Draft
Initial Study and
Mitigated Negative Declaration

SCH # TBD

Avenue 66 Trunk Sewer Project

Prepared by:

Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

With assistance from:

9655 Chesapeake Drive | Suite 320
San Diego, California 92123
858.875.7400

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

And
MSA Consulting Inc.
And
Water Resources and Policy Initiatives

September 2021

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYM LIST

ABS	Acrylonitrile Butadiene Styrene
AF	Acre feet
AHPA	Archaeological and Historic Preservation Act
AMSL	Above mean sea level
APE	Area of Potential Affect
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
Cal Fire	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model™
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Boards
CEQA	California Environmental Quality Act
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CGP	Construction General Permit
CFR	Code of Federal Regulations
CO_2e	Carbon Dioxide Equivalent
CNEL	Community Noise Equivalent Level
CRHR	California Register of Historical Resources
CWSRF	Clean Water State Revolving Fund
CVAG	Coachella Valley Association of Governments
CVBACM	Coachella Valley Best Available Control Measures
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan
CVUSD	Coachella Valley Unified School District
CVWD	Coachella Valley Water District
CWA	Clean Water Act
CWC	California Water Code
DAC	Disadvantaged Community
dB	decibel
DDM	Development Design Manual
DEH	Riverside County Department of Environmental Health
DTSC	Department of Toxic Substances Control

DPR	Department of Parks and Recreation
EIC	Eastern Information Center
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
°F	Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FOG	Fats, oils, and grease
FRAP	Cal Fire Resources Assessment Program
FWCA	Fish and Wildlife Coordination Act
GHG	Greenhouse gas emissions
GIS	Geographic Information Systems
gpd	gallons per day
gpm	gallons per minute
GSA	Groundwater Sustainability Agency
GWP	Global Warming Potential
IID	Imperial Irrigation District
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
LF	linear feet
LUST	Leaking Underground Storage Tank
LS	Lift Station
LST	Localized Significance Threshold
MHI	Median Household Income
MLD	Most Likely Descendant
MBTA	Migratory Bird Treaty Act
MGD	Million gallons per day
MMRP	Mitigation Monitoring and Reporting Plan
MHP	Mobile Home Park
MND	Mitigated Negative Declaration
mph	miles per hour
MS4	Municipal Separate Storm Sewer System
MT	metric tons
NAAQS	National Ambient Air Quality Standards

NHPA	National Historic Preservation Act
ND	Negative Declaration
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
PM	Particulate matter
PPV	peak particle velocity
PVC	polyvinyl chloride
RCFC	Riverside County Flood Control
RCFD	Riverside County Fire Department
RCTC	Riverside County Transportation Commission
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCADA	Supervisory control and data acquisition
SCAQMND	South Coast Air Quality Management District
SDAC	Severely Disadvantaged Community
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SRA	Source receptor areas
SSAB	Salton Sea Air Basin
SSOs	Sanitary Sewer Overflows
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMCC	Torres-Martinez Community Center
TMDL	Total Maximum Daily Load
USDA	US Department of Agriculture
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	United States Geologic Survey
UWMP	Urban Water Management Plan
VAC	Visual Absorptive Capacity
VCP	Vitrified Clay Pipe
VHFHSZ	very high fire hazard severity zones
VMT	vehicle miles travelled
WRP	Water Reclamation Plant

This page is intentionally blank.

1. INTRODUCTION

1.1 Project Title

Avenue 66 Trunk Sewer Project

1.2 Lead Agency

Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

Lead Agency Contact:

William Patterson, Environment Supervisor
Phone: (760) 398-2661; Email: wpatterson@cvwd.org

1.3 Purpose of this Document

Coachella Valley Water District (CVWD) has prepared this Initial Study (IS) to evaluate the potential environmental impacts related to implementation of the Avenue 66 Trunk Sewer Project (the "proposed project"), which consists of extension of CVWD sewer facilities along Avenue 66 from Polk Street to Harrison Street to provide sanitation service to the Sunbird Mobile Home Park (located near Echols Road and Harrison Street) and the Torres-Martinez Community Center (located south of Avenue 66 between Polk and Tyler Streets) located in unincorporated Riverside County.

CVWD is the lead agency under the California Environmental Quality Act (CEQA) for the proposed project. CEQA requires that the lead agency prepare an Initial Study (IS) to determine whether an Environmental Impact Report (EIR), Negative Declaration (ND), or Mitigated Negative Declaration (MND) is needed. CVWD has prepared this IS to evaluate the potential environmental consequences associated with the Avenue 66 Trunk Sewer Project, and to disclose to the public and decision makers the potential environmental effects of the proposed project. Based on the analysis presented herein, an MND is the appropriate level of environmental documentation for the proposed project.

1.4 Scope of this Document

This IS/MND has been prepared in accordance with CEQA (as amended) (Public Resources Code §21000 et. seq.) and the 2020 State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, §15000 et. seq.), as updated on December 28, 2018, and CVWD's Local CEQA Guidelines (2020). CEQA Guidelines §15063 describes the requirements for an IS and §15070-15075 describe the process for the preparation of an MND. Where appropriate, this document makes reference to either the CEQA Statute or State CEQA Guidelines (as amended in December 2018). This IS/MND contains all of the contents required by CEQA, which includes a project description, a description of the

environmental setting, potential environmental impacts, mitigation measures for any significant effects, consistency with plans and policies, and names of preparers.

The assessment provided in Chapter 3 is based on technical reports and scientific studies prepared for the proposed project and supplemented with other public information sources, as provided in the list of references. The discussion and level of analysis are commensurate with the expected magnitude and severity of each potential impact to the environmental resource. Mitigation measures have been developed, where necessary, to reduce potential environmental impacts to a less than significant level.

This IS/MND evaluates the potential for environmental impacts to resource areas identified in Appendix G of the 2020 State CEQA Guidelines (as amended in December 2018). The environmental resource areas analyzed in this document include:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance
-

1.5 CEQA Process

Pursuant to State CEQA Guidelines §15073, this Draft IS/MND is being circulated for a 20-day public review period to local and state agencies, and to interested organizations and individuals who may wish to review and comment on the report. CVWD has circulated the Draft IS/MND to the State Clearinghouse for distribution to State agencies. In addition, CVWD has circulated a Notice of Intent to Adopt a Mitigated Negative Declaration to the

Riverside County Clerk, responsible agencies, and interested entities (October 1 – October 20, 2021). A copy of the Draft IS/MND is available for review at: www.cvwd.org

Written comments should be submitted to CVWD by 5:00 PM on October 20, 2021. Contact person is listed below.

Please submit written comments to:

William Patterson
Coachella Valley Water District
75-515 Hovley Lane East
Palm Desert, CA 92211

Email: WPatterson@cvwd.org

Following the 20-day public review period, CVWD will evaluate [any] written comments received on the Draft IS/MND and incorporate any substantial evidence that the proposed project could have a significant impact on the environment into the Final IS/MND and prepare a Mitigation Monitoring and Reporting Program (MMRP). The MMRP will specify the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment.

Prior to approving the project, CVWD's Board of Directors will consider the IS/MND along with any written comments received, and other relevant project information, at a publicly noticed hearing. CVWD's Board of Directors shall adopt the IS/MND only if it finds on the basis of the whole record before it (including the Initial Study and any comments received), that there is no substantial evidence that the project will have a significant effect on the environment; and, that the mitigated negative declaration reflects the lead agency's independent judgment and analysis (State CEQA Guidelines §15074). CVWD's Board of Director meetings are held on the second and fourth Tuesday of the month.

1.6 Impact Terminology

The scope of the environmental resource areas is listed above in *Section 1.2*. The level of significance for each resource area uses CEQA terminology as specified below:

- **No Impact.** No adverse environmental consequences have been identified for the resource or the consequences are negligible or undetectable.
- **Less than Significant Impact.** Potential adverse environmental consequences have been identified. However, they are not adverse enough to meet the significance threshold criteria for that resource. No mitigation measures are required.
- **Less than Significant with Mitigation Incorporated.** Adverse environmental consequences that have the potential to be significant but can be reduced to less than significant levels through the application of identified mitigation strategies that have not already been incorporated into the proposed project.

- **Potentially Significant.** Adverse environmental consequences that have the potential to be significant according to the threshold criteria identified for the resource, even after mitigation strategies are applied and/or an adverse effect that could be significant and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared to meet the requirements of CEQA.

2. PROJECT DESCRIPTION

2.1 Project Overview

The proposed project is located in the eastern portion of the greater Coachella Valley within an unincorporated area of Riverside County, California in the community of Thermal. A regional overview map is shown in **Figure 2-1**. The City of Coachella (located about seven miles north) is the nearest major population center. The unincorporated community of Valerie is immediately adjacent to the project area to the west and the unincorporated area of Mecca is about four miles east of the project. Access to the site is via Interstate 10, State Route 86, Avenue 66, and Harrison Street.

The proposed project would extend CVWD sewer facilities along Avenue 66 from Polk Street to Harrison Street to provide sanitation service to the Sunbird Mobile Home Park (MHP) (located near Echols Road and Harrison Street) and the Torres-Martinez Community Center (TMCC) (located south of Avenue 66 between Polk and Tyler Streets). Each component of the proposed project is shown in **Figure 2-2**. The proposed project involves installation of 19,625 feet of sewer pipeline and a new lift station. The proposed project would connect the Sunbird MHP and TMCC to CVWD's existing sanitation system tributary to existing Lift Station 55-21 (LS 55-21) and then to CVWD's Water Reclamation Plant No. 4 (WRP-4). The pipeline would be installed below grade within existing paved streets and rights-of-way with an average excavation depth of ten to 14 feet and maximum depth of 25 feet. The pipeline alignment would primarily traverse public roads and a portion of the Torres-Martinez Desert Cahuilla Indian reservation land.

2.1.1 Project Purpose and Background

The SWRCB and the Regional Water Quality Control Boards (RWQCBs) are the *principal state agencies with primary responsibility for the coordination and control of water quality* (California Water Code (CWC) §13000 et seq.). Efforts by these agencies to preserve and protect water quality to optimize the beneficial uses of state waters, often involve the elimination of septic systems. The three primary objectives of the proposed project are to:

1. Assist disadvantaged communities with water quality needs;
2. Replace septic systems with regional sewer service; and
3. Propose facilities consistent with long-term infrastructure plans.

The proposed project is configured to directly benefit severely disadvantaged communities (SDACs) while providing the backbone to benefit additional disadvantaged communities (DACs) in the long-term. Benefits also relate to improved groundwater quality through the removal of septic systems and an increase in the production of recycled water in the future.

The Sunbird MHP is comprised of 10 acres of high-density single-family homes with a population of approximately 490 residents and 86 mobile home units. The community qualifies as a SDAC with a median household income (MHI) less than 60% of the statewide MHI, according to the DWR DAC Mapping Tool (DWR 2020). A Notice of Noncompliance issued by the Colorado River RWQCB on November 3, 2016 informed the property manager (Newport Pacific) that the septic systems were in violation of the Waste Discharge Requirement Order 97-500. Newport Pacific is currently required to evacuate six community septic tanks on a bi-weekly basis for transport and disposal at CVWD's Water Reclamation Plant No. 4 (WRP-4). This situation is unsustainable, and modifications to the existing septic system are problematic for various reasons. The Leadership Counsel for Justice and Accountability requested technical assistance from the SWRCB to develop options for connection to CVWD's sewer collection system.

The TMCC is located about half a mile south of Avenue 66 on Martinez Road. A mobile home park and several residential areas are also located along this stretch of Martinez Road, although they are not part of the current project. The TMCC septic system is comprised of 19 independent tanks of varying capacity on 25 acres. Buildings connect directly to the nearest septic tank. The TMCC residential area includes elder apartments, single-family units, and trailers quantified as 11 residential units (23 EDUs). The remaining 20-acre TMCC non-residential area encompasses tribal offices, a medical clinic, and recreational facilities.

Wastewater generated by the Sunbird MHP is around 17,200 gallons per day (gpd) and by the TMCC site is 8,600 gpd (Woodard & Curran 2020). Projected annual average flow to serve both locations is approximately 25,800 gpd. Project facilities would be sized and located such that other existing low-income housing could be connected, which has the potential to double the initial annual average flow. The proposed sewer collection system would be designed to accommodate the peak hour flow for all existing DAC residences in the tributary area, based on CVWD's Developmental Design Manual (DDM), and shown in **Figure 2-3**. Ultimately, the wastewater conveyance pipelines would accommodate the demand projections over the next 3 to 5 years that are anticipated in CVWD's DDM. The project would allow for expansion to connect other small communities in the project area, increasing the average flow by approximately 85,400 GPD (Akel Engineering Group 2017).

Figure 2-1: Avenue 66 Trunk Sewer – Regional Location Map

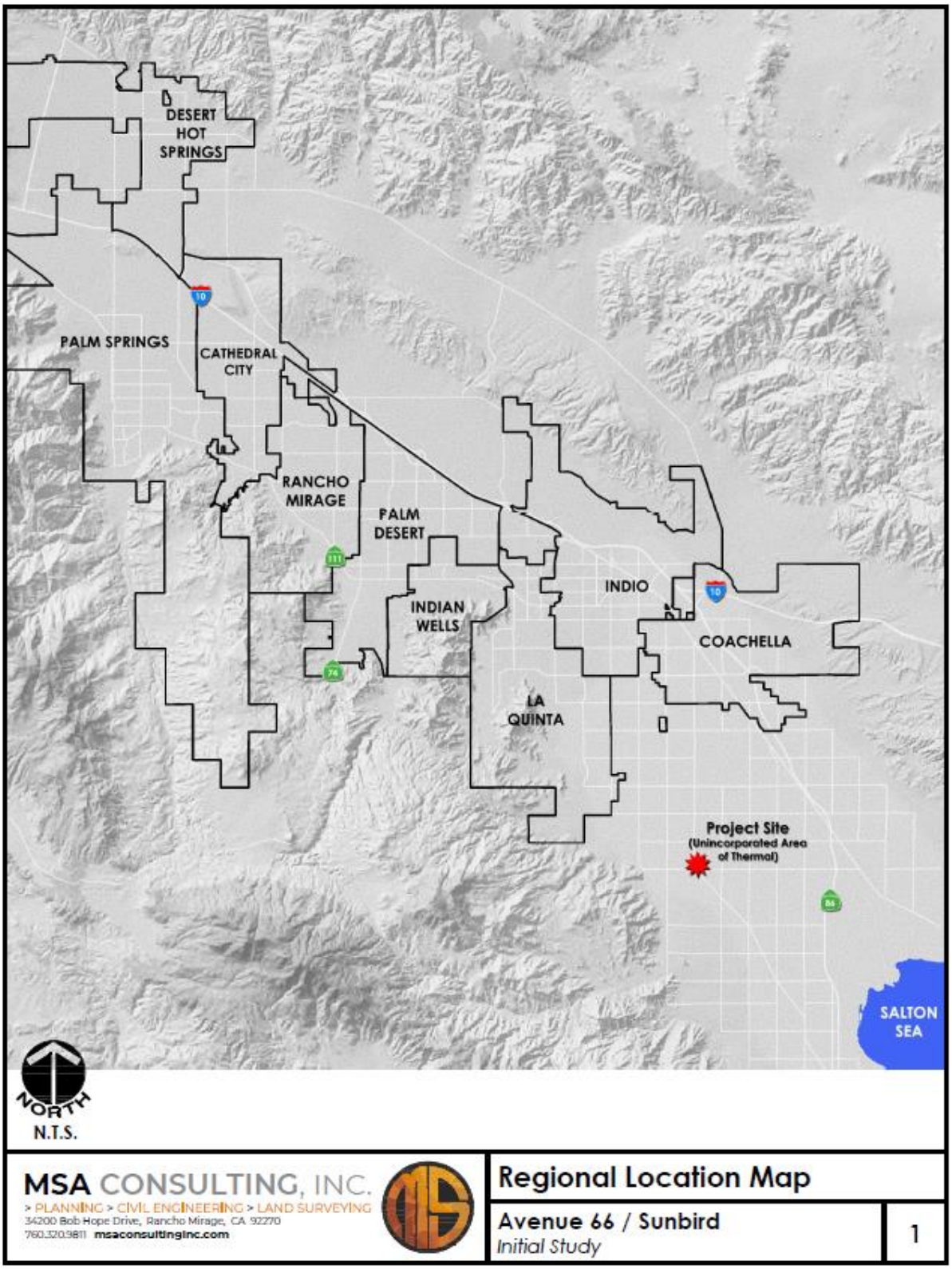


Figure 2-2: Avenue 66 Trunk Sewer– Project Vicinity Map

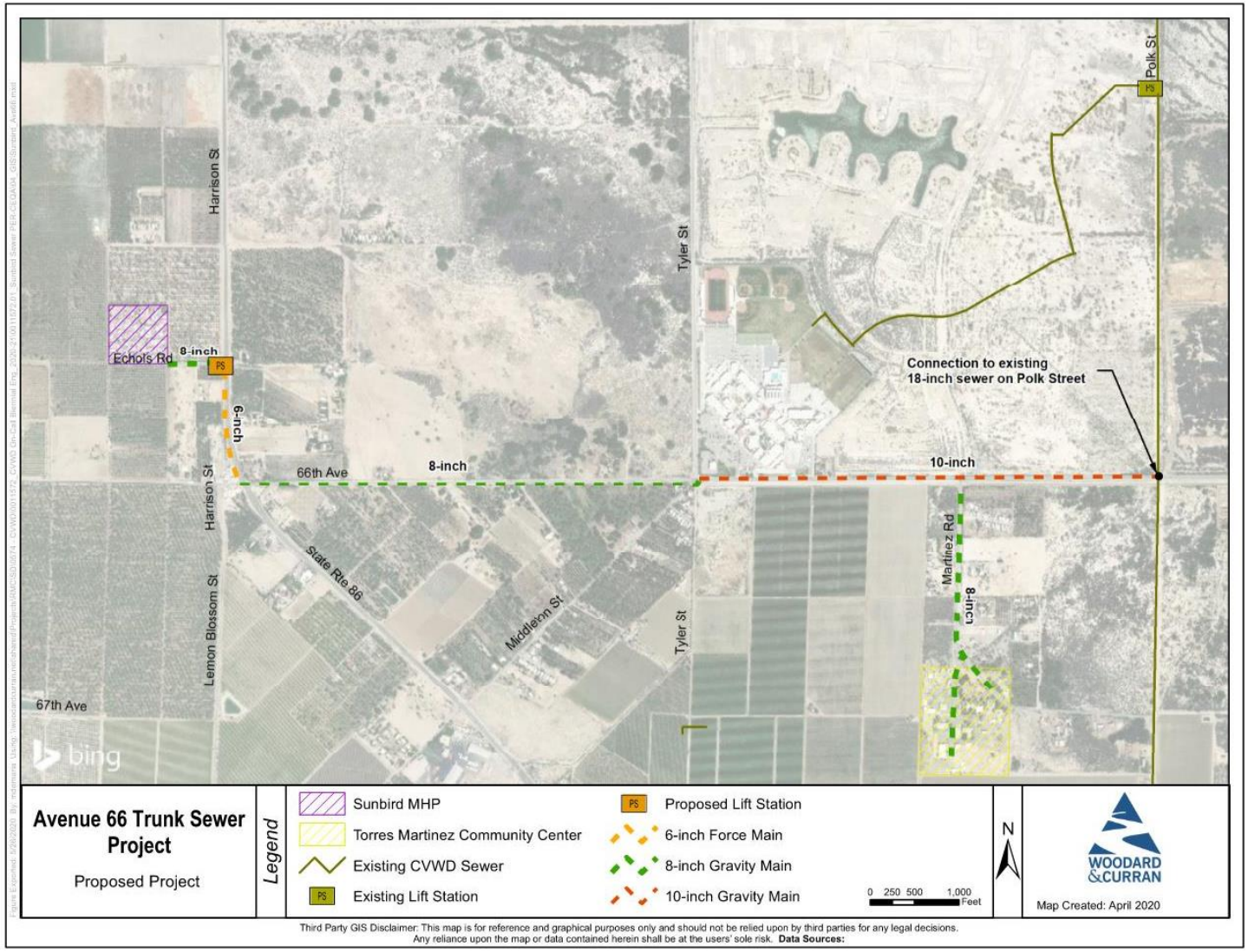
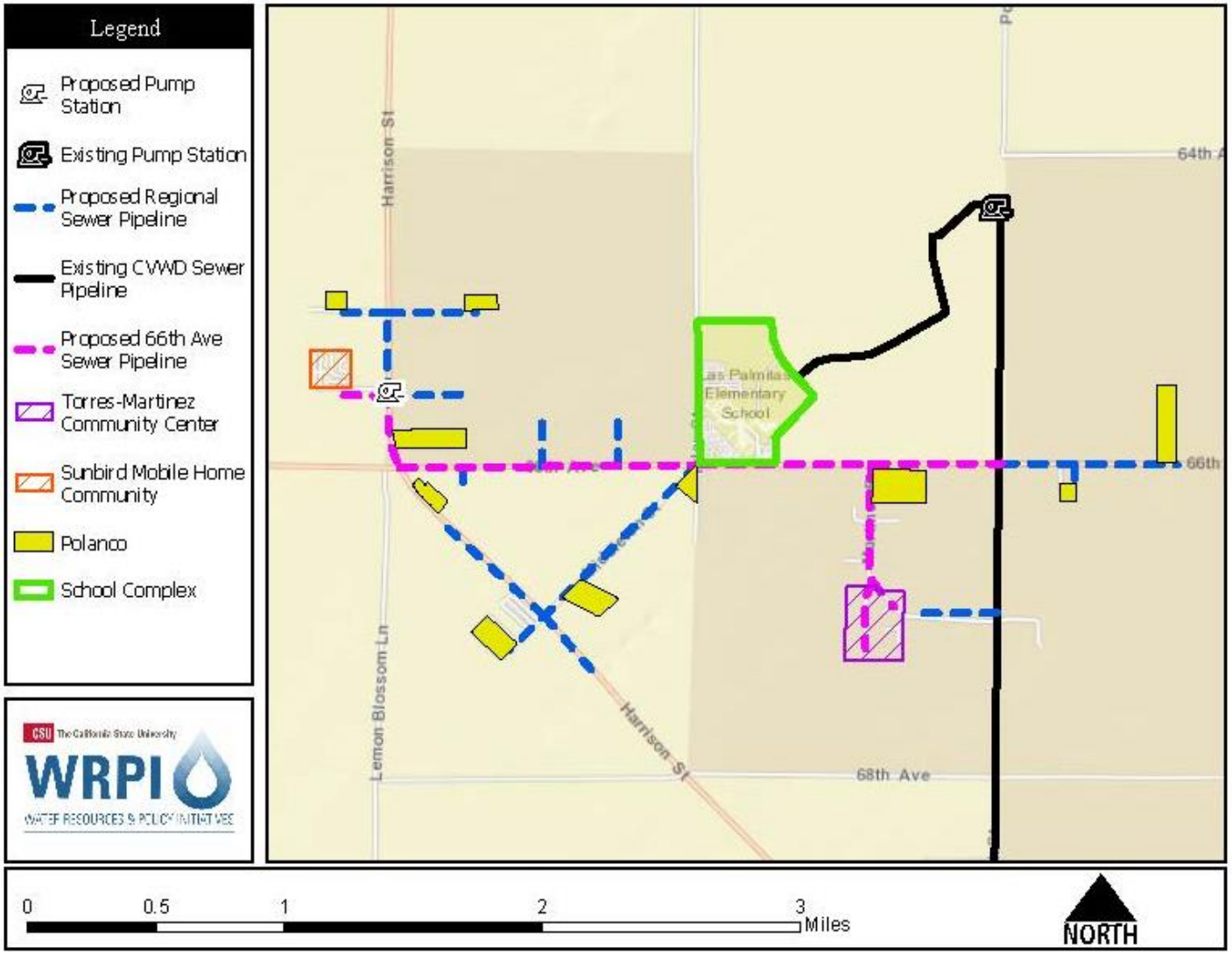


Figure 2-3: Proposed and Future Wastewater System Expansion



2.2 Environmental Setting

The project is within Riverside County, surrounded primarily by vacant land and irrigated agriculture. Residential, commercial, and industrial developments are scarce (see images in *Section 2.3 Environmental Setting*, below). Most residential developments are well-established trailer parks. Existing development within the project area consists of multi-family residential (trailer parks or mobile home parks, including the Sunbird MHP), single-family residential, community-services, commercial, agricultural land, education (Toro Canyon Middle School and Las Palmitas Elementary School) and the TMCC. The TMCC includes administration buildings, a health clinic, recreational areas, roads, and residential units. Tribal lands are located throughout the project area. Specifically, the Torres-Martinez Desert Cahuilla Indian properties are located north and south of the proposed project alignment along Avenue 66. The land use designations established in the *Riverside County General Plan Eastern Coachella Valley Area Plan* are shown in **Figure 2-4**.

