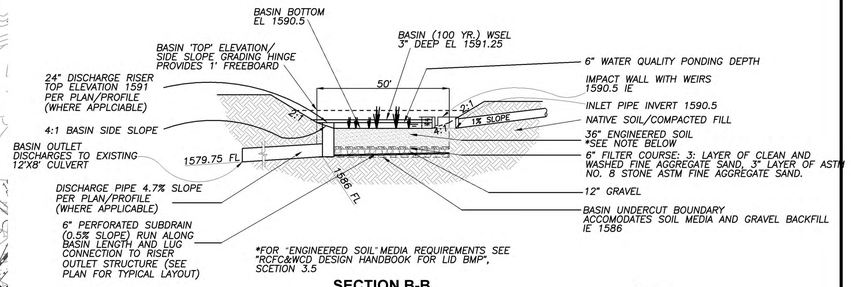
N45°20'00"W 186.00'

N16°44'50"W 277.10'

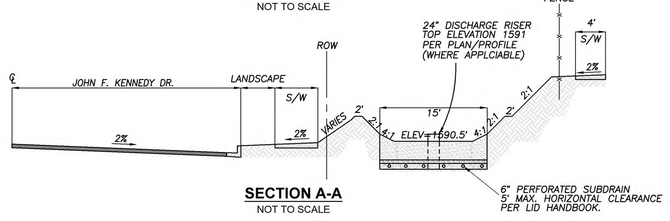
R=1444'
Δ=11°53'07"
L=299.54'

PARKING PROVIDED

TYPE	SPACES
STANDARD	153
DISABLED	6
TOTAL	159



SECTION B-B
NOT TO SCALE



SECTION A-A
NOT TO SCALE