The proposed project is within the *Eastern Coachella Valley Area Plan* (County of Riverside 2016). The *Eastern Coachella Valley Area Plan* covers the area at the northern end of the Salton Sea, California's largest inland sea. Physically, the eastern Coachella Valley is bounded by the Santa Rosa Mountains to the west, and the Mecca Hills and the edge of Joshua Tree National Park to the northeast.

Thermal

The community of Thermal is located west of State Route 111, south of the City of Coachella, and contains light industrial uses as well as some residential and commercial uses. The Riverside County-owned Jacqueline Cochran Regional Airport is located in the westerly part of Thermal and the airport's compatibility zones D and E overlay the proposed project sites. Historically, Thermal has been an important agricultural center, and remains so, with some of its more prominent crops including dates, table grapes, grapefruit, and assorted vegetables. In the core area of the community, to the north of Thermal Town Center, are two schools – John Kelley Elementary School and La Familia Continuation High School, a Riverside County Sheriff's station, and Riverside County Thermal Fire Station 39 (County of Riverside 2016).

Valerie

According to the *Eastern Coachella Valley Area Plan*, the community of Valerie, located at the junction of State Route 86 and Avenue 66, incorporates mobile and single-family detached homes and historic agricultural land uses. The Coachella Valley Fish Traps, an archaeological site listed on the National Register of Historic Places, is located west of Valerie, approximately three miles west of the proposed project area.

Farmland

The majority of the land surrounding the proposed project is identified as Prime Farmland or Farmland of Local Importance (County of Riverside N.d.a). The area immediately south of TMCC is designated Agricultural Preserve (County of Riverside N.d.a).

Climate

Local climate can be characterized as hot and dry with instances of zero measurable annual rainfall. However, record storm events have generated over six inches of precipitation in six hours. Average annual rainfall is calculated at about three inches per year with the majority occurring between December and February. Summer temperatures commonly exceed 100 degrees Fahrenheit (°F). Common mid-day temperatures range from 110-120°F. High temperatures coupled with gentle but constant prevailing winds yield high evaporation rates. Freezing temperatures are infrequent.

Topographic Features

The topography of the project area is relatively flat as characteristic of an ancient lakebed. There are no drainage channels, lakes, hills, or rock outcroppings within the project site. The intersection of Avenue 66 and Harrison Street, on the project's western extreme, contains the project's highest point at an elevation of -93 feet above mean sea level (AMSL). The lowest surface elevation is on the eastern extreme at Polk Street at -162 feet AMSL. The average slope across the project site is less than 1%.

Hydrology

The Coachella Valley is drained primarily from north to south through the Coachella Valley Stormwater Channel, which is channelized about two miles east of the project site. The project is located in the Whitewater River Watershed, which drains the area from the San Bernardino Mountains to the Salton Sea.

Flood control improvements along the Coachella Valley Stormwater Channel protect the site from regional events, although the *Eastern Coachella Valley Area Plan* locates the project site within a Special Flood Hazard Area, which extends northerly from the Salton Sea to Valerie, overlapping the project site (County of Riverside 2016). The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Number 06065C2910H designates the site as Zone A – an area subject to 1% annual-chance flood event with inundation of less than one foot.

Geologic Features and Soils

The eastern Coachella Valley is traversed by the San Andreas fault, an active fault with a significant probability of earthquake activity. The project site is located between the San Andreas Fault zone to the north and San Jacinto Fault zone to the south. There are also many other active/potentially active late Quaternary faults within a 100-kilometer radius

of the project. The most active or potentially active fault line is located approximately 7 miles away from the project site.

The northwestern Coachella Valley is an alluvial lowland that extends southeast from the San Gorgonio Pass region to the north end of the Salton Sea. The lowland is traversed by multiple branches of the San Andreas Fault and is punctuated by localized compressions resulting in the uplift of dome-shaped hills of sand and gravel. Current geologic understanding suggests that the lowland is a contractional region formed over the last one-million years by left-lateral strike slip branches of the San Andres Fault. The left-lateral strike-slip motion is presently active and results in earthquakes in the northern Coachella Valley. Sediments are deposited in the lowland portions of the basin, also known as depositional basins. Sediments in the depositional basins are the main water-bearing units in the Coachella Valley and have been utilized for sand and gravel resources (Kamalzare, PhD., M. ASCE, 2018). However, there are no mineral resource areas in proximity to the project area (County of Riverside N.d.a).

The Riverside County Liquefaction Susceptibility Map locates the project site in an area of high susceptibility due to shallow groundwater, soil type, and potential ground shaking from nearby faults (County of Riverside 2016).

Groundwater

Boring samples presented in the Kamalzare geotechnical report indicate the existence of a high groundwater table at the intersection of Avenue 66 and Polk Street, as well as the intersection of Avenue 66 and Martinez Road (Kamalzare, PhD., M. ASCE, 2018). The Kamalzare geotechnical investigation encountered water at the depth of 13.2 feet below the ground surface at the intersection of Avenue 66 and Polk Street and 16 feet below ground surface at the intersection of Avenue 66 and Martinez Road. The geotechnical study indicates that the groundwater elevation is -181 feet AMSL at Polk Street and increases to -163 feet AMSL at Martinez Road.

Wildfire

The desert and mountainous regions in the East Coachella Valley, roughly two miles to the west and seven miles to the east of the proposed project site, have a high to very high wildfire susceptibility; however, the wildfire susceptibility is moderate to low in the valley (County of Riverside 2016).

Conservation Areas

The project area is not within a designated Conservation Area of the *Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan* (referred to as the CVMSHCP). The CVMSHCP was adopted by the plan participants in 2007 and 2008 and permits were issued by the wildlife agencies in late 2008 (County of Riverside 2016). CVWD is a permittee to the CVMSHCP. The closest Conservation Areas of the CVMSHCP to the project site are the *Santa Rosa and San Jacinto Mountains*

Conservation Area, two miles to the west, and the *Coachella Valley Stormwater Channel and Delta Conservation Area*, three miles to the east.

Air Basin

The project area is located in the Coachella Valley Planning Area of the Salton Sea Air Basin, which is managed by the South Coast Air Quality Management District (SCAQMD). The basin is nonattainment for ozone and respirable particulate matter (PM_{10}) (SCAQMD 2017).

Night Sky

The entire proposed project area is within Zone B of the Mount Palomar Nighttime Lighting Policy Area (County of Riverside 2016).

Transportation

State Route 111 and State Route 86 are the main north-south connector routes within the east Coachella Valley. The Southern Pacific Railroad runs adjacent to State Route 111 and the Salton Sea, to Riverside County's southern boundary. State Route 111, from Bombay Beach on the Salton Sea to Avenue 66 near Mecca, approximately five miles east of the proposed project, is a State-eligible Scenic Highway, providing views of the Salton Sea and the surrounding mountainous wilderness. Interstate 10 from Chiriaco Summit to the intersection with State Route 86, approximately ten miles north of the proposed project, is the nearest County-eligible Scenic Highway to the proposed project.

Avenue 66 is the main east-west connector route to the proposed project, and Harrison Street, adjacent to Sunbird MHP, connects the project site to other communities on the western side of the east Coachella Valley. Avenue 66 is classified as an Urban Arterial and Harrison Street is classified as Expressway. Both Avenue 66 and Harrison Street are identified as having regional Class I bike paths (County of Riverside 2016).

Airports

The southernmost edge of the Jacqueline Cochrane Regional Airport sphere of influence, Zone D compatibility zone, overlaps the proposed alignment along Martinez Road and along Avenue 66 between Tyler Street and the project's eastern terminus (County of Riverside N.d.a).

Utilities

CVWD provides water, wastewater, recycled water, and flood control services to the region. The CVWD service area covers about 1,000 square miles and serves a population of about 300,000 residents. As part of water delivery, CVWD implements groundwater recharge within its service area.

CVWD currently provides potable water service to about 110,133 municipal connections of various user types, including residential, commercial, and industrial. Groundwater is

supplied through 93 active wells. Imported water from the State Water Project and Colorado River is used to replenish the groundwater basin. CVWD services municipal customers through three public water systems; Sunbird MHP is a part of the Cove Communities Public Water System. Some trailer parks are independent of CVWD and use onsite wells for their potable (drinking) water.

CVWD's wastewater collection and treatment systems process almost 17 million gallons per day (MGD) from approximately 95,000 residential and commercial accounts. CVWD's collection system serves approximately 254,420 customers. The system has approximately 1,160 miles of sewer collection piping, 28 lift stations, and five wastewater reclamation plants with a total capacity of 33.1 MGD. The average daily wastewater flow in 2019 was 16.7 MGD and it is expected to increase in the future (CVWD 2019).

Figure 2-4: Riverside County Land Use Map

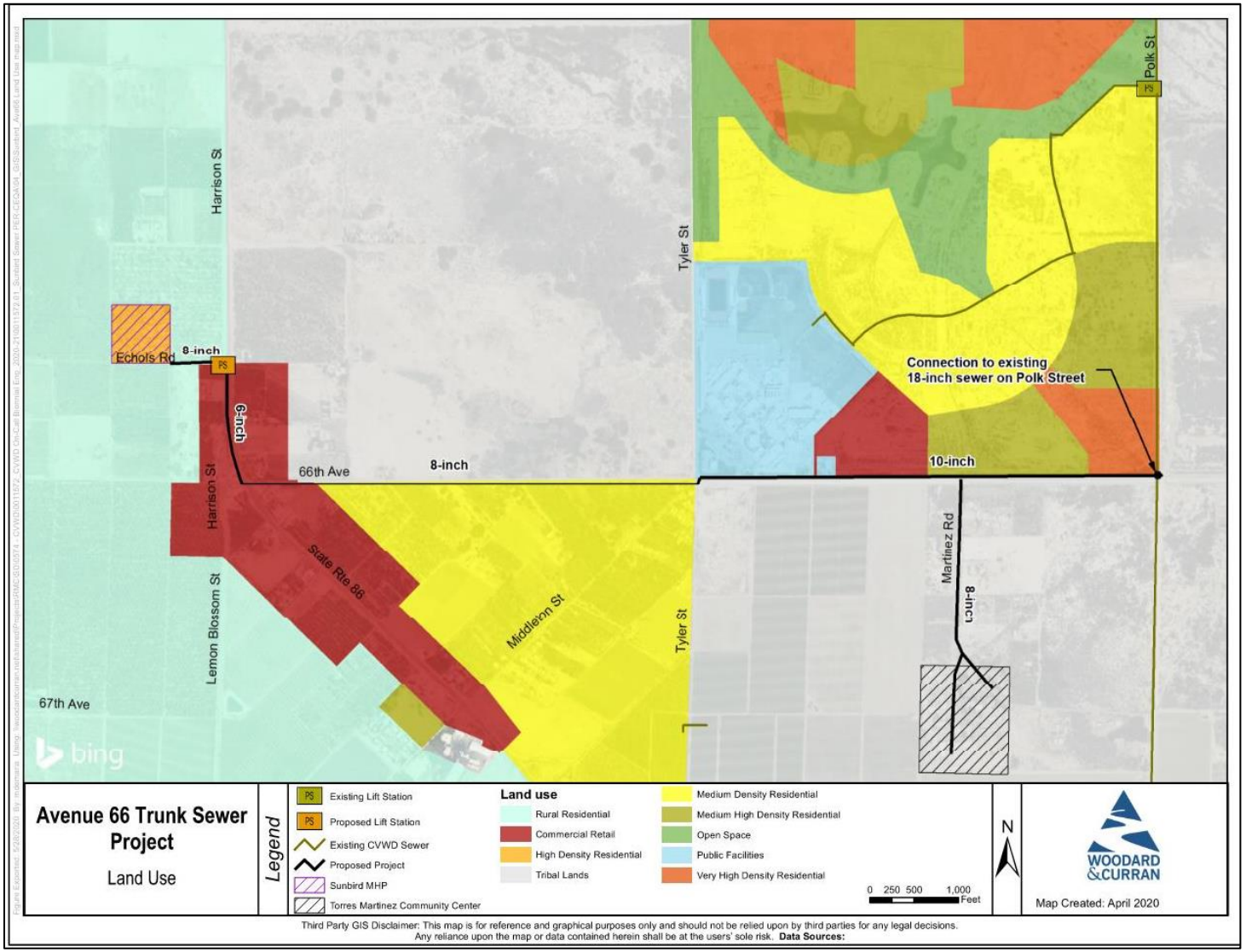
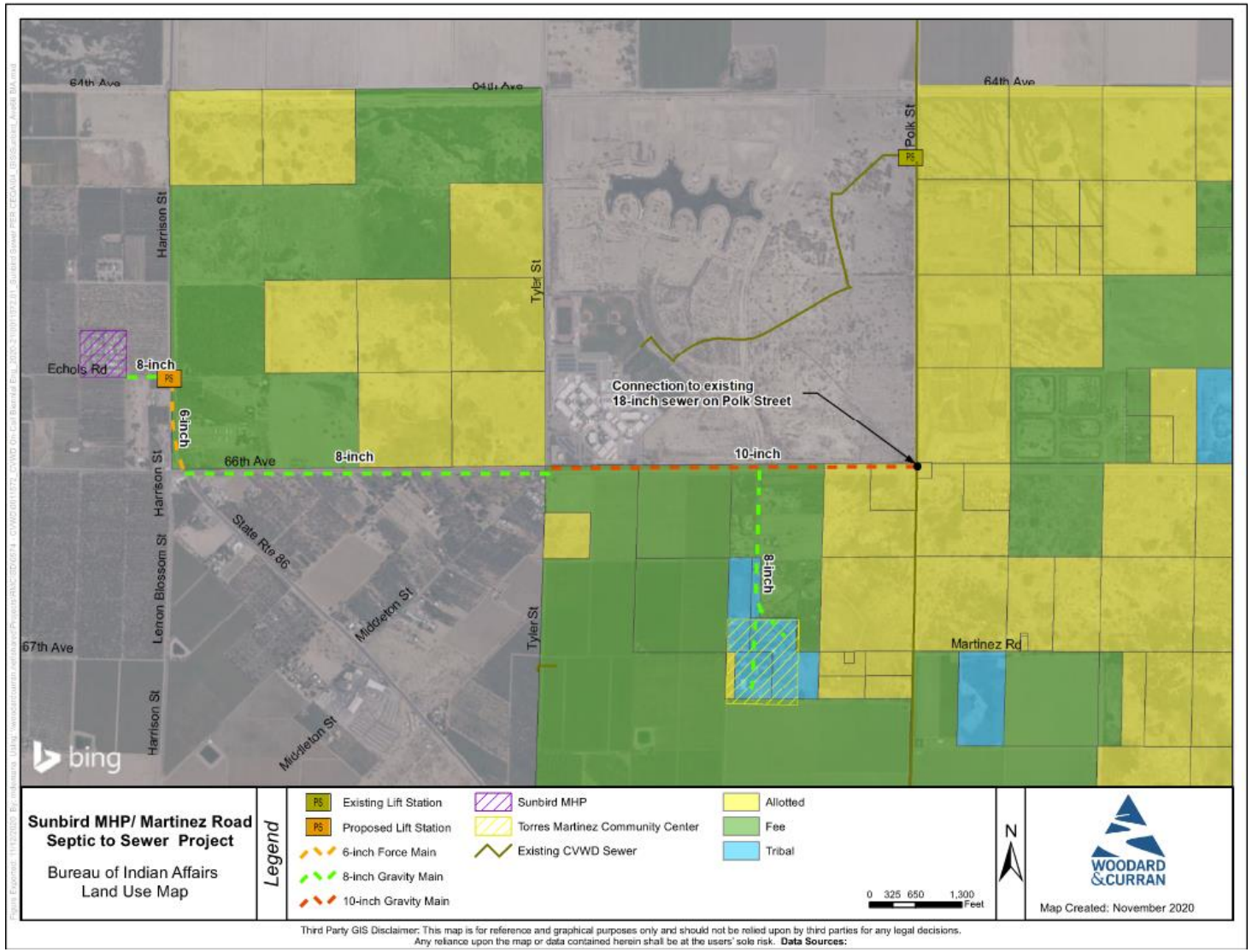


Figure 2-5: Bureau of Indian Affairs Land Use Map



2.3 Existing Facilities and Conditions

Sunbird Mobile Home Park

The Sunbird MHP is comprised of 10 acres of high-density single-family homes with a population of approximately 490 residents and 86 mobile home units. The Sunbird MHP septic system is comprised of six interconnected tanks of varying capacity. The mobile homes and tanks are connected through a network of Acrylonitrile Butadiene Styrene (ABS) pipe to serve the 86 mobile homes. A Notice of Noncompliance issued by the Colorado River RWQCB on November 3, 2016 informed the property manager (Newport Pacific) that the septic systems were in violation of the Waste Discharge Requirement Order 97-500. Newport Pacific is currently required to evacuate six community septic tanks on a bi-weekly basis for transport and disposal at CVWD's WRP-4.

The following image was captured in November 2018. It shows the view looking west from Harrison Street, down Echols Road towards Sunbird MHP.

Torres Martinez Community Center

The TMCC is located about half a mile south of Avenue 66 on Martinez Road. A mobile home park and several residential areas are also located along this stretch of Martinez Road, although they are not part of the current project. The TMCC septic system is comprised of 19 independent tanks of varying capacity on 25 acres. Buildings connect directly to the nearest septic tank. The TMCC residential area is served by nine septic tanks and includes elder apartments, single-family units and trailers quantified as 11 residential units (23 EDUs). The remaining 20-acre TMCC non-residential area is served by 10 septic tanks and encompasses tribal offices, a medical clinic and recreational facilities.

The following image was captured in November 2018 as part of the biological resources field survey (see Appendix C). It shows the view looking south, down Martinez Road towards the TMCC.

CVWD Existing Sewer Line on Polk Street

The gravity sewer pipeline along Polk Street extends about two miles south from existing LS 55-21 to Oasis Gardens Mobile Home Park. The existing 18-inch vitrified clay pipe (VCP) is designed to support the proposed project in addition to other service areas (Watson Engineering 2012).

CVWD Existing Lift Station on Polk Street

Lift Station 55-21 is located between Avenue 64 and Avenue 66 and conveys wastewater to WRP-4. The lift station currently serves the school complex and residential areas south of Avenue 64 through the Polk Street pipeline. Currently, LS 55-21 operates with one 300 gallon per minute (gpm) pump and a larger 600 gpm pump that remains on standby. The lift station currently does not have adequate capacity to serve the additional flows from Sunbird MHP and TMCC and other consolidation projects in the vicinity (Watson Engineering 2012 [CVWD Drawing No. 37830]; Albert A. Webb Associates 2003 [Coachella Valley Unified School District (CVUSD) and Kohl Joint Project Sewer Main Plan and Profile CVWD Drawing No. 29366-29378]). LS 55-21 upgrades are necessary for a consolidation project that would be constructed sooner than the Sunbird MHP and TMCC connections and is therefore not a part of this proposed project.

Water Reclamation Plant No. 4

LS 55-21 conveys wastewater through a system of force mains to WRP-4. WRP-4, first commissioned in 1986, is one of five reclamation plants operated by CVWD and is located at 63002 Fillmore Street in unincorporated Thermal, Riverside County. WRP-4 operates under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Colorado River RWQCB and adopted May 19, 2017. The Waste Discharge Requirement authorization (R7-2017-0006) became effective June 1, 2017 for discharge into the Coachella Valley Stormwater Channel.

According to the *2015 CVWD Urban Water Management Plan* (UWMP) (CVWD 2016), the volume of wastewater collected in 2015 by WRP-4 was 5,145 acre feet (AF), about 27% of the total wastewater collected by CVWD in 2015. The current maximum capacity is 9.9 MGD and the annual average influent flow was 5.1 MGD in 2017. Currently, reclaimed water from WRP-4 is discharged to the Coachella Valley Stormwater Channel. CVWD is planning a facility upgrade to include tertiary treatment for delivery into a recycled water system (CVWD 2016).

The current treatment process consists of two parallel systems. The first is a lagoon system consisting of pre-aeration ponds, aeration lagoons, and polishing ponds with a capacity of 7.0 MGD (CVWD 2016). The second is a sludge system consisting of two activated sludge basins, two secondary clarifiers, and sludge handling facilities with a capacity of 2.9 MGD. The combined effluent from both systems is disinfected and de-chlorinated prior to discharge into the Coachella Valley Stormwater Channel (RWQCB 2017).

2.4 Proposed Project Description

A layout map showing the location of the proposed project components is presented in **Figure 2-2**. New infrastructure for the proposed project would consist of the following:

1. Approximately 19,625 feet gravity sewer pipeline extension and force main, with stub-outs along the proposed alignment for future connections;
2. A new lift station; and
3. Onsite work, including abandonment of existing onsite community septic systems.

2.4.1 Pipelines

Sunbird MHP would be served by an 8-inch pipeline constructed along Echols Road. A new lift station at the intersection of Echols Road and Harrison Street (see *Section 2.4.2* below) would discharge to an 8-inch gravity pipeline in Avenue 66 through a 6-inch force main. The Avenue 66 trunk line would extend from Harrison Street to Tyler Street, where it would increase in size from 8-inch to 10-inch. From Tyler Street, the 10-inch trunk line would continue along Avenue 66 to Polk Street where it would connect to an existing 18-inch pipeline. In addition, an 8-inch lateral would be constructed within Martinez Road to

connect the TMCC to the proposed trunk line in Avenue 66 between Tyler and Polk Streets.

Eight-inch stub-outs would be constructed along the proposed alignment on Avenue 66 for future connections to three trailer parks: one located at the intersection of Avenue 66 and Martinez Road; one located at Avenue 66 and Tyler Street; and one located on the east side of Harrison Street just north of Avenue 66.

Proposed project pipeline features would include:

- Sunbird MHP Sewer Gravity Lateral (1,175 linear feet [LF] of 8” pipeline)
- Echols Road Sewer Gravity Lateral (815 LF of 8” pipeline)
- Harrison Street Sewer Force Main (1,304 LF of 6” pipeline & lift station)
- Avenue 66 Sewer Gravity Main (5,045 LF of 10” pipeline)
- Avenue 66 Sewer Gravity Main (5,200 LF of 8” pipeline)
- Martinez Road Sewer Gravity Lateral (2,996 LF of 8” pipeline)
- TMCC Sewer Gravity Lateral (2,016 LF of 4, 6, and 8” pipelines)

The proposed force main is a 6-inch diameter polyvinyl chloride (PVC) pipe. The recommended force main alignment has two 45-degree elbow fittings to reduce the potential for stoppages where a 90-degree change of direction in the force main is required. The force main would have a pipe cover of four to 12 feet measured from the top of the pipe to the ground surface elevation. The final design for the force main shall follow all requirements in the CVWD DDM (CVWD 2019).

Pipeline Construction Methods

The pipeline would be installed below grade within existing paved streets, County of Riverside roadway rights-of-way, and tribal land/roadways. Preliminary design indicates that the Avenue 66 and Martinez Road pipelines would have an average depth of 10 feet and a maximum of 14 feet. The pipeline depth along Echols Road would approach a maximum of 25 feet. Pipeline trenching widths would be three to four feet. Concrete encasement is recommended for sewer pipelines that cross under domestic water pipelines and do not meet CVWD’s minimum vertical separation of three feet from outer diameter to outer diameter. The proposed project does not propose pipelines that cross underwater. The proposed force main would have a minimum cover of four feet and a maximum cover of 12 feet from the proposed finish grade to the top of pipe. There would be a total of 50 manholes for the entire proposed project. Most of the manholes (27) are proposed along Avenue 66 to provide access for inspection and maintenance and are properly spaced to meet the DDM requirement (manhole spacing shall not exceed 400 feet).

Typical pipeline construction processes are described below:

Staging Area(s) – At various locations along the construction route, staging areas would be required to store pipe, construction equipment, and other construction-related material. Potential staging areas include vacant private and public land, parking lots, and segments of closed traffic lanes.

Surface Preparation – Surface preparation involves removing structures (such as fences or posts), pavement, and/or vegetation from the trenching areas. Equipment may include jack hammers, pavement saws, graders, bulldozers, loaders, and trucks.

Trench Excavation/Shoring - A backhoe, excavator, or trencher would be used to dig trenches for pipe installation. In general, trenches would have vertical side walls to minimize the amount of soil excavated, and the area needed for the construction easement. Soils excavated from the trenches, if of suitable quality, would be stockpiled alongside the trench or in staging areas for later reuse in backfilling the trench. If not reusable, the soil would be hauled off site for disposal. Disposal options include use as cover material at sanitary landfills and use as “clean fill” at other sites. In general, pipe trenches would be three to four feet wide and ten to 14 feet deep.

Dewatering is anticipated to be necessary due to the potential for rising groundwater. Groundwater is expected to be encountered when project excavation depths reach 13-16 feet. Most of the construction depth would be, on average, ten to 14 feet deep; however, certain segments could be installed as deep as 25 feet. Any proposed sewer pipelines installed at depths below 13 feet are expected to require dewatering. Specific locations where dewatering would be necessary would be determined during final design.

Pipeline trenches, in any given location, would be open for two to three days on average. During construction, vertical wall trenches would be temporarily “closed” at the end of each work day, by covering with steel plates or backfilled. Trenches would be backfilled with either the excavated soil or imported material. Dump trucks would be used to deliver imported, engineered backfill material to stockpiles near the trenching operation. Native soil would be reused for backfill to the greatest extent possible; however, the soil may not have the properties necessary for compatibility and stability.

Surface Restoration – After the pipe is installed, the ground surface areas would be restored. When pipe is installed on paved roadways, the asphalt would be patched and restored to pre-construction conditions. When the pipe is installed in dirt access roads, the dirt would be graded and compacted. In natural or vegetated areas, native plantings would be installed as required.

2.4.2 Lift stations

The existing Polk Street sewer pipeline is tributary to LS 55-21 and discharges to WRP-4. LS 55-21 currently does not have enough capacity to service the proposed project and

other consolidation projects in the vicinity. LS 55-21 upgrades are necessary for a consolidation project that would be constructed sooner than the Sunbird MHP and TMCC connections and is therefore not a part of this proposed project.

A new lift station will be constructed at the southeast corner of Harrison Street and Echols Road. The proposed lift station may include the following components, to be verified during final design: debris capture depending on the wastewater characteristics; backup power to avoid sanitary sewer overflows (SSOs) during an outage; sulfide treatment could be needed if the wastewater residence time gets too high; fats-oils-grease (FOG) capture; supervisory control and data acquisition (SCADA) to monitor health of the station but controls would be local. The number of active pumps would be determined during final design of the project. Per CVWD standards, there would be at least two pumps because the sewer lift stations are typically operated under a lead-lag system whereby the lead pump runs until the demand on the system is too great for the pump to meet, at which point the lag pump initiates until demand is met. The estimated amount of energy consumed by the pumps at the new lift station would be 24,000 kWh per year. The lift station site would cover one-half acre once construction is complete. The CVWD DDM (CVWD 2019) requires the lift station be located 100 feet away from any nearby structure and include a fence around the system at a 25-foot setback and another 25-foot buffer zone between the fence and the surrounding environment. The lift station and appurtenances would be at least five feet away from the fence wall. The new lift station would be housed in a shade structure that would be approximately seven feet tall, 20 feet long, and four feet wide.

Electrical service at the new lift station would be provided by Imperial Irrigation District (IID). IID would construct: a new 40-foot distribution pole; a new 75 kilovolt-ampere (kVA) transformer; current transformers inside the meter cabinet and new meter; and conductors from the new pole to the transformer (3 – 1/0: Phases A, B, C 15kV insulated. Neutral is concentric to each wire) and from transformer to meter cabinet (4 – 1/0: Phases A, B, C & Neutral 600V insulated). The construction contractor would be responsible for constructing one used and one spare 2-to-5-inch primary riser and conduit from the pole to the transformer pad; a small transformer pad; a 2 to 4 inch secondary riser and conduit from the transformer pad to the meter cabinet. CVWD will continue to consult with IID staff related to the design, installation or improvements to the new and/or improved project features.

Lift Stations Construction Methods

Construction activities involved in the construction of a new lift station typically include the following:

Site Preparation – This phase of construction may involve brush removal. No structural demolition would be needed. Construction survey would define the limits of the new facilities.

Earthwork – After the site is cleared of underbrush, grading would begin. It is expected that the contractor would attempt to balance cut and fill quantities within the construction area to the extent feasible. Material excavated would be used to create screening berms and/or spread across other areas of the site to establish a preliminary grade for forming concrete slabs. Most excavated materials would be used on site. Following rough grading, additional excavation would bring the site to final grade and allow for preparation for underground piping and structural slabs. Depending on location, excavations could require dewatering of shallow groundwater.

Additional site work would include paving, temporary and permanent security fencing, site lighting, installation of additional access roads and staging areas to accommodate construction, operation, and maintenance.

Structural Improvements – Prior to pouring concrete, structural forms, rebar, and conduits would be installed for the lift station. After the concrete is poured, it would be finished and cured before the forms are removed. After the concrete footing, slab, and walls are poured, the overhead structural steel and roof decking would be erected, or concrete roof would be poured.

Paving – All access roads would be paved. Paving would be performed incrementally throughout the site area as large construction and non-rubber tread equipment are removed from the site.

Electrical/Instrumentation – After the structure is erected or retrofitted, electrical equipment (e.g., machinery control consoles, switchboards, and lighting) would be installed. Site work such as installing pull boxes, conduits, and cables would continue. After roofs on the building is completed, flow meters, level probes, pressure instruments, process analyzers, and other instrumentation would be installed. Additionally, sampling and monitoring equipment would be installed.

Startup and Testing – Lift station personnel (i.e., engineers, inspectors, operators, maintenance crews, and instrumentation specialists) and the contractor would work with the equipment vendors to understand how each piece of equipment would operate and function. Under supervision, the construction contractor would start up and test the equipment on site to guarantee that pumps, motors, valves, monitoring and communication equipment are functional, meet design standards and all necessary regulatory performance criteria.

2.4.3 Onsite work

Onsite construction includes connections to the proposed sewer system and abandonment of six community septic systems at the Sunbird MHP site and 19 community septic systems at the TMCC. The process for abandonment of the community septic systems would depend on the size and depth of the septic system. The septic systems would be abandoned in place. Abandonment of the onsite septic systems is expected to take approximately two months. As shown on the following page, the two

months of septic system abandonment work would occur after the proposed facilities have been constructed and have been tested to be operable. Testing could take up to three months. The first phase of onsite work to abandon the existing septic tanks would involve import of approximately 2,000 gallons of cement slurry to fill each septic tank. The second phase would involve excavation with a crew of three workers, a dump truck and backhoe, and excavation to depths of four to 10 feet to backfill the septic tank with drain rock and the cement slurry.

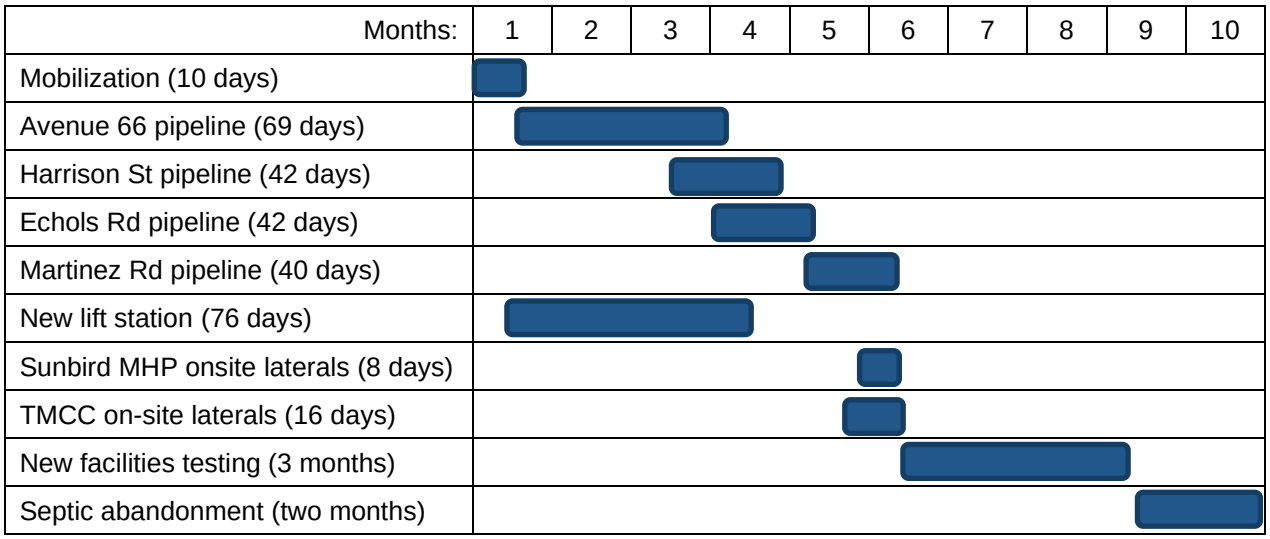
2.5 Project Construction

2.5.1 Construction Schedule

Construction is anticipated for the duration of ten months. The project's maximum area of disturbance during the construction period would encompass about three acres, not including staging areas. Disturbance activities would occur in existing roadways, on existing access roads and in vegetated areas adjacent to the access roads. Disturbed areas would be restored to original grade and vegetated areas would be replanted with the appropriate native species.

Construction of the pipeline would proceed at a rate of approximately 150 linear feet per day. During construction, the project would generate trips with construction crews, materials deliveries, and export/import of fill material from excavation and trenching.

Project construction activity is anticipated to occur continuously between the hours of 7:00 a.m. and 6:00 p.m., Monday through Friday only (not on the weekend) and excluding federal holidays, which is compliant with the County of Riverside Ordinance Regulating Noise. The expected timing of each phase of construction are as follows:



2.5.2 Construction Standards

CVWD would implement the following standard construction measures with the project.

Drainage / Erosion Control - During construction, existing storm water facilities including catch basins, manholes, and ditches would be protected using erosion control measures. Design standards outlined in the *Riverside County Whitewater River Region Stormwater Quality Best Management Practice Design Handbook for Low Impact Development* (Riverside County Flood Control and Watershed Conservation District [FCWCD] 2014) would be implemented by the construction contractor as applicable to the project site's stormwater drainage features. In addition, the construction contractor would be required to obtain a Construction General Permit pursuant to NPDES, which would require development of a construction SWPPP and implementation of best management practices to prevent polluted runoff from leaving the construction site.

Groundwater Dewatering - The proposed pipe would be installed at an average depth of ten to 14 feet below ground surface, and a maximum depth of 25 feet. If encountered at this depth, groundwater would be controlled using standard methods including stone sumps wrapped in filter fabric. During final design, another geotechnical investigation would be conducted to determine the current level of groundwater along the entire proposed alignment and recommend a dewatering plan based on the final design for the project. The dewatering plan would be determined during final design. The water collected during dewatering would be discharged to an irrigation lateral. Refer to **Mitigation Measure GEO-1**.

Traffic Controls - Construction of the proposed project may necessitate individual traffic lane closures. Traffic control requirements would require that emergency crews have access, as needed, and that the contractor coordinates the location of the work daily for routing of emergency vehicles. Traffic control would also require the contractor to make reasonable efforts, wherever possible, to provide landowners access to their property and patrons access to businesses during execution of the work. The construction contractor may be required to have a County-approved traffic control plan. Refer to Mitigation Measure **TRA-1 Traffic Control Plan**.

Air Quality / Dust Suppression –The contractor would be required to comply with the California Air Resources Boards (CARB) In-Use Off-Road Diesel-Fueled Fleets Regulations, which would limit vehicle idling time to five minutes, restrict adding vehicles to construction fleets that have lower than Tier 3 engines, and establish a schedule for retiring older, less fuel-efficient engines from the construction fleet. In order to reduce emissions of dust and particulate matter during construction, prior to grading or excavation, the Construction Contractor would be required to prepare a Fugitive Dust Control Plan, subject to the approval of CVWD and South Coast Air Quality Management District (SCAQMD), to comply with SCAQMD Rule 403 and Rule 403.1. As a standard condition, any ground surface area that is temporarily disturbed by construction activities must be entirely covered by the Fugitive Dust Control Plan and must be properly re-stabilized to satisfy the SCAQMD performance standards. The Fugitive Dust Control Plan

shall include, but not be limited to, dust control best management practices identified in the Coachella Valley Fugitive Dust Control Handbook, such as:

- Measures to prevent sediment track-out onto public roads.
- Measures to prevent visible dust emissions from exceeding a 20-percent opacity.
- Measures to prevent visible dust emissions from extending more than 100 feet (vertically or horizontally from the origin of a source) or crossing any property line.
- Other dust control measures may include construction phasing, maintenance/ cleaning of construction equipment, soil stabilization, installation of track-out prevention devices, and wind fencing.
- The Fugitive Dust Control shall identify any areas that shall remain undisturbed by the construction activities.
- Implementation of the Fugitive Dust Control Plan shall occur under the supervision of an individual with training on Dust Control in the Coachella Valley and shall be enforceable by SCAQMD inspectors during the period of construction.

Geotechnical Standards - Although construction of the proposed project would create limited potential for adverse impacts, the following standard conditions would be incorporated:

- **Training.** All construction personnel would be briefed on project-specific circumstances relating to construction safety and erosion control.
- **Code Compliance.** All site preparation and construction would comply with the design provisions contained within the project specific Geotechnical Reports.
- **General Compliance.** All trench and backfill grading would be performed in accordance with typical CVWD specifications.
- **Seismic Design Parameters**. The project would follow seismic design parameters from USGS, outlined in **Table 2-1** below. Geologic observations will be performed during grading. The project design features will include:
    - **Site preparation and construction** should comply with the structural design provisions for Seismic Zone 4 in the Uniform Building Code;
    - **Excavations** should include shoring or slope inclinations in conformance with California Occupational Safety and Health Administration (OSHA) regulations for Type C soils; and
    - **Pavements** should be designed to meet Caltrans or other acceptable standards.

Table 2-1: USGS Seismic Design Parameters

Seismic Parameter	Recommended Value
Site Class	E*
Mapped Spectral Acceleration-S_s	1.500 g
Mapped Spectral Acceleration-S_1	0.637 g
MCE Spectral Acceleration-S_{ms}	1.350 g
MCE Spectral Acceleration-S_{m1}	1.528 g
Design Spectral Acceleration-S_{ds}	0.900 g
Design Spectral Acceleration-S_{d1}	1.019 g
Peak Ground Acceleration-PGA	0.555 g

*Site Class E (Soft Clay) - Where a site does not qualify under the criteria for Site Class F and there is a total thickness of soft clay greater than 10 ft (3 m) where a soft clay layer is defined by s_u < 500 psf (25 kPa), w ≥ 40 percent, and PI > 20, it shall be classified as Site Class E. (s_u-undrained shear strength, w-moisture content, PI- Plasticity Index) (American Society of Civil Engineers)

2.6 Operation and Maintenance

CVWD would continue to operate its sewer system with no operational modifications. The project pipelines would require routine maintenance, once operational. The new lift station would be controlled locally but monitored via a SCADA system. New operation and maintenance (O&M) trips to the new lift station, and to inspect the pipelines, would be incorporated into CVWD's existing sewer system operations. The estimated amount of energy consumed by the pumps at the new lift station would be 24,000 kWh per year. The proposed project would not result in a significant net change in O&M activities.

2.7 Permits or Approvals Anticipated

The permits and approvals listed in **Table 2-2** may be required for project construction. The types of permits necessary to construct the project would be confirmed during the design phase.

Table 2-2: Anticipated Permits and Approvals

Agency	Permit or Approval	Status
Local		
Torres-Martinez Desert Cahuilla Indians	Right of Entry	Pending
Torres-Martinez Desert Cahuilla Indians	Easements for CVWD facilities located on Tribal property	Pending
CVWD	Service Agreement with Sunbird Mobile Home Park	Draft
CVWD	Service Agreement with Torres-Martinez Desert Cahuilla Indians	Draft
CVWD	CEQA Documentation and Project Approval	Draft
County of Riverside Transportation Department	Encroachment Permit	Pending
County of Riverside	Contractor will be responsible for acquiring a grading permit	Prior to construction
County of Riverside	Septic Abandonment Permits	After connection to sewer complete
SCAQMD	Permit to Construct	Prior to construction
SCAQMD	Fugitive Dust Control Plan	Prior to construction
State		
California Department of Transportation (Caltrans)	Encroachment Permit	Pending
RWQCB	National Pollutant Discharge Elimination System NPDES Discharge Permit for CVWD's Water Reclamation Plant No. 4	Approved
RWQCB	Recission of Waste Discharge Requirements	After connection to sewer complete
State Water Resources Control Board (SWRCB)	NPDES General Permit for Storm Water Discharges associated with Construction Activities	Pending
SWRCB	Initial Funding Agreement	Pending
SWRCB	Final Funding Agreement	Pending

3. ENVIRONMENTAL CHECKLIST FORM

1. **Project title:** Avenue 66 Trunk Sewer Project

2. **Lead agency name and address:** Coachella Valley Water District
   75515 Hovley Lane East
   Palm Desert, CA 92211

3. **Contact person and phone number:** William Patterson
   Environmental Supervisor
   Coachella Valley Water District
   75515 Hovley Lane East
   Palm Desert, CA 92211
   (760) 398-2651 x 2775

4. **Project location:** The proposed project site is located in the eastern Coachella Valley area of Riverside County, California in the community of Thermal. The project would be generally located within roadway rights-of-way on Avenue 66 between Harrison Street and Polk Street, and within roadway rights-of-way on Echols Road and Martinez Road. It also consists of work within the following parcels: Sunbird Mobile Home Park (APN: 751-060-026); Torres-Martinez Community Center (APNs: 751-230-002; 751-210-008; and 751-210-009); and a new lift station site (APN: 751-060-012).

5. **Project sponsor's name and address:** Same as Lead Agency

6. **County of Riverside General Plan designation:** Agriculture, Commercial Retail, High Density Residential, Tribal Lands, Medium Density Residential, Public Facilities, Medium High Density Residential, Very High Density Residential

7. **County of Riverside Zoning:** A-1-10 (Light Agriculture); C-1/C-P (General Commercial); W-2 (Controlled Development Areas); SP Zone (The Kohl Ranch Specific Plan [HDR – High Density Residential; MHDR – Medium High Density Residential; OS – Open Space; PF – Public Facility/School)

8. **Description of project**: The proposed Avenue 66 Trunk Sewer Project would extend CVWD sewer facilities along Avenue 66 from Polk Street to Harrison Street to provide sanitation service to the Sunbird Mobile Home Park (located on Echols Road near Harrison Street) and the Torres-Martinez Community Center (located south of Avenue 66 between Polk and Tyler Streets). The proposed project involves installation of 19,625 feet of sewer pipeline, and a new lift station.

9. **Surrounding land uses and setting:** The project is surrounded primarily by vacant land and irrigated agriculture. Residential, commercial, and industrial developments are scarce. Most residential developments are well-established trailer parks. Existing

development within the project area consists of multi-family residential (trailer parks or mobile home parks), single-family residential, community-services, commercial, agricultural land, education (Toro Canyon Middle School and Las Palmitas Elementary School) and the Torres-Martinez Community Center (TMCC). The TMCC includes administration buildings, a health clinic, recreational areas, roads, and residential units. Tribal lands are scattered throughout the project area: the Torres-Martinez Desert Cahuilla Indian properties are located north and south of the proposed project alignment along Avenue 66.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.). Refer to Table 2-2: Anticipated Permits and Approvals.

Local:

- Torres-Martinez Desert Cahuilla Indians – Right of Entry
- Torres-Martinez Desert Cahuilla Indians – Easements for CVWD facilities located on Tribal property
- CVWD – Service Agreement with Sunbird Mobile Home Park
- CVWD – Service Agreement with Torres-Martinez Desert Cahuilla Indians
- Riverside County – Encroachment permit
- Riverside County – Grading permit
- Riverside County – Mobile Home Park/Polanco Park Permit
- SCAQMD – Fugitive Dust Control Plan
- SCAQMD – Permit to Construct

State:

- Caltrans – Encroachment Permit
-
- SWRCB –NPDES General Permit for Storm Water Discharges associated with Construction Activities
- SWRCB – Initial Funding Agreement
- SWRCB – Final Funding Agreement

11. Have California Native American tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code section 2180.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On April 1, 2019, CVWD mailed formal AB 52 consultation letters to the eight (8) local Native American tribal governments which have previously requested to consult under AB 52. CVWD received several written response letters within the 30-day response timeframe, and one formal request for consultation in July 2019. Staff met with the tribal staff to discuss the project. Refer to *Section 3.18 Tribal Cultural Resources* for further discussion.

The results of the NAHC Sacred Land Files included a contact list of Native American individuals or organizations who may have additional information regarding sacred resources in the area and who should be contacted regarding the proposed scope of the project. Letters were mailed and follow-up phone calls and/or emails were made to all individuals and groups on the list. The results of the outreach to Native American individuals and organizations can be found in the Cultural Resources Report in Appendix C and are summarized in *Section 3.18 Tribal Cultural Resources*.

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. With adherence to the mitigation program identified within this IS/MND, the potentially significant impacts would be reduced or minimized to a less than significant level.

- ☐ Aesthetics
- ☐ Agriculture & Forestry Resources
- ☐ Air Quality
- ☒ Biological Resources
- ☒ Cultural Resources
- ☐ Energy
- ☒ Geology / Soils
- ☐ Greenhouse Gas Emissions
- ☒ Hazards & Hazardous Materials
- ☒ Hydrology / Water Quality
- ☐ Land Use / Planning
- ☐ Mineral Resources
- ☒ Noise
- ☐ Population / Housing
- ☐ Public Services
- ☐ Recreation
- ☒ Transportation
- ☒ Tribal Cultural Resources
- ☐ Utilities / Service Systems
- ☒ Wildfire
- ☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Prepared by: _____ 9/29/2021
Haley Johnson
Environmental Planner /Project Manager
Woodard & Curran
Date

Reviewed by: _____ 9/30/2021
William Patterson
Environmental Supervisor
Coachella Valley Water District
Date

Submitted by: _____ 9/30/21
Steve Bigley
Director of Environmental Services
Coachella Valley Water District
Date

This page is intentionally blank.

3.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☒	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☒	☐	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion

The proposed project proposes installation of sewer infrastructure serving the Sunbird MHP and TMCC. Both sites are located in the unincorporated community of Thermal in the eastern Coachella Valley in Riverside County. The Coachella Valley is relatively flat, surrounded by undeveloped northwest-southeast trending mountainous areas to the east (Mecca Hills and Joshua Tree National Park) and west (Santa Rosa and San Jacinto Mountains). Portions of the eastern Coachella Valley are relatively undeveloped and are composed largely of agricultural lands. The general visual character of the eastern Coachella Valley includes date groves and agricultural uses; desert oasis areas; cove-like communities at the base of the Santa Rosa Mountains; the Whitewater River/Coachella Valley Stormwater Channel; the Salton Sea State Recreation Area; and desert and mountain vistas (County of Riverside 2014).

The current land uses surrounding the project area consists of scattered residential and mobile home parks, agricultural lots, open, desert (vacant) parcels, a middle school facility, and paved roadways (see **Figure 2-4** and **Figure 2-5**). Specifically, the Sunbird MHP is surrounded by date-palm groves, and cultivated fields and residential housing surrounds the TMCC.

The proposed infrastructure includes new sewer pipelines that will connect the two communities to the existing CVWD sewer system within Polk Street. The new sewer

pipelines will be located underground, and therefore out of the public viewshed. The project also proposes a new lift station near the intersect of Echols Road and Harrison Street. According to preliminary design, the proposed lift station would contain features both underground and above ground; with 8-foot perimeter fencing on a half-acre. There would be no buildings, only a shade structure. The lift station itself will be 140 square feet. CVWD's DDM requires the lift station be located 100 feet away from any nearby structure and will include a fence around the system at a 25-foot setback and another 25-foot buffer zone between the fence and the surrounding environment. The lift station and appurtenances would be at least 5 feet away from the fence wall (DDM, 2019). New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer.

CVWD's *Coachella Valley Water Management Plan 2010 Update Environmental Impact Report* (CVWMP 2010 Update EIR) notes that factors that determine the conspicuousness of a development are slope, existing vegetative screening, surface patterns, soils, geology, and prominent positions in the landscape (CVWD 2011).

a, c) Less than Significant with Mitigation Incorporated

The *Riverside County General Plan* (County of Riverside 2015) defines scenic vistas as points accessible to the general public that provide a view of the countryside. The perception of scenic vistas from a particular setting vary according to location and the surrounding context. Views are influenced in part by the presence and intensity of man-made neighboring improvements, such as structures, overhead utilities, and vegetation.