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 FX(858)558-1414

SITE PLAN AND PRELIMINARY GRADING PLAN

DEL SOL CLUBHOUSE

CITY OF MORENO VALLEY, CALIFORNIA

SHEET 2 OF 4

W.O. 3442-0004

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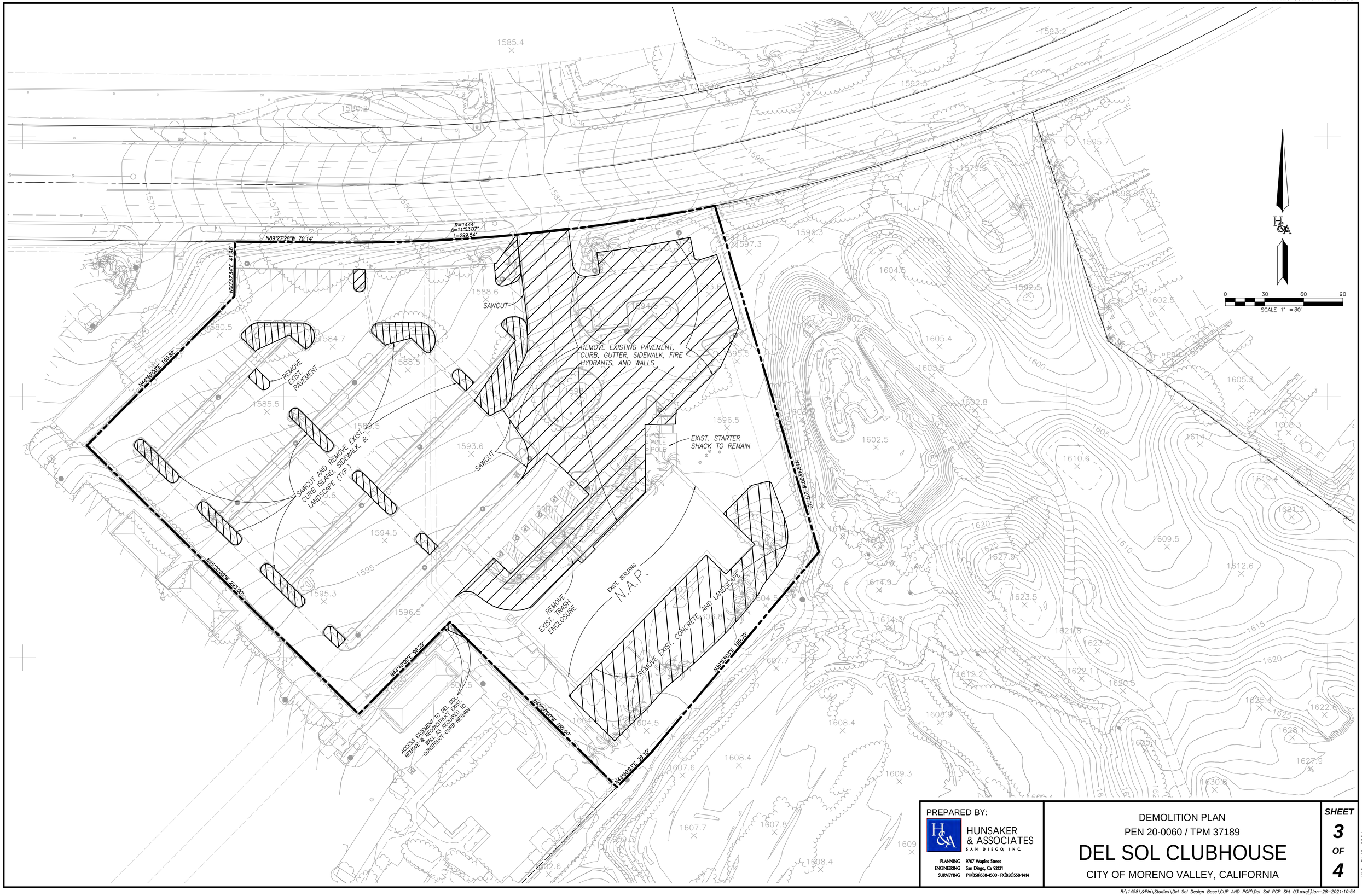

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500- FX(858)558-1414

DEMOLITION PLAN

PEN 20-0060 / TPM 37189

DEL SOL CLUBHOUSE

CITY OF MORENO VALLEY, CALIFORNIA

SHEET 3 OF 4

W.O. 3442-0004

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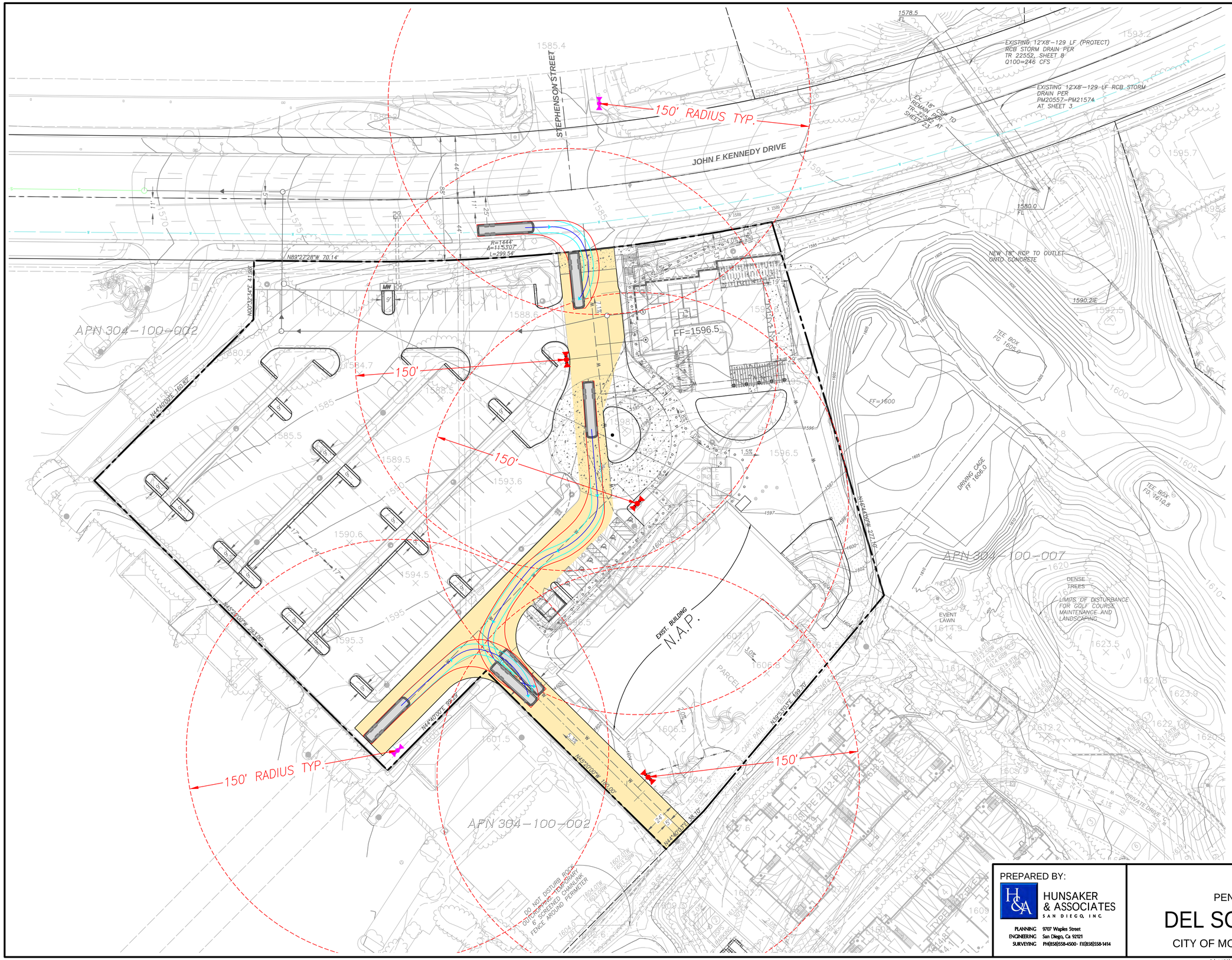

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 FX(858)558-1414

FIRE PLAN

PEN 20-0060 / TPM 37189

DEL SOL CLUBHOUSE

CITY OF MORENO VALLEY, CALIFORNIA

SHEET 4 OF 4

W.O. 3442-0004

R:\1458\&Pln\Studies\Del Sol Design Base\CUP AND PGP\Del Sol PGP Sht 04.dwg[]Jan-28-2021:11:00

PLANT LEGEND

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE
	16	CUPANIOPSIS ANACARDIOIDES	CARROT WOOD	24" BOX
	2	KOELREUTERIA PANNICULATA	GOLDEN RAIN TREE	24" BOX
	3	QUERCUS AGRIFOLIA	COAST LIVE OAK	24" BOX
		EXISTING TREE TO REMAIN - REFER TO TREE INVENTORY PLAN		
	14	JACARANDA MIMOSIFOLIA	JACARANDA	24" BOX
	9	LOPHOSTEMON CONFERTUS	BRISBANE BOX	24" BOX
	8	OLEA EUROPAEA `SWAN HILL` TM MULTI	SWAN HILL OLIVE MULTI	24" BOX
	27	SYAGRUS ROMANZOFFIANA	QUEEN PALM	18` BTH