The CVWMP 2010 Update EIR indicates that the Coachella Valley floor is considered generally low in landscape quality, due to the lack of diversity, and vivid features or contrasts. It is also not spatially distinct and considered degraded by manmade intrusions. The CVWMP 2010 Update EIR study area, which includes the Project Area, is considered to have a low Visual Absorptive Capacity (VAC), which refers to the potential of the landscape to accept or absorb manmade changes without prominent visual alteration. The area is considered to have a low VAC due to the sparse vegetation, monochrome and evenly textured surfaces, and erodible ground. However, the mountains bordering the Coachella Valley provide a dramatic backdrop to residents and motorist. Distant views of the Little San Bernardino Mountains north of the project site and more prominent views of the Santa Rosa Mountains west and southwest of the Project are partially obstructed to motorists travelling on 66th Avenue and Harrison Street by the agricultural lots and vegetation that currently existing in the area.

The proposed lift station (along Harrison Street), would be consistent with the existing visual setting by implementing **Mitigation Measure AES-1**. **Mitigation Measure AES-1** would require that the site house relatively small, low structures, typically painted with pale earth tones to blend with the native soils. Therefore, it would remain consistent with the existing commercial and agricultural landscape and having no aesthetic impact. Pipelines would be buried and have no visual impact.

Project implementation may result in short-term impacts regarding the visual character or quality of the Project Area as a result of disturbed roadways, excavation, trenching, placement of materials and staging of equipment. Construction activities include the excavation of the existing road surface where the sewer pipeline would be placed. This short-term effect on visual continuity is considered negligible because after construction the alignment would be returned to existing conditions or otherwise improved. The sewer pipelines would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed lift station at the corner of Harrison Street and Echols Road, would be small and low in design (7 feet high) on one-half acre site with a surrounding 8-foot fence. The structure would blend with the native soils and be surrounded by rock gravel in character with the site. Therefore, construction is not expected to substantially degrade the existing visual character or have a substantial adverse effect on a scenic vista. Less than significant impacts are expected.

b) No impact

The proposed project is not within view of a State or County designated scenic highway. Highway 74 is the closest Officially Designated State Scenic Highway to the project site, lying approximately 16 miles northwest of the project property. State Route 111, from State Route 195 near Mecca, to Bombay Beach on the Salton Sea, is considered an Eligible State Scenic Highway, however, it is not officially designated. The closest portion of State Route 111 lies almost 6 miles east of the proposed lift station on Harrison Street. Interstate 10, a County Eligible Scenic Highway is approximately 9.5 miles north of the project. Due to the project's distance from State Highway 74, State Route 111 and Interstate 10, the project is not located within view of a State or County designated or eligible viewshed. Construction of the proposed project would not damage trees, rock outcroppings, historical buildings, or any other visible feature other than existing road surfaces. No impacts are anticipated.

d) Less than Significant Impact

Construction of the proposed project may create a temporary source of light from construction equipment parked onsite and potentially security lighting at staging areas, but the impact would cease upon completion of construction. Lighting needs during construction will be minimal and temporary, as construction-related activity would occur during daylight hours.

The proposed project is located within the Mount Palomar Nighttime Lighting Policy Area, therefore, Zone B lighting regulations from the *East Coachella Valley Area Plan* apply (County of Riverside 2016). The proposed project would install one high pressure sodium type security light mounted on a pole at least 15 feet above the ground at the new proposed lift station.

The proposed project would create a new source of light following construction because the project introduces a permanent security light. However, the light would not adversely affect day or nighttime views within the project area. The new light would be consistent

with other existing security lighting in the vicinity of the proposed lift station. For example, the existing streetlights and gas station lighting at the intersection of Harrison Street and Avenue 66, approximately 1,200 feet south of the proposed lift station. Impacts would be less than significant.

Mitigation Measures:

AES-1: Design of Aboveground Structures. To minimize visual impacts on public views, permanent, aboveground structures (lift station) shall be designed to blend into the existing visual character of their surroundings, including building and wall height, color, and exterior architectural treatments.

3.2 Agriculture and Forestry Resources

Would the Project:	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

Discussion

The proposed project includes the installation of 19,625 linear feet sewer infrastructure within the existing paved roads and public right-of-way, located primarily along Avenue 66 in unincorporated Riverside County. In addition, the project includes installation of sewer facilities along Martinez Road to serve the TMCC, and installation of sewer facilities along Echols Road to serve the Sunbird MHP. A new lift station on the east side of Harrison Street, near the intersection of Echols Road would be constructed. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer.

According to the California Department of Conservation (DOC 2019) and shown in **Figure 3-1**, a large portion of the project vicinity is composed of important farmland, including prime farmland and farmland of local importance. The pipeline alignment runs adjacent/through prime farmland, farmland of local importance, urban and built up land, and "other" land. According to the DOC, Urban and Built-Up Land is typically defined as land occupied by structures with a building density of at least 1 unit to 1.5 acres and is primarily used for purposes including residential, industrial, commercial, institutional, railroads, and airports. Other Lands are those not included in any other mapping category and can be reserved for vacant, nonagricultural lands surrounded by urban development. Prime Farmland has characteristics that allow it to sustain long-term high yields of agricultural production. The land is required to have been used for production of irrigated crops within the last four years. Farmland of Local Importance, as defined in Riverside County, are soils that would be classified as Prime and Statewide but lack available irrigation water.

The proposed lift station on the southeast corner of Echols Road and Harrison Street would cover one-half acre and is located on prime farmland. Per DOC mapping of Williamson Act enrolled lands, the project area is not located on lands protected by a Williamson Act contract, although parcels within the vicinity of the project area are covered by a Williamson Act contract (DOC 2016).

A portion of the project area is zoned as Tribal lands and is surrounded by public facilities, commercial retail, residential and agriculture land use designations as shown in **Figure 3-2**, a cropped version of the 2016 Eastern Coachella Valley Land Use Map. **Figure 2-5** demonstrates the Bureau of Indian Affairs land use parcels. Most facilities in the proposed project would be constructed within public right-of-way of established roadways or within property currently owned by the MHP owner. Portions of the proposed project are located on Tribal lands of the Torres-Martinez Desert Cahuilla Indians (such as the pipeline along Martinez Road), as shown in **Figure 3-1**. Easements may be needed for CVWD facilities located within Tribal property.

Figure 3-1: California DOC Important Farmland Map

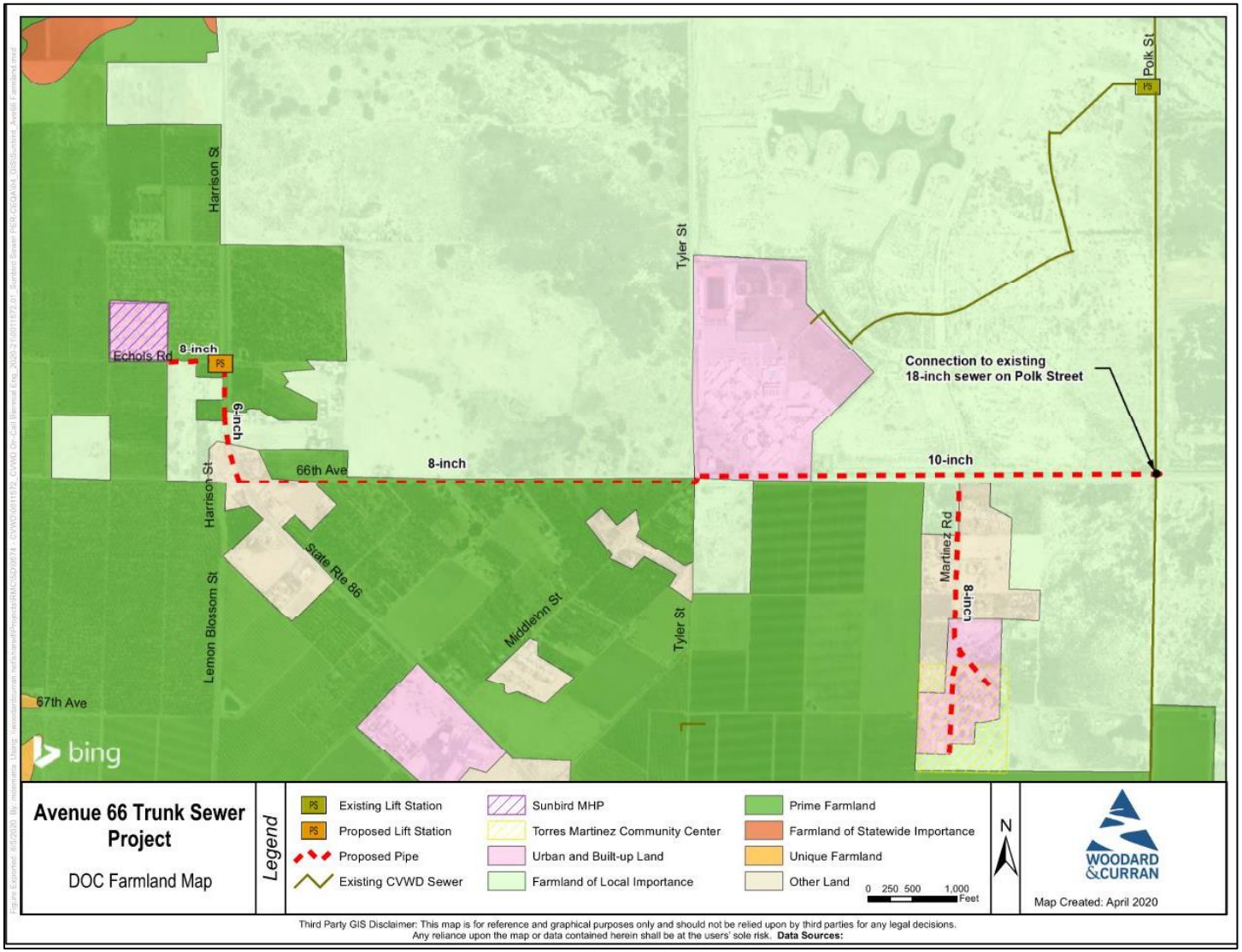


Figure 3-2: 2016 Riverside County's Eastern Coachella Valley Land Use Map

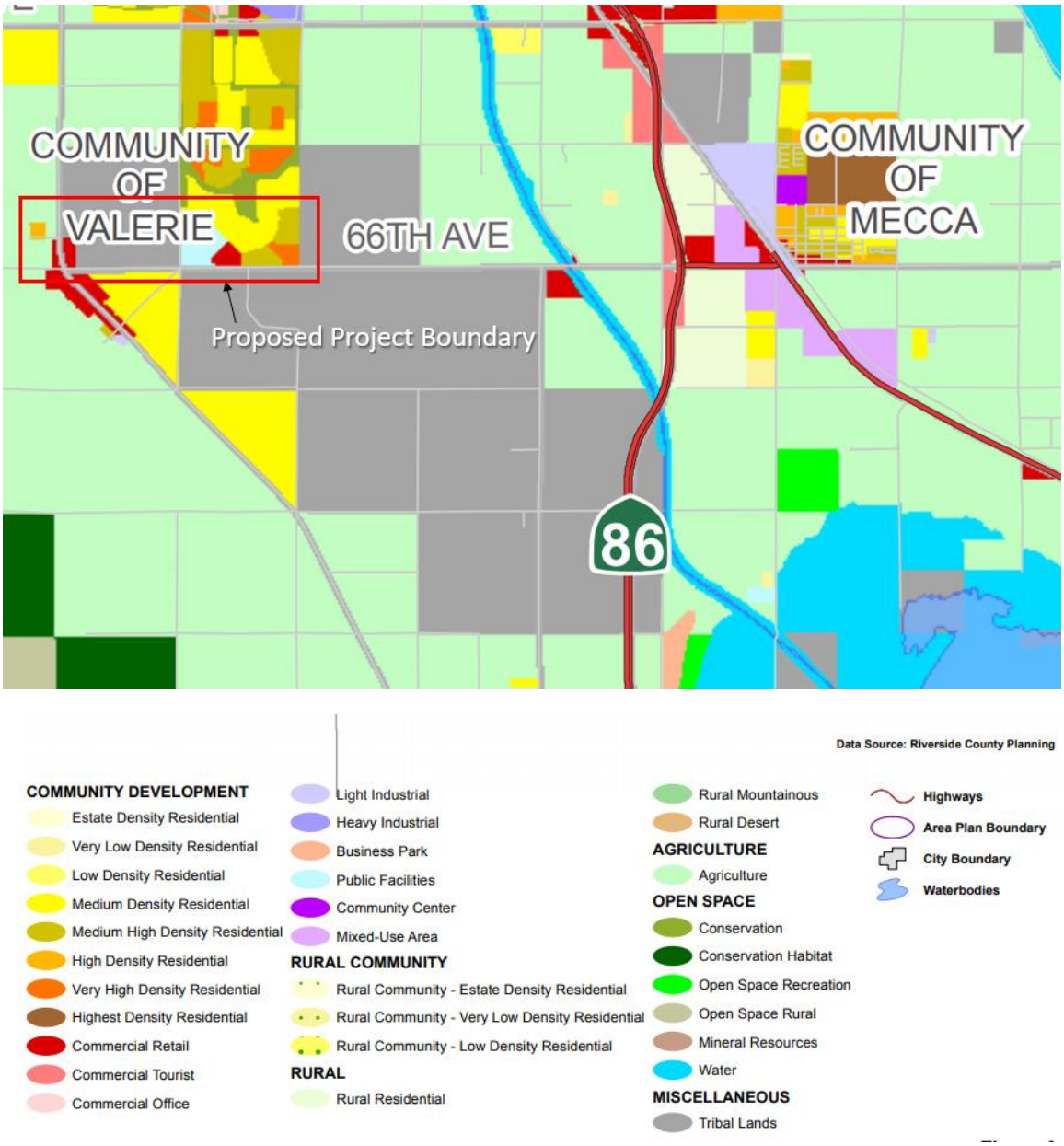
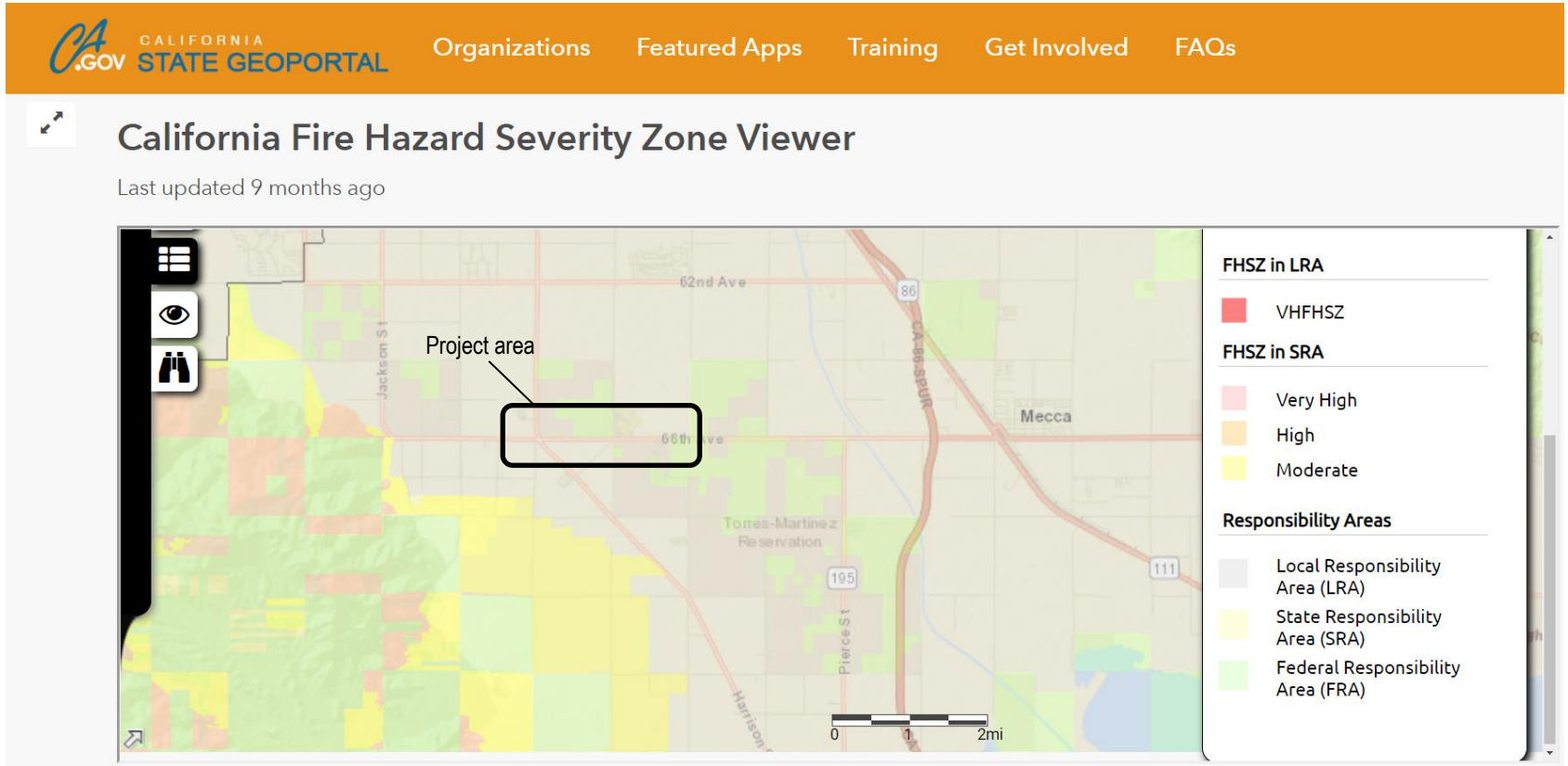


Figure 3-3: CalFire Map



The California Department of Forestry and Fire Protection (Cal Fire) published maps (Cal Fire 2006) which classifies land cover throughout the state into eight major forest or range-related classes, including Forestland - Conifer Forest, Forestland - Hardwood Forest, Forest and Rangeland - Conifer Woodland, Forest and Rangeland - Hardwood Woodland, Rangeland - Shrub, Rangeland - Desert, Rangeland - Herbaceous, and Rangeland - Wetland. Cal Fire also classifies land cover throughout the state into four non-forest and rangeland classes including Urban, Barren/Other, Water, and Agriculture. The project area is primarily designated as Agriculture with small pockets of Urban land (Cal Fire 2006). There are no designated forest lands within the project area.

a, e) Less than Significant Impact

A majority of the project area outside of the public right-of-way is mapped by the DOC as important farmland, including prime farmland and farmland of local importance. The proposed project would be constructed within roadway rights-of-way, tribal land, as well as on privately owned properties to connect CVWD's sewer infrastructure to the properties. The majority of the proposed project components would be located below-grade and ground surfaces would be restored to pre-construction conditions.

The proposed lift station at the intersection of Echols and Harrison would be located on Prime Farmland. The proposed lift station would be located on a one-half acre site owned by CVWD, and therefore the proposed project would not convert a significant amount of Prime farmland to a non-agricultural land.

The Project Report indicates that the proposed project would benefit agriculture and the local economy through the improvement of existing and planned low-income housing (Woodard & Curran 2020). Residents of mobile home parks in the area tend to be employed by agriculture related operations. The proposed project would convert one half-acre of Prime Farmland to non-agricultural use for the construction of a lift station. The lift station itself would be 140 square feet surrounded by perimeter fencing. Construction and operation of the lift station itself would not constitute a significant impact on agriculture because the proposed conversion of land to non-agricultural uses is small in the context of agricultural acreage in the eastern Coachella Valley. Indeed, the majority of the area within the eastern Coachella Valley, surrounding the Salton Sea to the west and stretching north toward the City of Coachella, is devoted to agriculture and planted in such crops as date palms, grapes, citrus and seasonal row crops (County of Riverside 2016). One half-acre to accommodate the proposed lift station and associated electrical facilities would be small relative to the region and less than significant.

The lift station does not conflict with zoning regulations or result in other changes that could indirectly result in conversion of nearby farmland to non-agricultural use. The lift station would not introduce roads or other utilities that would induce unplanned growth in the area. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer, but those facilities would service the new lift station only. The lift station would not limit the ability of lands surrounding it to continue to be used for agricultural purposes.

The remaining project features are not located on lands mapped for agriculture or zoned agriculture; and therefore, the proposed project is anticipated to have a less than significant direct or indirect impact on agricultural resources.

b) No impact

Riverside County participates in the Williamson Act Program; however, the project is not located on agricultural land that have Williamson Act contracts and would not conflict with any of the areas under contract with the local government through this program (CA DOC 2016). Areas under this program are recorded and can be found through the Land Conservation Act Maps for Riverside County. Project improvements would be constructed within existing rights-of-way and under paved or dirt roadways. As such, the proposed project would not affect agricultural zoning, or a Williamson Act contract. No impacts are anticipated.

c, d) No impact

There are no forest lands or timberlands within the project area. Therefore, there would be no conflict with zoning or loss or conversion of forest land or timberland. No impacts to forest land or timberland would occur and no mitigation is required.

Mitigation Measures: None required.

3.3 Air Quality

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

The project site and the Coachella Valley are located in a portion of the Salton Sea Air Basin (SSAB), within the jurisdiction of the SCAQMD. The regional climate, as well as the temperature, wind, humidity, precipitation, and amount of sunshine significantly influence the air quality in the SSAB. Climate in the Coachella Valley is a continental, desert-type climate, with hot summers, mild winters, and very little annual rainfall. Precipitation is less than six inches annually and occurs mostly in the winter months from active frontal systems and in the late summer months from thunderstorms.

The Coachella Valley is exposed to frequent gusty winds. The flat terrain of the valley and strong temperature differentials, created by intense solar heating, produce moderate winds and deep thermal convection. Wind speeds exceeding 31 miles per hour (mph) occur most frequently in April and May. The Coachella Valley also includes a blows and zone, which is identified in SCAQMD Rule 403.1 as "the corridor of land extending two miles to either side of the centerline of the Interstate 10, beginning at the State Route 111/Interstate 10 junction and continuing southeast to the Interstate 10/Jefferson Street interchange in Indio." The defined blowsand area is exposed to higher seasonal wind speeds, wind erosion, and suspended particle levels. The project is situated outside of the defined blowsand area, but it is exposed to the seasonal high wind speeds like other parts of the Coachella Valley. As subsequently discussed, SCAQMD has established Rules 403 and 403.1 to address wind erosion and fugitive dust impacts, particularly during land disturbance activities associated with construction.

As part of the Air Quality Monitoring Network Plan, SCAQMD has established 37 permanent monitoring stations, three of which are located in the Coachella Valley, specifically in the City of Palm Springs, City of Indio, and community of Mecca. The site-specific information for the Coachella Valley permanent air monitoring sites is shown below.

Table 3-1: SCAQMD Air Quality Monitoring Locations

Location	AQS ID	Pollutants Monitored	Distance from Project
Mecca (Saul Martinez)	060652005	PM10	5.8 miles. to the east
Indio	060652002	O3, PM10, PM2.5	10 miles. to the northwest
Palm Springs	060655001	CO, NO2, O3, PM10, PM2.5	26 miles to the northwest

Existing air quality is measured and evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Depending on whether or not the standards are met or exceeded, the SSAB is classified as being in "attainment" or "nonattainment." The National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) attainment statuses for the Coachella Valley portion of the SSAB are listed in **Table 3-2**. As shown therein, the SSAB

is in nonattainment for the State standards for 1-hour ozone, both the federal and State standards for 8-hour ozone and particulate matter less than 10 microns in size. Thus, the Coachella Valley portion of the SSAB currently exceeds several State and federal ambient air quality standards and is required to implement strategies that would reduce pollutant levels to recognized acceptable standards.