SHRUBS

BOTANICAL NAME	COMMON NAME	SIZE
AEONIUM 'SUNBURST'	AEONIUM 'SUNBURST'	5 GAL.
AGAPANTHUS AFRICANUS	AGAPANTHUS	
AGAVE ATTENUATA	AGAVE	
ANIGOZANTHOS 'BUSH GOLD'	KANGAROO PAW	
BOUGAINVILLEA SPP.	BOUGAINVILLEA	
CALLISTEMON 'LITTLE JOHN'	CALLISTEMON 'LITTLE JOHN'	
DIANELLA CAERULEA 'CASSA BLUE'	CASSA BLUE FLAX LILY	
DIETES BICOLOR	FORTNIGHT LILY	
FESTUCA 'ELIJAH BLUE'	FESTUCA 'ELIJAH BLUE'	
HESPERALOE PARVIFOLIA	RED YUCCA	
LIGUSTRUM JAPONICA 'TEXANUM'	WAXLEAF PRIVET	
PITTOSPORUM T. 'VARIEGATA'	VARIGATED MOCK ORANGE	
RHAPHIOLEPIS U. MINOR	RHAPHIOLEPIS U. MINOR	
ROSMARINUS O. 'PROSTRATUS'	TRAILING ROSEMARY	
SALVIA 'HOT LIPS'	SALVIA 'HOT LIPS'	
WESTRINGIA FRUITICOSA	COAST ROSEMARY	

GROUNDCOVER

BOTANICAL NAME	COMMON NAME	SIZE
SENECIO MANDRALISCAE	BLUE CHALKSTICKS	FLATS
TURF	TURF	SQ FT

EXISTING MASONRY WALL TO REMAIN

EXISTING PARKWAY LANDSCAPING TO REMAIN

ENTRY ENLARGEMENT: SEE THIS SHEET

JOHN F KENNEDY DRIVE

STAIRS

ENHANCED PAVING TO BE COLOR CONCRETE (SUCH AS DAVIS COLOR YOSEMITE BROWN OR EQUAL) WITH TOP CAST #15 FINISH

LOW ACCENT WALLS

ENHANCED PAVING

EXISTING PARKWAY LANDSCAPING TO REMAIN

ADA RAMP

OUTDOOR COVERED DINING PATIO

TRASH ENCLOSURE

CLUBHOUSE ENTRY OUTDOOR SEATING AREA

FIRE ACCESS ROAD

OPEN LAWN

CART STAGING

CART PARKING

EXISTING MASONRY WALL TO REMAIN

SHRUB PLANTING TO SPELL OUT GOLF COURSE NAME

EXISTING BUILDING N.A.P.

CART STAGING

EXISTING PRACTICE PUTTING GREEN

TEE HOLE BOX 10

DG AND XERISCAPE AREA, TYP.

NATURAL TURF AREA

PROPOSED DRIVING CAGE

SEE ARCHITECTURE PLANS FOR BUILDING ELEVATIONS/FINISHES

EVENT LAWN

ENTRY ENLARGEMENT

SCALE: 1"=10'-0"

CITY OF MORENO VALLEY NOTES:

THE LANDSCAPE DESIGN SHALL COMPLY WITH THE CITY OF MORENO VALLEY LANDSCAPE AND WATER EFFICIENCY REQUIREMENTS, CHAPTER 9.17.030 OF THE MORENO VALLEY MUNICIPAL CODE.

ALL LANDSCAPE INDICATED ON PLAN SHALL BE MAINTAINED BY THE PROPERTY OWNER OR GOLF COURSE MANAGEMENT COMPANY.

ROOT BARRIER NOTE:

ALL TREES PLANTED WITHIN 5' OF ANY CURB, WALL, HARDSCAPE ELEMENT, BUILDING, FIRE HYDRANT, UTILITY VAULT, OR LIGHT FIXTURE SHALL RECEIVE A 10' LENGTH OF 24" DEEP ROOT BARRIER. NO ROOT BARRIER SHALL ENCIRCLE THE ROOT BALL.

PARKING CALCS:

(FOR REFERENCE. PLEASE SEE ARCHITECTS PLANS)

PARKING REQUIRED:
18 HOLES X 6 STALLS/EA = 108 STALLS.
3,500 RESTAURANT SPACE @ 10 PER 1,000 SF = 35 STALLS.