Table 3-2: Coachella Valley Portion of the Salton Sea Air Basin Attainment Status

Pollutant	Standard	Standard	Designation
1-Hour Ozone	0.12 ppm 0.09 ppm	NAAQS CAAQS	Attainment Nonattainment
8-Hour Ozone	0.070 ppm 0.070 ppm	NAAQS CAAQS	Nonattainment (Severe-15)[1] Nonattainment
CO	1-hour [0.10 ppm]; annual [0.053 ppm 1-hour [20 ppm]; 8-hour [9 ppm]	NAAQS CAAQS	Unclassifiable/Attainment Attainment
NO_2	1-hour [0.10 ppm]; annual [0.053 ppm] 1-hour [0.18 ppm]; annual [0.030 ppm]	NAAQS CAAQS	Unclassifiable/Attainment Attainment
SO_2	1-hour [75 ppb]; 24-hour [0.14 ppm]; annual [0.03 ppm] 1-hour [0.25 ppm]; 24-hour [0.04 ppm]	NAAQS CAAQS	Designations Pending/ Unclassifiable/Attainment[2] Attainment
PM_{10}	24-hour [150 µg/m^3] 24-hour [50 µg/m^3] annual [20 µg/m^3]	NAAQS CAAQS	Nonattainment (Serious) Nonattainment
$PM_{2.5}$	24-hour [35.0 µg/m^3] annual [12.0 µg/m^3] annual [12.0 µg/m^3]	NAAQS CAAQS	Unclassifiable/Attainment Attainment
Lead	3-months rolling [0.15 µg/m^3]) 30-day average [1.5 µg/m^3])	NAAQS CAAQS	Unclassifiable/Attainment Attainment
Hydrogen Sulfide	1-hour [0.03 ppm/ 42 µg/m^3]	CAAQS	Unclassified[3]
Sulfates	24-hour [25 µg/m^3]	CAAQS	Attainment

NAAQS: National Ambient Air Quality Standards / CAAQS: California Ambient Air Quality Standards
CO: carbon monoxide / PM_{10}: particulate matter less than 10 microns in size / $PM_{2.5}$: particulate matter less than 2.5 microns in size
NO_2: nitrogen dioxide; SO_2: sulfur dioxide
[1] Designated Nonattainment (Severe-15) for the 1997 and 2008 8-Hour Ozone NAAQS. Designation is pending for the 2015 8-Hour Ozone NAAQS, but Nonattainment (Severe) is expected.
[2] Designated Unclassifiable/Attainment for the Annual SO_2 NAAQS. Designations pending for the 1-Hour SO_2 NAAQS with SSAB expected to be designated Unclassifiable/Attainment.
[3] Three full years of data are not yet available for a designation, but Nonattainment is anticipated in at least part of the Coachella Valley.
Source: SCAQMD 2017.

Based on the attainment status discussed above, the two air pollutants of concern relevant to the Coachella Valley are ozone (O_3) and respirable particulate matter (PM_{10}).

Ozone (O_3) is a highly reactive and unstable gas that is formed when volatile organic compounds (VOCs) and nitrogen oxides (NO_X) undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant. Although also produced within the Coachella Valley, most ozone pollutants affecting the Valley are transported by coastal air mass from the Los Angeles and Riverside/San Bernardino air basins, thereby contributing to occasionally high local ozone concentrations.

PM_{10} (Particulate Matter less than 10 microns) is an air pollutant consisting of solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

The Riverside County portion of the SSAB is designated by the U.S. Environmental Protection Agency (EPA) as a “Severe-15” ozone nonattainment area for the 1997 8-hour federal ozone standard (0.080 ppm) and the more stringent 2008 standard (0.075 ppm). Violations of the ambient air quality standards for ozone in the Coachella Valley are primarily due to pollutant transport from the neighboring South Coast Air Basin (SCAB). Ozone is formed on sunny days from ozone precursors in the lower atmosphere that are emitted upwind of the Coachella Valley, in the coastal and central Los Angeles County areas of the SCAB. Pollutant transport through the Banning Pass, from the SCAB to the SSAB, is the primary cause of the high ozone concentrations experienced in the Coachella Valley in the late afternoon and early evening. The attainment date for the 1997 8-hour ozone standard was June 15, 2019. The attainment date for the 2008 8-hour ozone standard is July 20, 2027.

Furthermore, the Coachella Valley is currently designated as a serious nonattainment area for PM_{10} (particulate matter with an aerodynamic diameter of 10 microns or less). In the Coachella Valley, there are two primary sources of PM_{10}: natural sources consisting of sea salts, volcanic ash, and pollens, and man-made or anthropogenic sources. Man-made sources originate from direct emissions, such as industrial facilities, fugitive dust sources (e.g., construction sites) and paved and unpaved road dust.

To maintain compliance with the NAAQS and CAAQS, SCAQMD has adopted a series of Air Quality Management Plans (AQMPs). AQMPs are updated regularly in order to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. 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. In March of 2017, SCAQMD released the most current Final Air Quality Management Plan (2016 AQMP), which serves as a regional blueprint for achieving the

federal air quality standards. The 2016 AQMP is addressing the Clean Air Act planning requirements for O_3 in the SCAB and the Coachella Valley portion of the SSAB. The 2016 AQMP includes both stationary and mobile source strategies to ensure that the approaching attainment deadlines are met and public health is protected to the maximum extent feasible. As with prior AQMP versions, a comprehensive analysis of emissions, meteorology, atmospheric chemistry, regional growth projections, and the impact of existing control measures is included in the 2016 AQMP with the latest data and methods. Land use designation considerations are an important component of the AQMP development. The 2016 AQMP provides local guidance for the State Implementation Plans (SIP), which establishes the framework for the air quality basins to achieve attainment of the State and the NAAQS. Additional background regulatory information is provided in each subsequent response.

The U.S. EPA-approved *2002 Coachella Valley PM_{10} State Implementation Plan* (2002 CVSIP) includes an attainment strategy for meeting the PM_{10} standards. Some of the existing measures include the requirement of detailed dust control plans from builders that specify the use of more aggressive and frequent watering, soil stabilization, wind screens, and phased development to minimize fugitive dust. Appropriate air quality measures to prevent fugitive dust are required by SCAQMD Rules 403 and 403.1 that apply to the Coachella Valley strategy for reducing fugitive dust emissions.

a) Less than Significant Impact

The proposed project has been evaluated for consistency with the local air quality management plans, which are the 2016 AQMD, the Coachella Valley PM_{10} SIP, and the SCAQMD Air Quality Significance Thresholds. The AQMD links local planning to the ambient air quality standards and attainment dates for criteria air pollutants. This assessment takes into consideration whether the project forms part of the expected conditions identified in local plans (General Plan Land Use and Zoning) and whether the project adheres to the County's air quality goals, policies, and local development assumptions factored into the regional 2016 AQMP. Moreover, the air emissions associated with the short- term construction activities were analyzed for the purpose of this document and are summarized under Impact "b", below. By complying with the adopted thresholds, the proposed project is also complying with the overall attainment strategies reflected in the 2016 AQMP.

The proposed underground gravity sewer pipeline to be constructed primarily in existing rights-of-way to serve existing residents. As discussed in the Land Use and Planning Section of this document, the gravity sewer pipeline component of the project would not alter or result in modifications to the existing zoning and land use designations, nor would it conflict with any County land uses or local area planning efforts or policies. The proposed lift station at Echols Road and Harrison Street would be constructed on land that is currently used for agricultural production but is zoned as tribal land and will support residents of the Torres-Martinez Desert Cahuilla Indians. Therefore, the proposed project would be consistent with all applicable land use plans, policies and regulations of agencies with jurisdiction over the project

The project is not expected to obstruct with implementation of the applicable air quality plans because it would not induce unplanned growth above the levels projected in the County of Riverside General Plan, which form the basis of the emissions attainment dates of the SCAQMD 2016 AQMP. Based on the quantitative air emissions findings provided in Impact "b", the project's short-term emissions would not result in or cause violations to regional or localized emissions thresholds, which are established to comply with the NAAQS, CAAQS, or the attainment efforts included in the 2016 AQMP, the Coachella Valley PM_{10} SIP and other relevant regional plans. Therefore, the project would not interfere with the ability of the region to comply with federal and State ambient air quality standards and plans.

As a standard condition, the project proponent is required to comply with SCAQMD Rule 403, 403.1. These regulations require the project have an approved dust control plan and implement best management practices and measures identified in the *Coachella Valley Fugitive Dust Control Handbook*, therefore assisting with the effort to comply with the PM_{10} CVSIP and SCAQMD thresholds for PM_{10} emissions. As a standard condition, any ground surface area that is temporarily disturbed by construction activities must be entirely covered by the dust control plan and must be properly re-stabilized to satisfy the SCAQMD performance standards. Compliance with Rules 403 and 403.1 will address the high wind conditions that may be experienced during construction. Less than significant impacts are anticipated relative to conflict with or obstruction of implementation of the applicable air quality plan following the implementation of standard conditions.

b) Less than Significant Impact

Monitored air quality is evaluated in the context of ambient air quality standards. These standards are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. The determination of whether a region's air quality is healthful or unhealthful is determined by comparing contaminant levels in ambient air samples to the state and federal standards. Currently, the NAAQS and CAAQS are exceeded in parts of the SSAB. Pertaining to the NAAQS, the project region within the SSAB is in nonattainment for ozone (8-hour) and PM_{10}. For the CAAQS, the project region within the SSAB is in nonattainment for ozone (1-hour and 8-hour) and PM_{10}.

In response, the SCAQMD has adopted a series of programs and the 2016 AQMP to meet the state and federal ambient air quality standards. AQMP programs are updated regularly to more effectively reduce emissions, accommodate growth, and to minimize any negative fiscal impacts of air pollution control on the economy. As previously mentioned, the project's consistency with the local land use and zoning regulations adopted by the County of Riverside make it consistent with the growth assumptions factored into the regional 2016 AQMP, but the project-specific emissions must also be evaluated against regional thresholds to reach a finding of significance in the context of CEQA. An impact is potentially significant if concentration of emissions exceed the State or Federal ambient air quality standards.

SCAQMD Regional Air Quality Significance Thresholds

To assist lead agencies in determining the significance of air quality impacts, SCAQMD has established suggested short-term construction-related and long-term operational impact significance thresholds for direct and indirect impacts on air quality. Significance thresholds are recommended therein for both local and regional air quality impacts associated with short-term project construction and long-term operations. **Table 3-3** displays the established construction and operational daily significance thresholds, which are recommended for use by lead agencies in considering potential impacts on air quality. Project effects would be considered significant if the emissions exceed these thresholds.

In November of 2017, the SCAQMD in conjunction with the California Air Pollution Control Officers Association (CAPCOA) and other California air districts, released the latest version of the California Emissions Estimator Model™ (CalEEMod™) Version 2016.3.2. CalEEMod serves as an adopted platform to calculate both construction emissions and operational emissions from a land use project. The purpose of this model is to calculate construction-source and operational-source criteria pollutant (NOx, VOC, PM_{10}, $PM_{2.5}$, SOx, and CO) and greenhouse gas (GHG) emissions from direct and indirect sources; and quantify applicable air quality and GHG reductions achieved from mitigation measures. CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include but are not limited to the United States USEPA AP-42 emission factors, CARB vehicle emission models, studies commissioned by California agencies such as the California Energy Commission (CEC) and CalRecycle. In addition, some local air districts provided customized values for their default data and existing regulation methodologies for use for projects located in their jurisdictions.

CalEEMod Version 2016.3.2 was utilized to estimate the short-term construction-related emissions of criteria air pollutants and greenhouse gas emissions that would be associated with the construction activities necessary to implement the proposed project. **Table 3-4** summarizes the short-term emissions of the six criteria pollutants associated with the construction activities required to implement the proposed project. The construction period includes all aspects of project development, including site preparation, grading, excavation/trenching/backfilling, and site restoration activities including re-paving. The emissions presented in **Table 3-4** represent the mitigated levels, after implementation of the dust control best management practices required by SCAQMD.

Peak day emissions estimates are provided by construction phase type and reflect activities in the season or year with the highest daily emissions. As shown in **Table 3-3**, the air pollutant emissions during the construction phase with the highest daily emissions are not projected to exceed any of the significance thresholds for short-term construction-related emissions recommended by the SCAQMD. Based upon the projected emissions of the criteria air pollutants, the proposed project would have less than significant impacts relative to short-term impacts to air quality.

Table 3-3: Short-Term Air Pollutant Emissions Associated With Construction of the Proposed Project (Pounds/Day)

	ROG/VOC	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Total Emissions	5	43	38	<1	6	4
SCAQMD Mass Daily Construction and Operation Threshold	75	100	550	150	150	55
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: CalEEMod does not directly calculate ozone (O_3) emissions. Instead, the emissions associated with ozone precursors are calculated. VOC and ROGs are summed in the CalEEMod report under the header ROG.

The emissions are based on the CalEEMod mitigated results due to the local standard requirement to implement Rule 403 and 403.1 to control fugitive dust. Implementation of dust control measures are referred to as mitigation measures in CalEEMod for modeling purposes; CalEEMod does not have functionality to model standard project dust control measures separate from mitigation measures.

SCAQMD Localized Significance Thresholds

The SCAQMD has also developed and published the Final Localized Significance Threshold (LST) Methodology to identify potential impacts that could contribute or cause localized exceedances of the Federal and/or State ambient air quality standards. LST methodology was developed in response to environmental justice and health concerns raised by the public regarding exposure of individuals to criteria pollutants in local communities. The purpose of analyzing LSTs is to determine whether a project may generate significant adverse localized air quality impacts in relation to the nearest exposed sensitive receptors, such as schools, churches, residences, hospitals, day care facilities, and elderly care facilities. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project, size, and distance to the sensitive receptor. Therefore, meeting the lowest allowable emissions thresholds translates to meeting the most stringent air quality standards. As part of the LST methodology, SCAQMD has divided its jurisdiction into 37 source receptor areas (SRAs) which can be used to determine whether a project may generate significant adverse localized air quality impacts. The proposed development is located in SRA 30, which covers the Coachella Valley. LSTs only apply to certain criteria pollutants: carbon dioxide (CO), oxides of nitrogen (NOx) particulate matter equal to or less than 10 microns in diameter (PM_{10}), and particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$).

Geographic Information Systems (GIS) analysis was used to delineate the project area and identify the nearest sensitive receptors using the distance intervals established by the LST methodology, which are 25 meters (82 feet), 50 meters (164 feet), 100 meters (328 feet), 200 meters (656 feet), and 500 meters (1,640 feet). Based on this analysis,

the nearest sensitive receptors to the project include homes and school facilities. The shortest distance interval establishes the strictest threshold with the lowest emissions allowances needed to maintain compliance. As the distance from the project area increases, so do the allowable emissions amounts. As a conservative approach, the shortest distance of 25 meters (82 feet) was utilized for this analysis, allowing for the most stringent emissions standards to be used.

CalEEMod™ Version 2016.3.2 was utilized to calculate the maximum daily on-site emissions that would occur during construction based on the closest acreage interval allowed by the LST methodology, which is 5 acres (the project's maximum area of disturbance during construction would encompass about three acres, not including staging areas). The data provided in **Table 3-4** demonstrates that the construction activities would not generate emissions in excess of the site-specific LSTs; therefore, site-specific impacts during construction of the project would be less than significant. Based on the LST methodology, if the calculated emissions for the proposed construction or operational activities are below the LST emission levels and no potentially significant impacts are found to be associated with other environmental issues, then the proposed construction or operation activity is not significant for air quality.

Table 3-4: Localized Significance Thresholds (LSTs) Associated with Construction of the Proposed Project With Receptors at 25 Meters (82 Feet), 5-Acre Area Increments (In Pounds/Day)

Emission Source	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum Emissions Resulting from Excavation, Building Construction, and Resurfacing	43	38	6	4
SCAQMD LST for SRA 30	304	2,292	14	8
LST Threshold Exceeded?	**No**	**No**	**No**	**No**
Sources: CalEEMod Results and AQMD LST Look-Up Tables Note: The PM_{10} and $PM_{2.5}$ emissions are based on the CalEEMod mitigated results due to the local standard requirement to implement Rule 403 and 403.1 to control fugitive dust.				

SCAQMD Fugitive Dust Control Rules

The SCAQMD requires any emission reductions resulting from existing rules or ordinances to be included as part of the unmitigated project emissions. Those measures that are legally mandated and therefore required of all developments by applicable ordinances, rules, and regulations are not considered mitigation by SCAQMD. The project would be required to comply with SCAMQD Rule 403 and 403.1, which require methods to prevent sediment track-out onto public roads, prevent visible dust emissions from exceeding a 20-percent opacity, and prevent visible dust emissions from extending more than 100 feet (vertically or horizontally from the origin of a source) or crossing any property line. These and other standards would be enforceable by SCAQMD inspectors

during the period of construction. As such, compliance with applicable rules and regulations is not considered mitigation by the SCAQMD.

Relative to the PM_{10} emissions threshold, construction activities associated with the project would be required to adhere to the local dust control policies and ordinance to minimize potential temporary construction related emissions. An approved Fugitive Dust (PM_{10}) Control Plan will be required under SCAQMD rules prior to issuance of a grading permit. Implementation of the Fugitive Dust Control Plan is required to occur under the supervision of an individual with training on Dust Control in the Coachella Valley (Rule 403 and 403.1). The Fugitive Dust Control plan shall include methods to prevent sediment track-out onto public roads, prevent visible dust emissions from exceeding a 20-percent opacity, and prevent visible dust emissions from extending more than 100 feet (vertically or horizontally from the origin of a source) or crossing any property line. Other BMPs may include proper construction phasing, proper maintenance/cleaning of construction equipment, soil stabilization, installation of track-out prevention devices, and wind fencing. The Fugitive Dust Control plan must also identify any areas that shall remain undisturbed by the construction activities. With implementation of the Fugitive Dust Control plan pursuant to SCAQMD Rule 403 and 403.1, short-term construction-related impacts would be less than significant.

During the life of the utility project, it would not generate long-term criteria pollutant emissions. New operation and maintenance (O&M) trips to the new lift station, and to inspect the pipelines, would be incorporated into CVWD's existing sewer system operations. The new lift station would be controlled locally but monitored via a SCADA system. The estimated amount of energy consumed by the pumps at the new lift station would be 24,000 kWh per year; however, criteria pollutant emissions from electricity consumption are associated with power plants, not individual projects. Operational air pollutant emissions would, therefore, be negligible. Consequently, the project would not contribute substantially to a significant individual or cumulative impact on existing or projected exceedances of the State or federal ambient air quality standards or result in a cumulatively considerable net increase in the emissions of any criteria pollutant for which the project region is designated nonattainment. Project-related emissions would be consistent with the 2016 AQMP, the Coachella Valley PM_{10} SIP, and all SCAQMD Air Quality Significance Thresholds; therefore, long-term operational air quality impacts associated with the project should not be considered cumulatively considerable. Less than significant impacts are anticipated.

c) Less than Significant Impact

Project effects would also be considered potentially significant if emissions affected sensitive receptors such as schools or nursing homes, Sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Land uses with sensitive receptors include residential, long-term health care facilities, schools, rehabilitation centers, playgrounds, convalescent centers, child-care centers, retirement homes, and athletic facilities among others. The proposed project will occupy a corridor

primarily within existing rights-of-way surrounded by a combination of vacant land, agricultural fields, residential units and school facilities.

During construction, the project is expected to produce temporary and localized emissions, which based on the modeling results would not exceed the SCAQMD mass thresholds of significance. The SCAQMD mass emissions thresholds of significance are the levels of air quality that are considered safe, with an adequate margin of safety, to protect the public health and welfare. Therefore, projects that have emissions levels below the thresholds are assumed to have less than significant public health impacts for sensitive receptors in the region. The Localized Significance Threshold (LST) analysis performed on this site also demonstrated that the highest project emissions during construction would not exceed the strictest thresholds (**Table 3-4**) for the nearest sensitive receptors. The project Construction Contractor is required to comply with SCAQMD Rule 403 and 403.1 by implementing an approved, project- specific Fugitive Dust Control Plan. The Plan will outline required activities and best management practices for preventing or reducing temporary emissions from reaching any substantial concentrations. At any point during construction, the project will be required to prevent sediment track-out, visible dust emissions from exceeding a 20-percent opacity, and visible dust emissions from extending more than 100 feet (vertically or horizontally from the origin of a source) or crossing any property line. These standard requirements are consistent with the SCAQMD Rule 403 and 403.1 and the Coachella Valley Best Available Control Measures (CVBACM), as identified in the Coachella Valley Fugitive Dust Control Handbook. Compliance with applicable SCAQMD Rules and Regulations is not considered mitigation by the SCAQMD;. During the life of the project, activities and operations related to the proposed project are not expected to generate emissions concentrations that exceed the SCAQMD mass thresholds. Less than significant impacts are expected.

d) Less than Significant Impact

Objectionable odors can be associated with toxic or non-toxic emissions. While odors seldom cause physical harm, they can be unpleasant and lead to considerable annoyance and distress among the public. Examples of facilities commonly known to generate objectionable odors include wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging facilities (CARB 2005). Examples of facilities known to be susceptible to odors are residences, long-term health care facilities, schools, rehabilitation centers, playgrounds, convalescent centers, childcare centers, retirement homes, and athletic facilities.

The proposed project is not expected to generate substantial or permanent objectionable odors that would be detectable for a substantial number of people.

Mitigation Measures: None required.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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 Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Discussion

The unincorporated community of Thermal is located west of State Route 111, south of the City of Coachella, in unincorporated Riverside County. The eastern Coachella Valley accommodates several ecological habitats that are home to numerous flora and fauna. The project proposes installation of 19,625 feet of sewer pipeline, a new lift station, and abandonment of onsite septic systems at Sunbird MHP and TMCC. New electrical facilities would be constructed at the new lift station site, including a distribution pole and

a transformer. The project area is surrounded by vacant land, irrigated agriculture, and sparse residential, commercial, and industrial developments.

In November 2017, James W. Cornett, of Ecological Consultants prepared a General and Focused Biological Resources Assessment for the 3.5-mile-long proposed sewer corridor. The Biological Resources Assessment covered a component that is not a part of the proposed project, improvements to LS 55-21. In August 2018, CVWD Biologist Brett Daniels, surveyed the 2,500-linear foot alignment along Martinez Road. These reports describe the biological resources within the project footprint and assist in the assessment contained within this section. See **Appendix B** and **Appendix C** for a copy of the reports.

The project area is within the boundary of the *Coachella Valley Multiple Species Habitat Conservation Plan* (CVMSHCP) but is not within a designated Conservation Area of the CVMSHCP. The CVMSHCP was adopted by the plan participants in 2007 and 2008 and permits were issued by the wildlife agencies in late 2008 (County of Riverside 2016). CVWD is a permittee to the CVMSHCP. The closest Conservation Areas of the CVMSHCP to the project site are the *Santa Rosa and San Jacinto Mountains Conservation Area*, two miles to the west, and the *Coachella Valley Stormwater Channel and Delta Conservation Area*, three miles to the east.

a) Less than Significant with Mitigation Incorporated

Avenue 66/Harrison Street

The biological assessment prepared for the Avenue 66/Harrison Street alignment (Cornett 2017) included reviews of literature and institutional records to determine the possible occurrence of sensitive species. A biological field survey was conducted between October 20, 2017 and November 3, 2017. Plant and animal surveys were conducted by walking parallel transects through the centers and edges of the corridor and 100 yards beyond the proposed corridor boundary for a total width of 300 yards. The field survey also included day and night live animal trapping.

As discussed previously, the project area has been disturbed by human activity. Much of the proposed project corridor is occupied by date groves, dense tamarisk thickets, and dwellings. The project area does not provide a significant source of cover or food resources for any sensitive or listed migratory bird species. No observations of the protected burrowing owl were recorded (Cornett 2017), and no evidence of this species presence was found. The burrowing owl is not typically found in areas of regular human use. Additionally, the owls create burrows by expanding existing rodent burrows and observable rodent burrows were rare within the project boundary.

The field survey (Cornett 2017) further revealed no intact plant communities within the proposed utility line corridor or sensitive plant species. However scattered and disturbed remnants of the mixed saltbush scrub community were found. These species occupy hundreds of square miles in the Coachella and Imperial Valleys. Many kinds of introduces

and exotic weed species were found within the proposed corridors. The abundance of exotic weed species is an indication of the severe human disturbance and activities within the project area. The Inventory of Rare and Endangered Plants of California, published by the California Native Plant Society, *the CNDDB Special Plant List* (2017) and the *Endangered, Threatened and Rare Plants of California* (2017) indicate no listed or sensitive plant species that might occur within the project area.

Martinez Road

The biological report for the 2,500 LF alignment along Martinez Road was prepared in 2018 (Daniels 2018). The purpose of this report was to characterize biological resources present at the site and to assess the potential for the site to support special-status resources, wetland or waterways and special-status candidates. The biological evaluation includes a literature review and habitat level survey of the project site. A field survey was done by CVWD's biologist on August 23, 2018. The surveys consisted of a site walkover to identify potential waterways, plant communities, dominant plant species, and wildlife present on the site.

The entire project area on Martinez Road has been subject to extensive disturbance and grading activities associated with the construction of Tribal housing on both the east and west sides of the proposed pipe alignment as well as heavy agriculture use. The biological report states (Daniels 2018) that no special status species, or supportive habitat, was observed onsite during the survey. The site offers limited habitat, and forage for wildlife species as the area is highly developed. However, the report states, although no special-status wildlife species were observed during the survey, migratory bird species could potentially move through the site. Their occurrence would be transient and would not be affected by activities onsite, as there is no supportive habitat for nesting or roosting within the immediate right-of-way.

The CNDDB query for Martinez Road revealed no listed or threatened species within a one-mile radius of the project site but did list three plant species as occurring in the region, Jackass-Clover, Chaparral Sand-Verbena, and Mecca Aster. Chaparral Sand-Verbena has been recorded approximately 4 miles south of the Interstate 10 freeway in the Mecca Hills on the east side of the Coachella Canal which is 8 miles east of the project site. This species is typically associated with chaparral, coastal scrub, and desert dunes and open desert scrub on alluvial soils. No potential habitat for this species was observed onsite and thus is not expected on or near the project site. Jackass-Clover is associated with Playas, Desert Dunes and Mojavean/Sonoran Desert scrub. Mecca Aster is associated with Sonoran Desert scrub and more specifically with steep canyon slopes in areas of sandstone and clay. No supportive habitat for either of these plant species was observed onsite during the field survey and thus it is not expected on or near the project site. Additionally, no special status plant species associated with the CVMSHCP were observed during the survey within the project bounds or immediately adjacent to the site.

Both studies concluded that no adverse significant impacts to biological resources in the project area are expected to result from project implementation with adherence to certain

Mitigation Measures (**BIO-1: Pre-construction Burrowing Owl Survey** and **BIO-2: Nesting Birds**). The 2018 Biological Report (Daniels 2018) recommended environmental training and preconstruction surveys for nesting birds and burrowing owl due to the potential for birds to move through the site.

Therefore, a less than significant impact is expected to species identified as candidate, sensitive, or special status, including Jackass-Clover (*Wislizenia refracta ssp. refracta*), Chaparral Sand-Verbena (*Abronia villosa var. aurita*), Mecca Aster (*Xylorhiza cognata*), Desert tortoise (*Gopherus agassizii*), and migratory birds (see species lists in **Appendix B**) following the recommended Mitigation Measures listed below.

b) No Impact

Avenue 66/Harrison Street

Per the biological report (Cornett 2017), the corridor does not include Desert Dry Wash Woodland habitat or impact a blue-stream corridor. The field survey did not reveal any on-site naturally occurring springs, permanent aquatic habitats or drainages. Most of this road alignment has been heavily disturbed and impacted by human activity. The entire area shows evidence of being graded in historical times for development of home sites, commercial uses, storage yards, agricultural fields, utility alignments and roadways.

Martinez Road

No jurisdictional waterways or resources were observed onsite (Daniels 2018). The biological report for the Martinez Road segment states that the area is devoid of any riparian or intermittent streambeds with an established bed and bank feature. The entire project site has been subject to extensive site disturbance and grading activities associated with the constriction of Tribal housing on both the east and west sides of the proposed pipeline alignment, in addition to heavy agricultural use.

As a result of the absence of wash or riparian vegetation, absence of other sensitive natural communities, no impacts are expected.

c) No Impact

The biological reports (Cornett 2017; Daniels 2018) determined that the project site does not contain wetlands, marshes or other drainage features. No blue-line stream corridors (streams or dry washes) are shown on U.S. Geological Survey maps for the project site nor are there botanical indicators of such corridors. As a result, implementation of the project would not result in the direct removal, filling or other hydrological interruption to any of these resources. No impacts are expected.

d) Less than Significant with Mitigation Incorporated

Per the biological reports (Cornett 2017; Daniels 2018), there is no evidence of migratory wildlife or native wildlife nursery sites exist on the project site. As previously discussed, the project area has been heavily disturbed by human activity, grading, residential, and

agricultural uses. Moreover, there are no existing drainages that would support wildlife corridors and the roads are not located in a known wildlife corridor. Therefore, no impacts to movement of any native resident or migratory fish or wildlife species, corridors, or wildlife nursery sites are expected.

The 2018 Biological Report (Daniels 2018) recommended environmental training and preconstruction surveys for nesting birds and burrowing owl due to the potential for birds to move through the site. With implementation of **Mitigation Measures BIO-1** and **BIO-2**, impacts to migratory species would be less than significant.

e) No Impact

The proposed project would take place within areas that have been impacted by human activity and site disturbance. Project implementation would not result in tree removal. There are no other unique local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance that would cause a conflict nor does the site support high value biological resources that could be affected. No impacts are anticipated.

f) Less Than Significant Impact

The CVMSHCP provides policies and assessment for conservation of habitats and natural communities throughout the eastern Riverside County area. The project site lies within the boundary of the CVMSHCP, but is not located within a Conservation Area under this plan. As the project specific biological reports have determined, there are no known significant biological resources on the project site. The proposed project would not conflict with any provisions of the CVMSHCP.

Mitigation Measures

Mitigation Measure BIO-1: Pre-Construction Burrowing Owl Surveys

To avoid potential impacts to burrowing owl, a pre-construction clearance survey for burrowing owl shall be conducted no more than fourteen (14) days prior to initiation of construction activities. The burrowing owl pre-construction survey shall be conducted on-foot within the proposed disturbance area including a 500-foot buffer. The survey methods will be consistent with the Staff Report on Burrowing Owl Mitigation (CDFW 2012) and shall consist of walking parallel transects spaced adequately to obtain 100% visual coverage of the site. The survey shall be conducted by a biologist familiar with the identification of burrowing owl and their habitat.

If burrowing owls are found within the project area during the pre-construction surveys, active burrows will be avoided. If possible, the timing and location of construction activities will be adjusted to avoid the occupied burrow by the appropriate distance (see below), where possible. Due to the size of the project, it is anticipated that the construction schedule and location can be modified to avoid all potential impacts to occupied burrows during the breeding season. Buffer zones for occupied burrows will

be established at 500 feet during the breeding season (February 1 to August 31) and at 100 feet for the non-breeding season. These buffers may be adjusted in consultation with California Department of Fish and Wildlife and Coachella Valley Conservation Commission and monitored at the discretion of a qualified biologist. The buffer zone will be clearly marked with flagging and/or construction fencing

Mitigation Measure BIO-2: Nesting Birds

To avoid disturbance of nesting birds, including raptor species protected by the MBTA and CFGC 3503, activities related to the proposed project including, but not limited to, vegetation removal, ground disturbance, and construction shall occur outside of the bird breeding season (typically January 1 to September 15) to the extent practicable.

If construction must occur within the bird breeding season (January 1 through September 15), CVWD shall, no more than three days prior to initiation of ground disturbance and/or vegetation removal, contract with a qualified biologist to conduct a nesting bird and raptor pre-construction survey within the disturbance footprint plus a 100-foot buffer (300-foot for raptors), where feasible. If the proposed project is phased or construction activities stop for more than one week, a subsequent pre-construction nesting bird and raptor survey will be required prior to each phase of construction within the project site.

Pre-construction nesting bird and raptor surveys shall be conducted during the time of day when birds are active and shall factor in sufficient time to perform this survey adequately and completely. A report of the nesting bird and raptor survey results, if applicable, shall be submitted to the lead agency for review and approval prior to ground and/or vegetation disturbance activities.

If nests are found, their locations shall be flagged. An appropriate avoidance buffer ranging in size from 25 to 50 feet for song birds, and up to 500 feet for raptors depending upon the species and the proposed work activity, and CDFW approval shall be determined and demarcated by a qualified biologist with bright orange construction fencing or other suitable flagging. Buffers will be determined in conjunction with CDFW through the development of a nesting bird management plan. Active nests shall be monitored at a minimum of once per week until it has been determined that the nest is no longer being used by either the young or adults. No ground disturbance shall occur within this buffer until the qualified biologist confirms that the breeding/nesting is completed, and all the young have fledged. If project activities must occur within the buffer, they shall be conducted at the discretion of the qualified biologist. If no nesting birds are observed during pre-construction surveys, no further actions would be necessary.

3.5 Cultural Resources

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Discussion

The project is situated in the eastern Coachella Valley. The Coachella Valley itself extends approximately 45 miles from the San Bernardino Mountains near Palm Springs to the Salton Basin near the border of Riverside, Imperial, and San Diego counties.

This section is based on a summary of the *2018 Cultural Resources Technical Report*, prepared by Dr. Amy Gusick on behalf of the Water Resources Policy Institute and revised in 2020. This section also incorporates information from the Area of Potential Effects memorandum prepared by Rincon for CVWD in 2021. See **Appendix D** and **Appendix E** for a copy of these reports.

The project-specific Cultural Resources Technical Report was prepared to determine whether the project would cause a substantial adverse change to any "historical resources" or "Tribal cultural resources" that may exist in or around the project area. The research methods performed as part of this assessment included a review of all archaeological, Native American, and historic literature covering the project site, and a pedestrian field survey. The Cultural Resources Technical Report covered a component that is not a part of the proposed project, improvements to LS 55-21. The Area of Potential Effects memorandum (Rincon 2021) provides update maps identifying the Area of Potential Effects (APE) and Area of Direct Impacts (ADI) for the proposed project.

The proposed project involves installation of 19,625 feet of sewer pipeline, a new lift station, and abandonment of onsite septic systems at Sunbird MHP and TMCC. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. The pipeline would be installed below grade within existing paved streets and rights-of-way with an average excavation depth of ten to 14 feet and maximum depth of 25 feet. The width of the trench will depend on the depth because the trenches will have side slopes laid back at 1:1 or 2:1 depending on depth and soils. Pipeline

trenching widths would be three to four feet. Excavations for a new lift station are proposed in a 17-feet by 17-feet area on the northeast corner of Harrison Street and Echols Road. The trench for the wet well for the lift station will be 20 feet deep.

The APE surveyed by Gusick covers approximately 24,000 LF along existing roads. For the purposes of this analysis, the APE developed by Gusick has been defined as the ADI and a new APE has been created that encompasses the limits of project-related disturbances, the boundaries of all cultural resources and a historic district, and a 1-meter buffer of the resources (Rincon 2021). The resources are included in the APE due to the potential for direct or indirect impacts created by the Project. The APE includes all areas that could potentially be affected by the project, including staging and construction access areas. It is considered three-dimensional and includes horizontal and vertical ground disturbance for the project.

Records Search Results

Records searches at the Eastern Information Center (EIC) housed at the University of California, Riverside were conducted in July 2017 and October 2018. The results indicated that 30 cultural resource investigations had been conducted within a half-mile search radius of the project APE between 1979 and 2014.

The records search conducted at the EIC returned 21 known archaeological or historic-age resources within one-half mile of the project APE. Within the project APE there are five known resources. Four are historic-age built resources and the fifth is the Martinez Historical District. There is also one additional known historic property, Valerie Jean Date Shop, which is adjacent to the project APE. These six previously-recorded historic resources are described and addressed under Impact “a” below. In addition to the previously-recorded historic resources, the Cultural Resources Report (Gusick 2018, revised 2020) recorded three new historic resources, which are also described and addressed under Impact “a” below.

Field Survey

Field surveys were conducted of the proposed project APE in July 2017, September 2017, and November 2018. Preliminary field efforts included review of records within the project APE, the generation of a map of the recorded cultural resources using GIS, and review of historic aerials of the project APE. An intensive pedestrian and reconnaissance survey was conducted of the pipeline route, including inspection of natural open spaces, buildings and infrastructure within the linear corridor. Previously recorded cultural resources were relocated and recorded. For any updates to previously recorded resources and for newly identified resources, California Department of Parks and Recreation (DPR) 523 forms were submitted to the EIC.

The proposed alignments on Echols Road and Harrison Street were found to be highly disturbed during the field surveys. The proposed alignment along Avenue 66 was found to be developed; all built environment resources adjacent to the APE were re-inspected,

as was an historic-age levee noted on historic topographic maps. The dirt access for the proposed new lift station survey found the site was bordered on all sides by heavily graded, disturbed land. The pedestrian survey along Martinez Road and the parallel TMCC access road found that the shoulders were heavily graded and scattered with modern trash. The survey of the portion of the proposed alignment on Martinez Road that extends into the boundaries of the Martinez Historical District was conducted with the Torres-Martinez Most Likely Descendent (MLD), who identified areas within the Historical District where cremated remains were known to be located and where debitage from shovel test pits had been found from other projects.

a) Less Than Significant with Mitigation Incorporated

According to the Cultural Resources Report (Gusick 2018, revised 2020), there are six historical resources within the project APE and three historic resources adjacent to the project APE.

Four previously-recorded historic-age built resources that are within the project APE include: Martinez Road, two Caltrans rights-of-way, and a recorded segment of irrigation lateral that is part of the Coachella Canal. The fifth previously-recorded historic resource within the project APE is the Martinez Historical District. Valerie Jean's Date Shop is a known historical property adjacent to the project APE. Additional details follow:

- *Martinez Road* runs through the Torres-Martinez Desert Cahuilla Indian Reservation and is adjacent to the Martinez Historical District, which is addressed further in the next paragraph. Martinez Road has been recommended as ineligible for the National Register of Historic Places (NRHP). The road has been resurfaced and the shoulder has been graded throughout the years for routine maintenance.

- The *two Caltrans rights-of-way* are part of several rights-of-way that were recorded in 2012. They are both considered historic-period asphalt paved roads. One is at the edge of Harrison Street and the other is at the north east corner of Avenue 66 and Harrison Street. Both rights-of-way are in poor condition and show evidence of being patched and resurfaced over the years. No cultural materials were observed at these two sites and no further cultural resource consideration is recommended.

- The *Coachella Canal* was constructed between 1949 and 1951. The recorded irrigation lateral runs along Echols Road and while this irrigation lateral is part of a contributing historical element, the segment within the project APE was replaced with PVC pipe in 2016 to protect the pipeline from future flooding. The proposed sewer pipeline will be placed along the same alignment as this section of irrigation lateral previously replaced with PVC pipe. Due to the 10-feet separation requirements imposed by Title 22 and the California Health Code, and because this section of irrigation lateral has already been replaced, the installation of the sewer pipe will not have an adverse effect to this resource.

- The *Martinez Historical District* is a listed National Register Historic Preservation District. This Historical District encompasses the Cahuilla village site and is currently part of the Torres-Martinez Desert Cahuilla Indian Reservation. The Historical District has both prehistoric and historic components, including five historic age buildings near the project APE. There is also a cemetery located within the Historical District boundaries. Disturbance to the roads (Martinez Road and the access road to the TMCC) running through the Martinez Historical District would be temporary and the roads would be repaved and returned to the current condition after the installation of the sewer pipe. However, due to the sensitive nature of this area, an archaeological and Tribal monitor will be required during ground disturbing activities to mitigate potentially significant impacts.

- *Valerie Jean's Date Shop* is a known historical property adjacent to the project APE on the southwest corner of Harrison Street and Avenue 66, near the trenching location for the pipeline. This resource has a National Register status and a State Point of Historical Interest status. The Cultural Resources Report found that there would be temporary impacts during the trenching of the road to the north and west of the resource. However, these impacts would be resolved once the pipeline trench is in-filled and repaved. No adverse impacts are expected to this resource.

As part of this Cultural Resources Report (Gusick 2018, revised 2020), three newly recorded historical resources were identified within a half-mile of the project APE, including a residence, roadway, and levee. These three resources were recorded with California DPR 523 forms with the EIC. The memorandum prepared by Rincon (2021) determined that one of the newly recorded resources is a previously recorded resource.

- The *single-family residence* is within Sunbird MHP but is located outside of the project APE. This adobe residence was identified on maps as early as 1953 and is likely associated with small scale farming that is common in this area. Although the house appeared to retain its original purpose it has not maintained its integrity of design, setting, or workmanship and does not appear to be eligible for the NRHP. Moreover, the residence is not within the project APE and would not be impacted by the proposed project.

- *Avenue 66*, a historic- to modern-period improved road, runs from Harrison Street to Polk Street within the project APE. The road is visible on 1944 Valerie topographic map and appears to be a main route through this section of Thermal. No major historic event or person is associated with the road and it was not a major historic factor in the development of this area. The road has been disturbed with modern improvements and no newly identified cultural resources were found in association with this road. The memorandum prepared by Rincon (2021) determined this resource is previously recorded site P-33-020844 (Avenue 66).

- A historic-age *levee* was also identified and is first shown on the 1957 Valerie topographic map but appears to no longer be in use. Its former use may have been related to Kohl Ranch, which is currently on the property adjacent to the levee. The

levee has been degraded and filled with vegetation. This levee is outside of the proposed project APE and would not be impacted by the proposed project.

Most of the proposed project area has been subjected to extensive site disturbance and human development. The entire area shows evidence of being graded in historical times for home site, storage yards, agricultural fields, utility alignments and roadways. Following implementation of **Mitigation Measures CUL-1** through **CUL-3**, listed below, the project is expected to result in less than significant impacts to historical resources. No further cultural resource considerations are recommended for the two new and six previously recorded cultural resources.

b) Less Than Significant with Mitigation Incorporated

Archaeological resources are described as cultural resources, such as structures or objects that provide evidence of past human activity. They are important for scientific, historic, and or religious reasons to cultures, communities, or individuals. The Cultural Resources Report (Gusick 2018, revised 2020) included a records search, Native American scoping, historical background research and an intensive level field survey. The Cultural Resources Report found the proposed project APE has been heavily disturbed over the years from various activities associated with agriculture, utility alignments, homes and roadways.

As mentioned in the prior discussion under the response to Impact “a”, the Martinez Historical District is listed as a National Register Historic Preservation District. This Historical District encompasses the Cahuilla village site and is currently part of the Torres-Martinez Desert Cahuilla Indian Reservation. The Historical District has both prehistoric and historic components. Within the Martinez Historical District, there is a known cemetery which is just south of the APE along Avenue 66 as well as historic documentation of two Indian Rancherias and prehistoric Cahuilla Indian village sites, that are still present. The entire project APE within Martinez Road and the TMCC reservation access road were surveyed and a portion of the proposed project APE runs directly through the Martinez Historical District.

Planned impacts to the roads that run through the Martinez Historical District would be temporary and the road would be repaved and returned to the current condition after the installation of the sewer pipeline. However, due to the sensitive nature of this area, an Archaeological and Tribal Monitor shall be present during any ground disturbing activities. Implementation of **Mitigation Measures CUL-1 through** and **CUL -3** described below, would reduce archeological resource impacts to less than significant.

c) Less Than Significant with Mitigation Incorporated

Avenue 66/Harrison Street/ Echols Road

The Cultural Resources Report (Gusick 2018, revised 2020) included an intensive field survey of the entire alignment. The presence of human remains, or human burial sites

were not encountered during previous construction activities in the proposed project APE, nor have human remains or burial sites been found in adjacent cultivated fields.

Martinez Road

There is a recorded cemetery in the Martinez Historical District, which is just south of the APE along Avenue 66. There is a possibility of encountering human remains if trenching occurs below existing fill material underneath the existing streets, which are believed to be up to three feet deep. Impacts to buried human remains along this route of the proposed project were considered to be moderately high (Gusick 2018, revised 2020).

State of California Health and Safety Code §7050.5 and CEQA Guidelines §1564.5 require that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there would be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. According to State of California Health and Safety Code, if the coroner determines the remains to be Native American or has reason to believe that they are Native American, the coroner shall contact by telephone within 24-hours the Native American Heritage Commission. If the MLD does not make recommendations within 48 hours, the remains are to be buried with appropriate dignity on the property where they will no longer be disturbed.

In the event of discovery or recognition of human remains in portions of the proposed project area within lands owned by Torres-Martinez Desert Cahuilla Indians (see **Figure 2-5**), there would be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until a representative from the Torres-Martinez Desert Cahuilla Indians is notified. The Torres-Martinez Desert Cahuilla Indians would have full discretion over the treatment of the remains. These requirements are also listed as **Mitigation Measure CUL- 4** in order to ensure that they are included in the MMRP.

With the compliance of mitigation measure **CUL-4**, impacts would be less than significant.

Mitigation Measures

Mitigation Measure CUL-1: Worker Environmental Awareness Program: Archaeologist Sensitive Training

> CVWD shall retain a qualified archaeologist conduct a Worker's Environmental Awareness Program (WEAP) training for archaeological sensitivity for construction personnel prior to the commencement of any ground disturbing activities. Construction personnel shall be briefed on project-specific circumstances and general observation methods for detecting archeological resources, including tribal cultural resources. The briefing shall include appropriate actions to be taken in the event of questionable evidence or discovery.

Mitigation Measure CUL-2: Initial Monitoring of Archaeological Resources

CVWD shall ensure that initial project-related ground-disturbing activities shall be observed by an archaeological and Native American monitor. These activities shall include initial site preparation, clearing/grubbing of vegetation, and excavation for placement of the sanitation system. The archaeological monitor shall be under the direction of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983). If archaeological resources are encountered during ground-disturbing activities, work in the immediate area shall halt and the find shall be evaluated for CRHR and/or NRHP eligibility. Archaeological monitoring may be reduced or halted at the discretion of the qualified archaeologist as warranted by conditions such as encountering bedrock, sediments being excavated are fill materials, or negative findings during initial ground-disturbing activities. If monitoring is reduced, spot-checking shall occur when ground-disturbance moves to a new location or when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock). Both the project archeologist and Native American monitor will be invited to attend the pre-construction meeting.

Mitigation Measure CUL-3: Unanticipated Discovery of Cultural Resources

In the event that cultural resources are unearthed during project construction, the project archeologist, in coordination with CVWD's construction inspector shall temporarily suspend all earth disturbing work within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify CVWD's Construction Inspector and Environmental Services Department. CVWD shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be eligible for inclusion in the NRHP or CRHR. Work may not resume within the no-work radius until CVWD, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.

Mitigation Measure CUL-4: Unanticipated Discovery of Human Remains

The discovery of human remains is a possibility during ground-disturbing activities. In the event that human remains are found, CVWD shall temporarily suspend all earth disturbing work within a 100-foot radius of the discovery. The project archeologist would evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature and location of the find.

If the find includes human remains, or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Riverside County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

If the find includes human remains, or remains that are potentially human, and the find is located on lands owned by Torres-Martinez Desert Cahuilla Indians, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until a representative from the Torres-Martinez Desert Cahuilla Indians is notified. The Torres-Martinez Desert Cahuilla Indians would have full discretion over the treatment of the remains.

3.6 Energy

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion

The project area is served by IID for electricity, a public utility company with a 6,471 square mile service area. IID's energy service territory covers all of Imperial County, along with parts of Riverside and San Diego Counties. The project area is served by the Southern California Gas Company for natural gas. CVWD's facilities are powered by electricity supplied by IID in the eastern Coachella Valley, and Southern California Edison in the remaining service area. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer (see *Section 2.4.2*). CVWD will continue to consult with IID staff related to the design, installation or improvements to the new and/or improved project features.

a) Less than Significant Impact

Construction of the proposed project would involve construction-related fossil fuel consumption from operation of diesel-powered construction equipment, and fossil fuel consumption from material hauling, delivery, and worker vehicle trips. **Table 3-5** summarizes the anticipated construction fleet for the proposed project. **Table 3-6** summarizes the estimated material delivery and hauling truck trips, and worker vehicle trips for each type of construction activity.

Table 3-5: Construction Fleet Summary

Construction Phase	Duration (days)	Anticipated Fleet	Usage (hours/day)
Excavation / Grading	131 days	1 Rubber Tired Dozer 2 Tractor/Loader/Backhoe 1 Grader	8 7 8
Lift Station Building Construction	131 days	1 Cement and Mortar Mixer 1 Generator Set 1 Crane 2 Forklift 1 Tractor/Loader/Backhoe 3 Welder	8 8 8 7 6 8

Re-paving	131 days	1 Cement and Mortar Mixer 1 Paver 1 Paving Equipment 2 Rollers 1 Tractor/Loader/Backhoe	8 8 8 8 8
Sources: Project-specific information obtained from Project Report (Woodard & Curran 2020) and duration based on a total construction timeframe; see *Section 2 Project Description*. All other assumptions obtained from default values in CalEEMod Version 2016.3.2; see **Appendix A** for model output.			

Table 3-6: Construction Trip Summary

Construction Phase	Duration (days)	Daily Worker Vehicle Trips (14.6 miles each)	Daily Vendor Trips (6.2 miles each)	Daily Hauling Truck Trips (20 miles each)
Excavation / Grading	131 days	10	0	12
Lift Station Building Construction	131 days	42	17	1
Re-paving	131 days	15	1	12
Sources: Project-specific information obtained from Project Report (Woodard & Curran 2020); see *Section 2 Project Description*. All other assumptions obtained from default values in CalEEMod Version 2016.3.2; see **Appendix A** for model output.				