PARKING PROVIDED:
153 STANDARD STALLS
6 ADA ACCESSIBLE STALLS

SCALE: 1"=20'-0"

Underground Service Alert
Call: 811
TWO WORKING DAYS BEFORE YOU DIG
"CAUTION": Remember that the USA Center notifies only those utilities belonging to the center. There could be other utilities present at the work site. The center will inform you of whom they will notify.

4010 Sorrento Valley Blvd.
Suite 200
San Diego, CA 92121
gmplandarch.com
T 858.558.8977
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT 3593 John P. Patterson No. 3593 02-17 Renewal Date Date STATE OF CALIFORNIA

SHEET TITLE: CONCEPT PLAN

PROJECT/CLIENT:
RANCHO DEL SOL CLUBHOUSE
MORENO VALLEY, CA
ROC III CA BELAGO, LLC
2521 STATE STREET
CARLSBAD, CA 92008

REVISIONS
RESUBMITTAL 06-22-2020
RESUBMITTAL 08-26-2020

DRAWN KB
APPROVED JP
PLOT DATE 08/26/2020
JOB NO. 16-015
SCALE SEE SHEET

LP-01

SHEET 01 OF 02

FILE NAME: G:\16-PROJECTS\16-015-00\LANDARCH\CONCEPT\16-015 GOLF COURSE CLUBHOUSE.DWG

Attachment: Project Plans [Revision 1] (4294 : PEN20-0060 Plot Plan)
G:\16-PROJECTS\16-015-00\Landarch\Concept\16-015 Golf Course Clubhouse.dwg[16-015-06 Rancho del Sol Clubhouse]Aug-26-2020 16:04

REMOVE
REASON FOR REMOVAL: DECEASED

REMOVE
14" REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
10" REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
14" REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL: DECEASED

REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
14" REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL: DECEASED

REMOVE
10" REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL:DECEASED

REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

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REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL:DECEASED

REMOVE
REASON FOR REMOVAL:DECEASED

REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

REMOVE
REASON FOR REMOVAL: IN CONFLICT WITH NEW CONSTRUCTION

JOHN F. KENNEDY DRIVE

STEPHENSON STREET

CART PARKING

CART STAGING

TEE BOX HOLE 10

EVENT LAWN

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME
	15	EXISTING CUPANIOPSIS ANACARDIODES - TO REMAIN
	4	EXISTING CUPANIOPSIS ANACARDIOIDES - TO BE REMOVED
	2	EXISTING HETEROMELES ARBUTIFOLIA - TO BE REMOVED
	14	EXISTING JACARANDA MIMOSIFOLIA - TO BE REMOVED
	3	EXISTING KOELREUTERIA PANICULATA - TO BE REMOVED
	7	EXISTING KOELREUTERIA PANICULATA - TO REMAIN
	23	EXISTING MEXICAN FAN PALM - TO BE REMOVED
	1	EXISTING MEXICAN FAN PALM - TO REMAIN
	4	EXISTING QUERCUS AGRIFOLIA - TO REMAIN
	1	EXISTING SCHINUS MOLLE - TO BE REMOVED
	3	EXISTING SCHINUS MOLLE - TO REMAIN

**NOTES:
1) DEAD TREES TO BE REMOVED.
2) ALL TREES TO REMAIN AND BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED. REFER TO TREE PLAN NOTES THIS SHEET.
3) ALL TREES REMAINING SHALL RECEIVE PROTECTION FENCING AT DRIPLINE OF TREE FOR DURATION OF CONSTRUCTION
4) ALL TREES REMAINING SHALL RECEIVE SUPPLEMENTAL IRRIGATION UNTIL PERMANENT IRRIGATION IS ESTABLISHED
5) ALL TREES REMAINING SHALL BE PRUNED BY A CERTIFIED ARBORIST AND INSPECTED FOR OVERALL HEALTH AND STRUCTURAL INTEGRITY
6) ALL TREES REMOVED SHALL HAVE STUMPS GROUND TO REQUIRED DEPTH TO PROVIDE ROOM FOR NEW TREE PLANTINGS AND SAWDUST REMOVED

SCALE: 1"=20'-0"

Underground Service Alert
Call: 811
TWO WORKING DAYS BEFORE YOU DIG
"CAUTION": Remember that the USA Center notifies only those utilities belonging to the center. There could be other utilities present in the area of the site. The center will inform you of whom they will notify.