The proposed project would implement typical construction practices such as trenching and repaving of the pipelines, and construction and equipping of the lift station. As shown in **Table 3-5** and **Table 3-6**, the project would not require any unusual or excessive construction equipment or practices that would result in wasteful, inefficient, or unnecessary consumption of energy compared to projects of similar type and size. In addition, the construction fleet contracted for the proposed project would be required to comply with the CARB In-Use Off-Road Diesel-Fueled Fleets Regulations, which would limit vehicle idling time to 5 minutes, restrict adding vehicles to construction fleets with older-tier engines, and establish a schedule for retiring older, less fuel-efficient engines from the construction fleet. As such, construction of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy during construction.

The proposed project would have minimal daily operational energy demand associated with fossil fuels consumed for maintenance activities, including regular inspection trips (see *Section 2 Project Description*). The proposed project would implement typical operational practices compared to projects of similar type and size. In addition, the project would reduce existing energy use associated with current methods of wastewater disposal from Sunbird MHP and TMCC. Finally, the energy consumption of the proposed project is necessary to provide sustainable and sanitary wastewater treatment for Sunbird MHP and TMCC. As such, operation of the project would not result in wasteful, inefficient, or unnecessary consumption of energy.

b) Less than Significant Impact

The *2017 Climate Change Scoping Plan* (CARB 2017) focuses on reducing energy demand, and GHG emissions, that result from mobile sources and land use development.

The proposed project would not involve a considerable increase in new vehicle trips or land use changes that would result in an increase in vehicle trips, such as urban sprawl. The *Scoping Plan* also recognizes the water-energy nexus and the potential for local water recycling to reduce energy associated with water conveyance. By connecting Sunbird MHP and TMCC to CVWD's sanitary sewer system, the project would support the *Scoping Plan* goals of expanding local water recycling, and offsetting energy demands associated with water conveyance statewide.

The proposed project would not interfere with existing County or regional programs intended to reduce energy and improve water use efficiency. It would not result in emissions higher than the screening thresholds in Riverside County's *Climate Action Plan* (CAP) (see further analysis is *Section 3.8 Greenhouse Gas Emissions* of this document). The proposed project would not, therefore, conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Impacts would be less than significant, and no mitigation would be required.

Mitigation Measures: None required.

3.7 Geology and Soils

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the Project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or	☐	☒	☐	☐

	that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?				
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
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?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Discussion

The Coachella Valley is located within California's Colorado Desert Geomorphic Province, bordered to the west by the Peninsular Ranges, to the north by the Transverse Ranges, and to the east by the Mojave Desert. The Colorado Desert is a low-lying barren desert basin, portions of which are about 245 feet below sea level.

The majority of Southern California, including the Coachella Valley, is considered a seismically active region and is subject to risk from earthquakes and other geologic effects that are triggered by earthquakes such as ground shaking, fault rupture, landslides, liquefaction, subsidence, and seiches. Two of California's most active faults, the San Andreas and San Jacinto faults, are located within the Coachella Valley. The San Andreas and San Jacinto have been designated by the California Geological Survey as Alquist-Priolo Earthquake Fault Zones. The proposed project site is located in the southeast quadrant of the Coachella Valley—an inland structural basin located between San Andreas Fault zone to the north and San Jacinto Fault zone to the south. The project area is approximately seven miles from the San Andreas fault and approximately 15 miles from the San Jacinto fault There are also many other active/potentially active late Quaternary faults within a 100-kilometer radius of the Project.

The northwestern Coachella Valley is an alluvial lowland that extends southeast from the San Gorgonio Pass region to the north end of the Salton Sea. The lowland is traversed by multiple branches of the San Andreas Fault and is punctuated by localized compressions resulting in the uplift of dome-shaped hills of sand and gravel. Current geologic understanding suggests that the lowland is a contractional region formed over the last one-million years by left-lateral strike slip branches of the San Andres Fault. The left-lateral strike-slip motion is presently active and results in earthquakes in the northern Coachella Valley. Sediments are deposited in the lowland portions of the basin, also known as depositional basins. Sediments in the depositional basins are the main water-bearing units in the Coachella Valley and have been utilized for sand and gravel resources. (Kamalzare, PhD., M. ASCE, 2018).

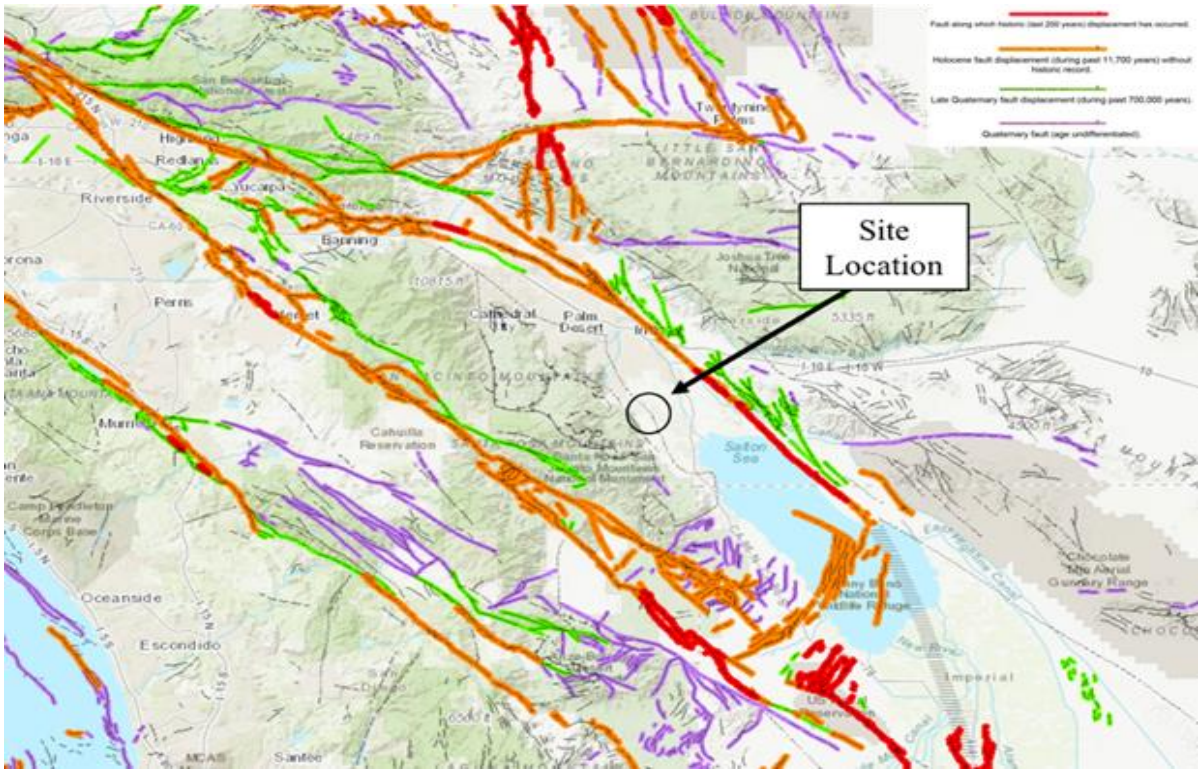
A geotechnical investigation for the project was conducted by Mehrad Kamalzare in 2018 and is included in **Appendix F** (Kamalzare, PhD., M. ASCE, 2018). The Geotechnical Report (Kamalzare 2018) describes soils encountered at 0-3 feet below the surface as primarily organic matter followed by silty sand. The stratums below the silty sand were reported as low plastic silt and low plastic clay. All soil types ranged with in-situ densities from 'very loose' to 'medium'. The type of soil was found to be young and unconsolidated. The site was classified as a Seismic Design Category E in accordance with the California Building Code. The report concluded that: (1) the fault rupture hazard at the site is low; (2) liquefaction susceptibility is high; and (3) seismic settlement is not expected to represent a "significant geologic hazard" provided that the construction recommendations in the study are followed.

a, c) Less than Significant with Mitigation Incorporated

A seismic hazard to the proposed project is strong ground shaking from earthquakes produced by local and regional faults. The intensity of ground shaking would depend upon the magnitude of the earthquake, distance to the epicenter, and the geology of the area between the epicenter and the project site. Seismically induced ground rupture could occur with the physical displacement of surface deposits in response to an earthquake's seismic waves. Ground rupture is most likely along active faults, and typically occurs during earthquakes of magnitude five or higher. Ground rupture only affects the area immediately adjacent to a fault.

The proposed project alignment is not located near known active fault zones. The proposed project is located approximately seven miles from the San Andreas fault and approximately 15 miles from the San Jacinto fault, which are two of California's most active faults (see **Figure 3-4**). Both the San Andreas and San Jacinto faults are designated by the California Geological Survey as Alquist-Priolo Earthquake Fault Zones. Ground rupture is most likely to occur along active faults. According to the California Geologic Survey's on-line *Earthquake Hazard Zone Application* (accessed 6/20/2020), the proposed project is not located within a fault zone. Due to the distance between the proposed project and the San Andreas and San Jacinto faults and conclusions from the Geotechnical Report (Kamalzare 2018), impacts related to ground rupture would be less than significant.

Figure 3-4: Fault Location



Source: (Kamalzare, PhD., M. ASCE)

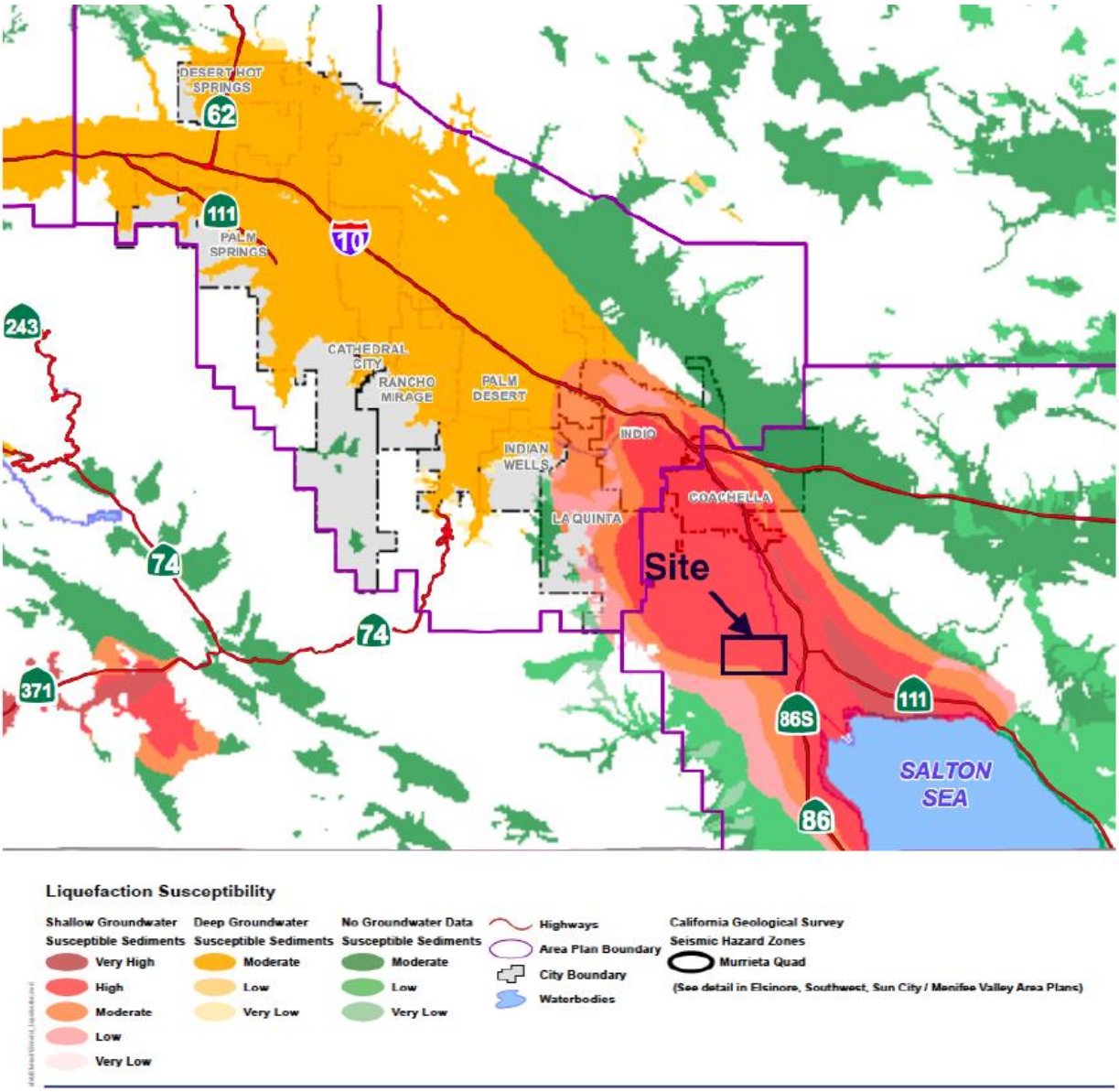
However, due to the proximity of the proposed project to two active fault zones, the project area is subject to seismic ground shaking. The proposed project would remove 25 community septic systems, install 19,625 feet of underground gravity sewer pipeline in existing rights-of-way, and construct a new lift station. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. Although impacts related to strong seismic ground shaking could potentially be significant in the project area, the proposed project would not include any land use components that would bring additional people to the area or structures people would occupy. The pipelines would be designed in conformance with seismic engineering standards to reduce potential damage in the event of ground shaking**.** Therefore, the proposed project would not directly or indirectly result in substantial adverse effects, including the risk of loss, injury, or death due to seismic ground shaking and impacts would be less than significant.

The Geotechnical Report (Kamalzare 2018) concluded seismic settlement is not expected to represent a significant geologic hazard provided that the construction recommendations in the study are followed. These recommendations are included in the Construction Standards.

Regional topography is of low relief characterized by landforms attributable to Holocene Lake Cahuilla. Flat land coupled with poorly stratified alluvial soils generally rule out any potential slope stability issues. The potential impact of landslides is less than significant.

The liquefaction susceptibility map of Riverside County indicates that the proposed project site is in an area of high susceptibility due to shallow groundwater, soil type, and potential ground shaking from nearby faults (see **Figure 3-5**). The Geotechnical Report (Kamalzare 2018) states that the main factors that contribute to the project's liquefaction susceptibility are the proximity to the Salton Sea and onsite loose existing soil deposits. The area encompassing the Salton Sea experiences shallow groundwater levels. According to the study, groundwater was encountered at a depth of 16 feet at the southeast corner of Avenue 66 and Martinez Road. Dewatering is anticipated to be necessary throughout the installation of the sewer main in the eastern half of the project. However, the average depth of pipeline construction is 10 feet. The proposed lift station is anticipated to be 4 feet deep. In the event groundwater is exposed, mitigation measure **GEO-1** would be implemented to ensure groundwater in the project area is protected.

Figure 3-5: Riverside County Liquefaction Susceptibility Zone Map and Project Location



The soils at the site are described as primarily young and unconsolidated. As stated previously, the faults surrounding the valley could potentially cause ground shaking. Ground shaking, shallow groundwater, and unconsolidated soils combined can generate liquefaction. With adherence to Construction Standards, remedial grading and materials would be required to be utilized and United States Geologic Survey (USGS) Seismic Design Parameters would be adopted as minimum values for the project. Impacts would be less than significant with mitigation.

b) Less than Significant Impact

The proposed project would result in minor erosion of soils on or offsite during project construction due to the presence of soil piles from excavation. However, construction of the proposed project would include BMPs as specified in the SWPPP to control wind or water erosion of exposed soils (see BMPs in *Section 2.5.2*). Some of the BMPs included in the SWPPP may include use of silt fences to prevent erosion and sedimentation into water bodies, covering of stockpiles, use of desilting basins, limitations on work during high-wind events, and post-construction revegetation and drainage requirements. Prior to construction, the construction contractor would be required to have an approved Fugitive Dust Control Plan to offset or reduce windblown dust. With implementation of BMPs and existing measures, the potential for soil erosion or topsoil loss during proposed project construction would be considered less than significant and no additional mitigation would be required.

d) Less than Significant Impact

Expansive soils are generally high in clays or silts that shrink or swell with variation in soil moisture content and can adversely affect the structural integrity of underground facilities including pipelines. The Geotechnical Report (Kamalzare 2018) performed an expansion index test on sample soils and revealed the soil in the project area had a low expansion index. Design of the proposed pipelines would adhere to CVWD's professional engineering standards, which provide regulations related to soils and foundations, to avoid adverse effects of potential expansive soils. Therefore, impacts related to expansive soils would be less than significant.

e) No impact

The proposed project converts 25 septic systems and connects approximately 490 residents to CVWD's sewer system. New septic tanks or alternative wastewater systems that would release directly to soils would be avoided due to the proposed project. There are no impacts related to soil suitability for septic systems.

f) Less Than Significant Impact

Significant paleontological resources are fossils or assemblages of fossils that are unique, unusual, rare, uncommon, diagnostically or stratigraphically important, and those that add to an existing body of knowledge in specific areas, stratigraphically, taxonomically, or regionally. They include fossil remains of large to very small aquatic and terrestrial vertebrates, remains of plants and animals previously not represented in certain portions of the stratigraphy, and assemblages of fossils that might aid stratigraphic correlations, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, paleoclimatology, and the relationships of aquatic and terrestrial species (County of Riverside 2002).

The proposed project area is located in the Salton Trough, a large tectonic depression that includes the Coachella and Imperial Valleys of southern California, and the western

half of the Mexicali Valley and the Colorado River delta in Mexico (Alles 2011). Over the past 4.5 million years, the Salton Trough has been periodically inundated with fresh and brackish waters, influenced by the Gulf of California, the Colorado River, and ancient Lake Cahuilla. Lake Cahuilla was a former freshwater lake that periodically occupied a major portion of the Salton Trough during the Holocene, approximately 10,000 to 240 years ago (Deméré 2002).

The *Riverside County Regional Integrated Plan* identifies the project area as having Undetermined Potential (U) for paleontological resources. Areas underlain by sedimentary rocks for which literatures or unpublished studies are not available have undetermined potential for containing significant paleontological resources.

According to the Geologic Map of the Palm Desert & Coachella 15-minute quadrangles (Dibblee and Minch 2008), the project site is underlain by alluvial sand and clay of valley areas. These relatively young sedimentary deposits are generally too young to contain fossilized material.

Project excavation is expected to reach depths of up to 14 feet below the ground surface. However, most of the project would take place in areas already disturbed and impacted by human activity. The entire area shows evidence of being graded in historical times for home site, storage yards, agricultural fields, utility alignments, and roadways. Furthermore, the project area is underlain by geologic deposits that are generally too young to contain fossilized material. As a result, the potential for encountering fossil resources during project excavation or ground disturbance is low and impacts to paleontological resources would be less than significant.

Mitigation Measures

Mitigation Measure GEO-1: **Dewatering**

Dewatering shall be conducted throughout construction activities in locations that are exposed to existing groundwater to reduce the potential for heaving of soil within excavation areas. To control groundwater seepage to open excavations, sump pits may be utilized. If pumping to sump pits is used as mitigation, sump pits should be filled with ¾-inch clean stone and lined with geotextile filter fabric to prevent excessive particle migration. Pumped water should be discharged away from open excavations. Groundwater may also be pumped and hauled to an appropriate discharge location, as approved by CVWD. The contractor shall be aware that the dewatering and trenching operations will result in significant changes to the effective stresses of the native soil within the construction area that may result in ground movement. The Contractor is solely responsible for designing and implementing the dewatering program and pipeline installation operations to prevent ground movement within and adjacent to the sewer line. CVWD shall review and approve proposed methodology and plans.

The proposed project shall be constructed in accordance with existing regulatory requirements and will incorporate the geotechnical engineering recommendations from the 2018 Geotechnical Report.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

Pollutants that are known to increase the greenhouse effect in the earth's atmosphere, thereby adding to global climate change impacts, are referred to as greenhouse gases (GHG). A number of pollutants have been identified as GHGs. The State of California definition of GHGs in the Health & Safety Code, Section 38505(g) includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Some GHGs, such as CO_2, occur naturally and are emitted to the atmosphere through natural processes. Water vapor is a GHG; however, it is short lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The most common GHGs that result from human activity are carbon dioxide, followed by methane and nitrous oxide.

The Global Warming Potential (GWP) measures how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of CO_2. "Carbon dioxide equivalent" (CO_2e) is the amount of GHG emitted multiplied by its GWP. CO_2 has a 100-year GWP of one; CH_4 has a GWP of 25; and N_2O has a GWP of 298.

Executive Order (EO) S-3-05 in 2005 set GHG emission reduction targets: reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and reduce GHG emissions to 80 percent below 1990 levels by 2050. SB 32, passed in 2016, required that CARB, in its next update to the AB 32 *Scoping Plan*, "ensure that statewide GHG emissions are reduced to at least 40 percent below the statewide GHG emissions limit no later than December 31, 2030." EO B-55 set a GHG emission reduction target for California to be carbon neutral by 2045.

CARB adopted the *Scoping Plan* in December 2008 and a *Scoping Plan Update* in December 2017. The *Scoping Plan* contains the strategies California will implement to achieve reduction of 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. In the *Scoping Plan*, "CARB recommends that lead agencies prioritize onsite design features that reduce emissions, especially from vehicle miles travelled (VMT), and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits locally." In 2015, the County of Riverside adopted a CAP to establish goals and policies that incorporate sustainability and GHG reduction targets into its management processes. The County set a goal to reduce emissions to 1990 levels by 2020, which is in line with the State's AB 32 GHG reduction targets. The CAP was updated in 2019 to contain further guidance on Riverside County's GHG Inventory reduction goals, thresholds, policies, guidelines, and implementation programs including 2030 thresholds to reduce emissions to 40 percent below 1990 levels. In particular the CAP elaborates on the County's *General Plan* goals and policies relative to GHG emissions and provides a specific implementation tool to guide future decisions of the County. The County's CAP includes a review process procedure for evaluating individual project GHG impacts and determining the significance under CEQA. The County's CAP is qualified for CEQA tiering and streamlining of individual projects' CEQA review. The County's CAP has set a threshold of 3,000 metric tons (MT) CO_2e per year to be used to identify projects that, when combined with the modest efficiency measures (e.g., energy efficiency matching or exceeding the Title 24 requirements in effect as of January 2017; water conservation measures that match the California Green Building Standards Code in effect as of January 2017) are considered less than significant.

On December 5, 2008, the SCAQMD Board approved interim CEQA GHG significance thresholds for stationary sources, rules, and plans using a tiered approach for determining significance. Tier 3, the primary tier the SCAQMD board uses for determining significance, set a screening significance threshold of 10,000 MTCO2e/year for determining whether a stationary source project would have a less than significant cumulative GHG impact (SCAQMD 2008b). While useful for a reference, this threshold is meant to apply to industrial projects where SCAQMD is the lead agency. Therefore, for the purposes of this analysis, the County of Riverside screening level is used as a threshold to determine significance of the proposed Project under CEQA.

Climate change is a cumulative issue. Most projects do not generate sufficient GHG emissions to directly influence climate change by any noticeable degree; however, a project can contribute incrementally to cumulative effects that are significant. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15064[h][1]).

a) Less Than Significant Impact

The project would generate GHG emissions through the burning of fossil fuels or other emissions of GHGs, as a result of both construction and operations activities. Direct

emissions would result from fuels burned to power construction equipment and worker and heavy construction equipment trips to and from the site. Construction is anticipated to be spread out over approximately ten months.

Once operational, the project pipelines would require routine maintenance, which would have a relatively small amount of GHG emissions from vehicle trips. However, CVWD would continue to operate its water system with no operational modifications. The proposed project would not result in a net change in O&M activities and GHG emissions from mobile sources would, therefore, be negligible.

Once the project is installed, the pipelines would not have a substantial demand for electricity or natural gas because they would be pressurized in accordance with CVWD's existing master plan. The proposed project may be associated with occasional GHG emissions from 'area' sources, including operation of landscaping equipment or recoating pipelines. The estimated amount of energy consumed by the pumps at the new lift station would be 24,000 kWh per year. CalEEMod Version 2016.3.2 was used to quantify GHG emissions associated with the project. This software was developed in conjunction with the CAPCOA to estimate air emissions, including GHGs. CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include but are not limited to the United States EPA AP-42 emission factors, CARB vehicle emission models, studies commissioned by California agencies such as the CEC and CalRecycle. The project's total construction and operational footprints were factored into the model to evaluate whether the estimated GHG emissions would exceed the established thresholds and therefore conflict with plans and efforts of reducing the emissions of greenhouse gases.