4070 Sorrento Valley Blvd.
Suite 200
San Diego, CA 92121
T 858 558 8977
gmplandarch.com
LANDSCAPE ARCHITECTURE & PLANNING

LICENSED LANDSCAPE ARCHITECT
John P. Patterson No. 3503
10-27
Renewal Date
STATE OF CALIFORNIA

SHEET TITLE:
TREE INVENTORY PLAN

PROJECT\CLIENT:
RANCHO DEL SOL CLUBHOUSE
MORENO VALLEY, CA
ROC III CA BELAGO, LLC
2521 STATE STREET
CARLSBAD, CA 92008

REVISIONS
RESUBMITTAL 06-22-2020
RESUBMITTAL 08-26-2020

DRAWN	KE
APPROVED	JP
PLOT DATE	08/26/2020
JOB NO.	16-015
SCALE	SEE SHEET

LP-02

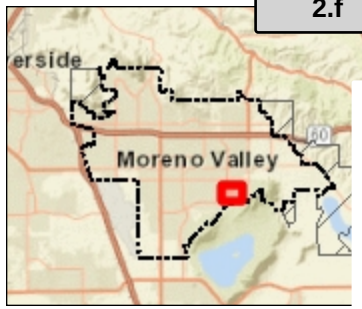
SHEET 02 OF 02

FILE NAME: G:\16-PROJECTS\16-015-00\LANDARCH\CONCEPT\16-015 CONCEPT_UPDATED SDP_TREE PLAN.DWG

Attachment: Project Plans [Revision 1] (4294 : PEN20-0060 Plot Plan)
G:\16-PROJECTS\16-015-00\Landarch\Concept\16-015 Concept_Updated SDP_Tree Plan.dwg[Aug 26, 2020 16:04

MORENO VALLEY
WHERE DREAMS SOAR

Aerial Map



Legend

Public Facilities
- Public Facilities
- Fire Stations

Parcels
City Boundary
Sphere of Influence

Image Source: Nearmap

Notes:

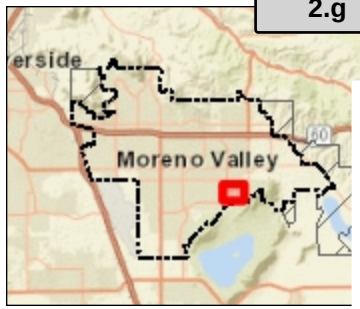
1,232.1 0 616.05 1,232.1 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 1/28/2021

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Zoning Map: Specific Plan 193 Golf Course (SP193GC)



Legend

Zoning
- Commercial
- Industrial/Business Park
- Public Facilities
- Office
- Planned Development
- Large Lot Residential
- Residential Agriculture 2 DU/AC
- Residential 2 DU/AC
- Suburban Residential
- Multi-family
- Open Space/Park

Master Plan of Trails
- Bridge
- Improved
- Multiuse
- Proposed
- Regional
- State

Road Labels
- Parcels
- City Boundary
- Sphere of Influence

Image Source: Nearmap

Notes:

PEN20-0060

1,261.9 0 630.96 1,261.9 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere

Print Date: 1/25/2021

DISCLAIMER: The information shown on this map was compiled from the City of Moreno Valley GIS and Riverside County GIS. The land base and facility information on this map is for display purposes only and should not be relied upon without independent verification as to its accuracy. Riverside County and City of Moreno Valley will not be held responsible for any claims, losses or damages resulting from the use of this map.

Attachment: Zoning Map (4294 : PEN20-0060 Plot Plan)

City of Moreno Valley
Community Development Department
Planning Division
City Hall Council Chamber
14177 Frederick Street
Moreno Valley, CA 92553

NOTICE OF PUBLIC HEARING (VIA TELECONFERENCE ONLY)

PURSUANT TO COVID-19 GOVERNOR EXECUTIVE ORDER N-29-20

Notice of Teleconferenced Public Hearing before the Planning Commissior
the City of Moreno Valley:

DATE & TIME: February 11, 2021 at 7:00 P.M. **VIA TELECONFEREN ONLY**

COVID-19 TELECONFERENCE INSTRUCTIONS:
For Teleconference Meeting public participation instructions please see age
at **http://morenovalleyca.iqm2.com/Citizens/default.aspx**

PROJECT LOCATION: 28095 John F Kennedy Drive (APN: 304-100-007
District 4.

CASE NUMBER(s): PEN20-0060 – Plot Plan

CASE PLANNER: Gabriel Diaz, Associate Planner (951) 413-3226
gabrield@moval.org

<APN>
<Property Owner>
<Street Address>
<City, State, Zip>

NOTICE OF PUBLIC HEARING (VIA TELECONFERENCE ONLY)

PROPOSAL: Applicant is requesting approval of a Plot Plan for the development of a new 5,000 square foot golf course clubhouse building, with 1,950 square feet of outdoor seating area at the existing Rancho Del Sol golf course property.

ENVIRONMENTAL DETERMINATION: The City of Moreno Valley has reviewed the above project in accordance with the Californi Environmental Quality Act (CEQA) Guidelines. An Addendum to the Mitigated Negative Declaration for the prior Specific Plan Amendmer (PEN16-0128) has been prepared pursuant to Section 15164 of the CEQA Guidelines. The project will not cause a significant effect in this cas because site conditions are consistent and do not create more or different environmental impacts than those addressed in the Mitigate Negative Declaration. The project will not increase the intensity of the golf course provided in the Specific Plan. None of the conditions describe in Section 15162 of the CEQA Guidelines that call for preparation of a subsequent Environmental Impact Report or Negative Declaration hav occurred.

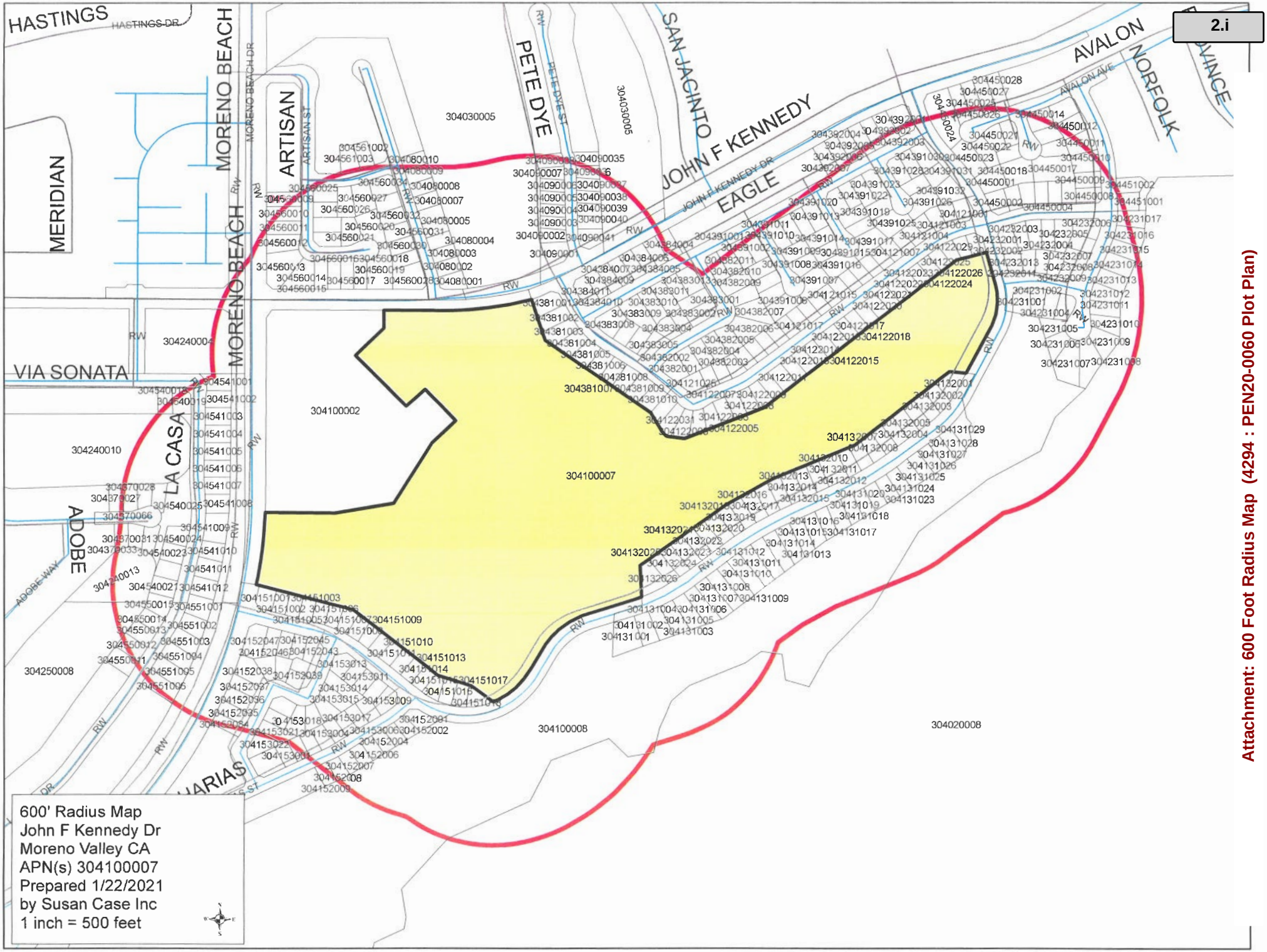
PUBLIC HEARING: All interested parties will be provided an opportunity to submit oral testimony during the teleconferenced Public Hearin and/or provide written testimony during or prior to the teleconferenced Public Hearing. The application file and related environmental document may be inspected by appointment at the Community Development Department at 14177 Frederick Street, Moreno Valley, California by callin (951) 413-3206 during normal business hours (7:30 a.m. to 5:30 p.m., Monday through Thursday).

COVID-19 – IMPORTANT NOTICES: Please note that due the COVID-19 pandemic situation, staff will attempt to make reasonabl arrangements to ensure accessibility to inspect the aforementioned records. **In addition, special instructions on how to effectivel participate in the teleconferenced Public Hearing, as approved by Governor Executive Order N-29-20, will be posted a http://morenovalleyca.iqm2.com/Citizens/default.aspx and will be described in the Planning Commission agenda.**

PLEASE NOTE: The Planning Commission may consider and approve changes to the proposed items under consideration during t teleconferenced Public Hearing.

GOVERNMENT CODE § 65009 NOTICE: If you challenge any of the proposed actions taken by the Planning Commission in court, you may limited to raising only those issues you or someone else raised during the teleconferenced Public Hearing described in this notice, or in writt correspondence delivered to the Planning Division of the City of Moreno Valley during or prior to, the teleconferenced Public Hearing.

Upon request and in compliance with the Americans with Disabilities Act of 1990, any person with a disability who requires a modification o accommodation in order to participate in a meeting should direct such request to James Verdugo, ADA Coordinator, at 951.413.3350 at leas 48 hours before the meeting. The 48-hour notification will enable the City to make reasonable arrangements to ensure accessibility to this meeting.



Attachment: 600 Foot Radius Map (4294 : PEN20-0060 Plot Plan)