Construction-related GHG emissions were amortized over a 30-year period and as added to estimated annual operational GHG emissions, consistent with SCAQMD guidance (SCAQMD 2008b). The currently applicable GHG thresholds for local lead agency consideration are referenced from the Riverside County CAP. Under this guidance, a screening threshold of 3,000 $MTCO_2e$ per year has been established to identify projects that would have a less than significant impact. Annualized GHG emissions are summarized in **Table 3-7**.

Table 3-7: Proposed Project GHG Emissions ($MTCO_2e$/year)

Source	$MTCO_2e$
Energy	19
Mobile	*Negligible*
Area	*Negligible*
Amortized Construction Emissions	14
Total	33
Riverside County CAP Screening Threshold	*3,000*
Significant?	***No***

As shown in **Table 3-7** resulting from the CalEEMod calculations, the project is expected to generate approximately 33 $MTCO_2e$ per year from annualized construction, area, energy, stationary, waste, and water usage sources. As such, the project GHG emissions would not exceed the threshold of significance set at 3,000 $MTCO_2e$ per year. Having been evaluated against the regionally accepted thresholds, which are part of the State's regulations aimed at addressing climate change, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Less than significant impacts are expected.

b) Less Than Significant Impact Under Assembly Bill 32 passed in 2006, California must reduce its emissions to 1990 levels (431 million metric tons) by 2020. Senate Bill 32, signed in 2016, requires the state to go even further than AB 32 and cut emissions 40 percent below 1990 levels by 2030—the most ambitious carbon goal in North America. California's primary programs for reducing greenhouse gases to 1990 levels by 2020 are the Renewables Portfolio Standard, the Advanced Clean Cars Program, the Low Carbon Fuel Standard and the Cap-and-Trade Program. Additional programs address a variety of greenhouse gas sources. These include the Short-Lived Climate Pollutants Strategy, the Sustainable Communities Strategy and the Sustainable Freight Action Plan. The *2030 Scoping Plan* (CARB 2017), lays out how these initiatives work together to reduce greenhouse gases to achieve California's 2030 target of 260 million metric tons and also to reduce smog-causing pollutants. This target will require California to more than double the rate at which it has been cutting climate-changing gases. Future reductions will occur against a backdrop of natural sources of GHGs which are increasingly variable because of the climate change California is already witnessing.

The estimated GHG emissions resulting from construction and operation of the proposed development will not exceed the 3,000 $MTCO_2e$ per year screening threshold, therefore the project's GHG emissions would not conflict with plans and policies adopted for the purpose of reducing GHGs emissions, including the Riverside County CAP and the *2030 Scoping Plan*. The *2030 Scoping Plan* focuses on reducing energy demand, and GHG emissions, that result from mobile sources and land use development. The proposed project would not involve a considerable increase in new vehicle trips or land use changes that would result in an increase in vehicle trips, such as urban sprawl. As such, the project is not expected to interfere with the applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions, including AB 32 and SB 32. Less than significant impacts are anticipated.

Mitigation Measures: None required.

3.9 Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☒	☐
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

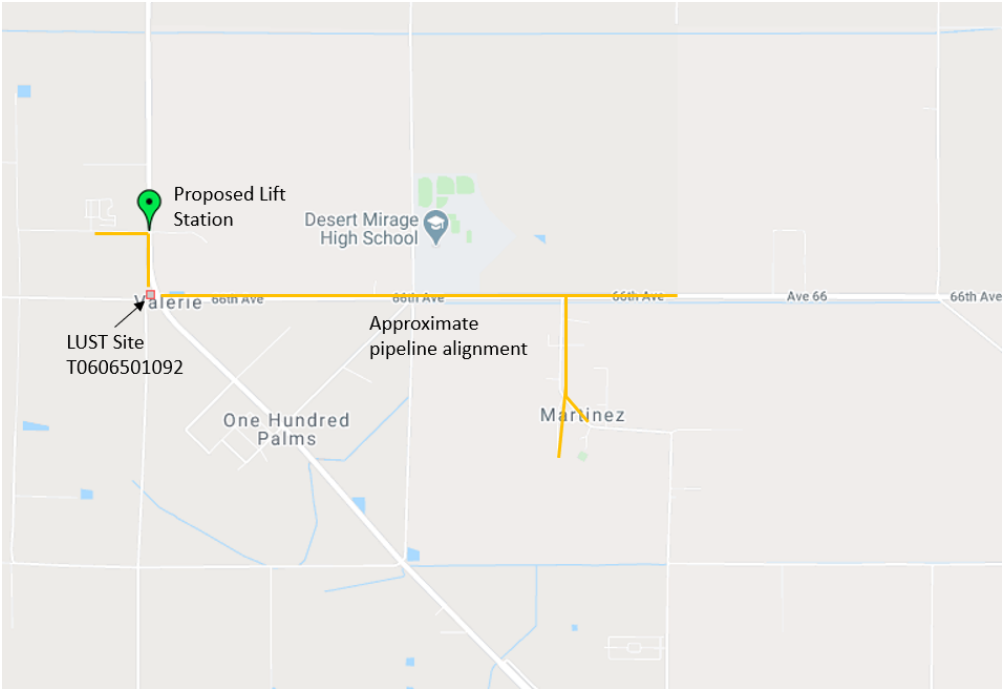
Discussion

Hazardous materials are currently used throughout the project area for agricultural, residential, transportation, construction, and other similar land uses. Through natural events, system failures, and accidents (spills), hazardous materials can become a risk to the environment and human health. Numerous local, state and federal laws exist to regulate the storage, use, handling and transportation of hazardous materials. To increase public safety and awareness of hazardous materials exposure risk, businesses and entities that handle, store, transport, or use hazardous materials are required to file

reports with appropriate authorities and maintain emergency response plans in the event of a hazardous materials release.

A regulatory records search was performed for the project area using the SWRCB *GeoTracker* database (SWRCB 2020) and the California Department of Toxic Substances Control (DTSC) *EnviroStor* database (DTSC 2019). These lists are a compilation of information from various sources listing potential and confirmed hazardous waste and hazardous substances sites in California. The *GeoTracker* database identifies a single Leaking Underground Storage Tank (LUST) cleanup site located at the northwest corner of Avenue 66 and Harrison Street, see **Figure 3-6** below (Apple Market Two, SWRCB 2020). RB Case #7T2274022 Cleanup Status is completed and the case is close. The website did not indicate the existence of: Cleanup Program Sites (CPSs, formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites), Military Sites (DoD non USTs), Land Disposal sites, Permitted UST facilities, Waste Discharge Requirement (WDR) sites, or Agricultural Waivers Program (Irrigated Lands Regulatory Program, ILRP) sites.

Figure 3-6: SWRCB GeoTracker Identified one LUST Site in the Project Area



EnviroStor identified one cleanup site within the project area. The cleanup site is the Coachella Valley Unified School complex (88 acres at Avenue 66 and Tyler Street). The investigation evaluated agricultural-generated contaminants (DDD, DDE, and DDT). The area was cleared of industrial contamination, but high levels of arsenic were discovered in the soils due to transport by surface water (flooding). Grading for floodplain mitigation was utilized to bury soils with high levels of arsenic. The Status of the site is identified as "No Further Action" As of 9/14/2000. DTSC notes that DTSC must be notified if native

soils will be disturbed. At the time of the investigation, the project site was vacant, however, it now is the location of the K-12 Education Complex. The proposed pipeline alignment is on the southside of the Education Complex along Avenue 66. The proposed project would not disturb native soil and would be constructed within the existing right-of-way.

The proposed project alignment is adjacent to or within Tribal Lands owned by the Torres-Martinez Desert Cahuilla Indians. Other areas are under the jurisdiction of Riverside County encompassing a range of land uses including Residential, Commercial and Public Facilities (schools). Most land designated as commercial and residential remains undeveloped, as depicted in **Figure 3-2** (County of Riverside 2016). The Las Palmitas Elementary School, Toro Canyon Middle School, and Desert Mirage High School are located north of and adjacent to Avenue 66 at Tyler Street. A drainage ditch located south of and adjacent to Avenue 66 collects drainage from the proposed project area (Avenue 66 and areas north).

The Cal Fire Resources Assessment Program (FRAP; CalFire 2006) assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. Through the FRAP, Cal Fire produces maps designating very high fire hazard severity zones (VHFHSZ) within Federal, State and Local Responsibility Areas. The project is located within both Local Responsibility Areas (Western Riverside County) and Federal Responsibility Areas. The project area is designated as a non-VHFHSZ.

The Jacqueline Cochran Regional Airport is located 2.5 miles north of Avenue 66. The Project area lies partly within the Airport Influence Area (Zone D, Primary Traffic Patterns).

a) Less than Significant Impact

Construction of the proposed project would temporarily increase the routine transport and use of hazardous materials commonly used in construction activities. Limited quantities of miscellaneous hazardous substances, such as gasoline, diesel fuel, hydraulic fluids, paint, and other similar materials, would be brought into the project area, used, and stored during construction of the proposed project. The proposed project would be required to comply with applicable standards, including Division 20, Chapter 6.5, Article 6.5, Article 6.6, and Article 13 of the California Health and Safety Code and Title 40 CFR Part 263, that regulate the transport, use, storage, and disposal of hazardous materials. Upon completion of construction, the proposed project would not result in additional O&M activities requiring the transport of hazardous materials. Therefore, impacts due to transportation of minor amounts of hazardous materials would be less than significant and no mitigation would be required.

b) Less than Significant with Mitigation Incorporated

Construction of the proposed project could create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials used in construction, which include diesel fuel and minor amounts of paints, fuels, solvents and glues. The potential exists for accidents to occur during construction activities, which could result in the release of hazardous materials into the environment. **Mitigation Measure HAZ-1** requires development of a Hazardous Materials Management Spill Control Plan that includes project-specific contingencies. Upon completion of construction, the proposed project would not result in a potential to release hazardous materials into the environment. With **Mitigation Measure HAZ-1**, impacts resulting from potential hazardous materials-related accidents during construction would be reduced to a less-than-significant level.

c) Less than Significant with Mitigation Incorporated

A portion of the Project Area is located within 0.25 mile of an existing school site representing about 20% of the planned construction activity. The school complex is north of the project area at the intersection of Avenue 66 and Tyler Road. Natural drainage and predominant wind patterns are from north to south. CVWD would coordinate with school-district officials to help identify a construction schedule and prepare a Traffic Control Plan (**Mitigation Measure TRA-1**). **Mitigation Measure HAZ-1** establishes a Hazardous Materials Management and Spill Control Plan designed to address child safety and school operations. With the mitigation measure and Standard Conditions, the project impacts at any school sites resulting from the handling of hazardous materials or wastes or emissions of hazardous air contaminants would be less than significant.

d) No Impact

The GeoTracker database search indicated there are two active hazardous materials cleanup sites within a quarter mile of the proposed project. There are no active cleanup sites listed on the DTSC's EnviroStor database within a quarter mile of the project area. The Cortese List is a planning document submitted annually to Cal EPA that comprises data previously discussed in the environmental setting of this section. The project area is not located on a property identified on the list compiled by DTSC pursuant to Government Code §65962.5. Construction and operation associated with the proposed project would not create a significant hazard to the public or the environment through the release of existing materials related to a listed hazardous materials site; there would be no impact.

e) Less than Significant

The Jacqueline Cochran Regional Airport is located approximately 2.5 miles northwest of the project area. The proposed project is partially within the airport influence area (Zone D, Primary Traffic Patterns). Under Zone D, the Local Area Plan requires review with the Airport for the erection of objects over 70 feet in height. The proposed construction would not require equipment to be raised to 70 feet in height. The proposed lift station building would be a maximum of 7 feet in height with a surrounding perimeter fence 8 feet in height. The proposed IID distribution pole would be 40 feet tall. The project area is not located near a private airstrip. Upon completion of construction, none of the proposed project components would create an aircraft safety hazard or expose residents or workers in the area to excessive aircraft noise. Therefore, impacts would be less than significant, and no mitigation would be required.

f) Less than Significant with Mitigation Incorporated

Construction of the proposed project would involve installation of approximately 19,625 linear feet of pipeline, remove 25 septic systems, and construct a new lift station. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. Construction activities would take place within existing rights-of-way, as well as on private and public land. Potential staging areas include vacant private and public land, parking lots, and segments of closed traffic lanes. Avenue 66 is categorized as an Urban Arterial Roadway. Harrison Street is an Expressway. Martinez Road is not categorized in the Local Area Circulation Plan. Therefore, project construction would temporarily block access to some roadways and driveways that are currently used by emergency response vehicles or in emergency evacuations. *Section 3.17 Transportation* addresses how CVWD would communicate with emergency response agencies to develop emergency access strategies under **Mitigation Measure TRA-1**. Long term, the proposed project would not physically impair or otherwise interfere with emergency response or evacuation in the project vicinity as the majority of the project components would be located below-grade and ground surfaces would be returned to pre-construction conditions. Thus, impacts would be less than significant with mitigation.

g) No impact

Cal Fire has identified wildfire risk areas through the Fire Hazard Severity Zone maps. The Western Riverside County LRA map designates the project area as a non-VHFHSZ. The project would be constructed within roadway rights-of-way and developed or disturbed areas; the project area does not contain and is not adjacent to wildlands. See *Section 3.20 Wildfire* for more information. Riverside County Fire Department Station No. 40 is located at 91350 Avenue 66, approximately 5 miles east of the project area. The project area has a low risk of wildfire. Therefore, impacts would be less than significant, and no mitigation would be required.

Mitigation Measures

See **Mitigation Measure TRA-1** in *Section 3.17 Transportation*.

Mitigation Measure HAZ-1: Hazardous Materials Management and Spill Control Plan

Prior to construction the construction contractor is required to submit to CVWD a Hazardous Materials Management Spill Control Plan that includes a project-specific contingency plan for hazardous materials and waste operations, including precautions taken in the proximity of a school zone. The plan shall be applicable to construction activities and shall establish policies and procedures according to applicable codes and regulations, including but not limited to the California Building and Fire Codes, and federal and California OSHA regulations. Elements of the Plan shall include, but not be limited to the following:

- A discussion of hazardous materials management, including delineation of hazardous material storage areas, access and egress routes, waterways, emergency assembly areas, and temporary hazardous waste storage areas;
- Notification and documentation of procedures;
- Spill control and countermeasures, including employee spill prevention/response training and a health and safety plan;
- Equipment maintenance; and
- Child safety and school operations.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
Would the Project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion of siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
v) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☒	☐
vi) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

The proposed project is located within the Whitewater River Watershed, which encompasses the entirety of the Coachella Valley. The drainage area of the Whitewater River Watershed is approximately 57.5 square miles and includes four sub-watersheds: Morongo, Shavers, San Gorgonio, and Coachella. The Whitewater River/Coachella Valley Stormwater Channel, which is the primary drainage course in the watershed, runs southeast through the Coachella Valley and drains to the Salton Sea. Water sheet flows southeasterly to the Salton Sea. The principal tributaries of the Whitewater River/Coachella Valley Stormwater Channel include the San Gorgonio River, Snow Creek, Falls Creek, Chino Creek, Mission Creek, Morongo Creek, Tahquitz Creek, Andreas Creek, Palm Canyon Wash, Deep Canyon Creek, and the Palm Valley Channel.

The project is located in the Colorado River Region (Region 7), where the approved *Colorado River Basin Water Quality Control Plan* (Basin Plan, Colorado River RWQCB, 1993 and amended through October 2005) identifies the beneficial water uses, describes the water quality which must be maintained to support such uses, and describes the programs, projects, and other actions necessary to achieve the standards and protect water quality. As part of Region 7, the Whitewater River Watershed Municipal Separate Storm Sewer System (MS4), is a compliance program that covers approximately 1,645 square miles, including all incorporated Coachella Valley jurisdictions and some unincorporated communities within a defined permit boundary. Based on the MS4 Permit Area Facilities Map (Exhibit WWR-7), published by Riverside County Flood Control

(RCFC), the project area and its immediate surroundings are located within the local MS4 permit boundary. The relevant proximate receiving water is the Coachella Valley Stormwater Channel, which is connected to the project by agricultural canals.

The Basin Plan establishes water quality standards for surface waters within the Colorado River Region, which include designated beneficial uses of those water bodies and the levels of water quality that must be met and maintained to protect those uses. For the nearest receiving water body to the project, Coachella Valley Storm Water Channel, the designated beneficial uses include freshwater replenishment (FRSH), water contact recreation (REC1), non-contact water recreation (REC2), warm freshwater habitat (WARM), wildlife habitat (WILD), and rare (RARE). The corresponding water quality objectives include measures that must be followed to protect against water quality degradation. To reach consistency with these objectives, the proposed project must comply with the MS4 regulations and ensure that no discharge from the project degrades the aesthetic qualities or impair the dissolved oxygen concentrations in the receiving surface waters. Accordingly, the proposed project is not permitted to discharge tainting substances, toxicity, altered runoff temperature, altered runoff pH, suspended and settable solids, total dissolved solids, bacteria, biostimulatory substances, sediment, turbidity, radioactivity, chemical constituents, and pesticide waters outside of any permit parameters.

The nearest water body to the project site is the Coachella Valley Stormwater Channel, located approximately 2.1 miles to the east (see **Figure 3-7**). The Coachella Valley Stormwater Channel is an earthen channel engineered to serve as the backbone to the region's flood control system. This channel is routinely maintained and operated by CVWD. The Coachella Valley Stormwater Channel's natural drainage follows the coalescing alluvial fan and plain surfaces descending easterly from the Santa Rosa Mountains, passes approximately 2 miles east of the project area, and continues toward the valley floor area.

Figure 3-7: Proximity of Proposed Project Area to Coachella Valley Stormwater Channel

Early agricultural development in past decades resulted in the conversion of alluvial plains into agricultural fields. As a result, portions of the alluvial plains were curtailed to accommodate farmland, which was protected by a system of berms and surface conveyances often connected to the Coachella Valley Stormwater Channel. Throughout the Thermal and Oasis floor area where the project is situated, conveyance systems from existing agricultural uses consist of earthen canals and ditches. This includes a ditch along the south side of Avenue 66. These types of canals have operated and have been maintained for decades to primarily convey irrigation return water from subsurface drains serving irrigated agricultural lands to the Coachella Valley Stormwater Channel.

In areas where the assessed water quality does not meet the standards to support beneficial uses, the water body is listed under Section 303(d) of the Clean Water Act (CWA). Currently, within the Coachella Valley Stormwater Channel, the 17 mile stretch from Point Happy (in La Quinta) to the Salton Sea is listed on the State's 303 (d) List of Impaired Water Bodies for Indicator Bacteria. In the 2 mile stretch from Lincoln Street to the Salton Sea, the Coachella Valley Stormwater Channel is listed for Polychlorinated Biphenyls (PCBs and the pesticides Toxaphene, Dichlorodiphenyltrichloroethane (DDT), and Dieldrin. The Coachella Valley Stormwater Channel is also listed for Nitrogen/Ammonia and Toxicity (SWRCB Resolution R7-2014-0025). The Colorado River RWQCB develops and implements total maximum daily loads (TMDLs) to address these impairments and help achieve water quality standards. Water quality is also addressed through compliance with the NPDES stormwater discharge permits issued to municipalities, construction sites and industrial facilities to control pollutants in storm water discharges to local surface waters.

Pertaining to construction, the project proponent must obtain coverage under State's most current Construction General Permit (CGP), Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-006-DWQ. Compliance with the CGP involves the development and implementation of a project-specific SWPPP designed to reduce potential adverse impacts to surface water quality during the period of construction (see Best Management Practices in *Section 2.5.2)*. The required SWPPP prepared by a trained individual must identify the limits of disturbance during each phase of construction with specific locations where activities will require implementation of storm water BMPs. Storm water BMPs refer to a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent, eliminate, or reduce the pollution of waters of the receiving waters. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks. Consistent with the CGP, SWPPP implementation must include good site management (housekeeping), non-stormwater management, erosion control, sediment controls, run-on and runoff controls, along with inspection, maintenance and repair measures. Other relevant requirements include proper waste management, proper material handling and storage within the allowable construction limits.

Groundwater

The Coachella Valley Groundwater Basin (DWR Basin No. 7-21) underlies the Whitewater River Watershed. The Coachella Valley Groundwater Basin has an estimated storage capacity of 40 million acre-feet (AF) of water within the upper 1,000 feet (CVWD 2016). The Coachella Valley Groundwater Basin is divided into four subbasins: Indio (DWR Basin No. 7-21.01), Mission Creek (No. 7-21.02, Desert Hot Springs (No. 7-21.03, and San Gorgonio (No. 7-21.04). The Indio Subbasin underlies the project area.

Natural recharge is attributed to surface runoff and subsurface inflow; however, the Indio Subbasin is primarily recharged through groundwater replenishment efforts by CVWD and Desert Water Agency. CVWD operates and maintains three replenishment facilities within the Indio Subbasin: the Whitewater River Groundwater Replenishment Facility, the Thomas E. Levy Groundwater Replenishment Facility, and the Palm Desert Groundwater Replenishment Facility. These facilities recharge imported water.

The Coachella Valley Groundwater Basin is designated by DWR as a medium priority basin and is subject to the provisions of the Sustainable Groundwater Management Act (SGMA). CVWD is the Groundwater Sustainability Agency (GSA) for the majority of the eastern portion of the Indio Subbasin, including the area that underlies the project area.

The RWQCB's designated beneficial uses of the Coachella Valley Groundwater Basin include Municipal and Domestic Supply (MUN), Industrial Service Supply (IND), and Agriculture Supply (AGR). Groundwater supply used for potable uses is generally of high quality; however, within allowable regulatory ranges, CVWD treats delivered groundwater with free chlorine as a precautionary measure prior to distribution for potable use. Some areas of the Coachella Valley Groundwater Basin naturally contain elevated levels of salinity and groundwater quality issues for naturally occurring substances such as

uranium, arsenic, chromium, and fluoride have occurred in isolated areas. Additionally, some localized areas have seen elevated nitrate levels. As discussed in *Chapter 2 Project Description*, this project will improve groundwater quality through the removal of septic systems and an increase in the production of recycled water in the future.

a) Less than Significant Impact

The proposed project is not expected to result in violations to water quality or waste discharge requirements. Potential water quality impacts associated with construction of the proposed project would be limited to short-term erosion/sedimentation that could occur during construction of the pipeline alignments. During construction, temporary dewatering operations would be conducted in accordance with **Mitigation Measure GEO-1** and the CVWD technical specifications, which are consistent with the allowable discharges in the MS4 due to the handling of uncontaminated groundwater. The temporary dewatering process would involve sump pumps and potential offsite discharge (see **Mitigation Measure GEO-1: Dewatering**) to ensure that the extracted water does not affect the local conditions when conveyed to the agricultural drainage system.

Construction of the proposed project would require coverage under the SWRCB's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity - Construction General Permit (Order 2009-0009-DWQ). The Construction General Permit requires preparation and implementation of a SWPPP containing BMPs to control sediment and other construction-related pollutants in storm water discharges. Such BMPs would include, but are not limited to, general housekeeping practices such as sweeping up of site debris, proper waste disposal procedures, use of tarps on any stockpiles, containment of building materials, and inspection for leaks and spills from construction vehicles and equipment.

During construction, the project would also be required to comply with SCAQMD Rule 403 and 403.1, which prompt the obligation to prepare and implement a Fugitive Dust (PM_{10}) Control Plan. Implementation of the Fugitive Dust Control Plan primarily pertains to air quality, but also supports water quality protection through the requirement of soil stabilization measures to prevent sediment erosion and track-out. With implementation of the SWPPP and Dust Control plans, storm water discharges from the proposed project site during construction are not expected to violate existing water quality standards or waste discharge requirements set by the RWQCB. Impacts would be less than significant.

b) Less than Significant Impact

As discussed in *Section 3.14 Population and Housing*, the proposed project would extend CVWD's wastewater services to a disadvantaged community and would not induce population growth or increase water demands. During the life of the project, activities would not involve the direct withdrawal of groundwater in quantities that would affect regional groundwater levels. Therefore, the proposed project would not be expected to decrease groundwater supplies or interfere with groundwater recharge efforts. Impacts would be less than significant, and no mitigation would be required.

c) Less than Significant Impact

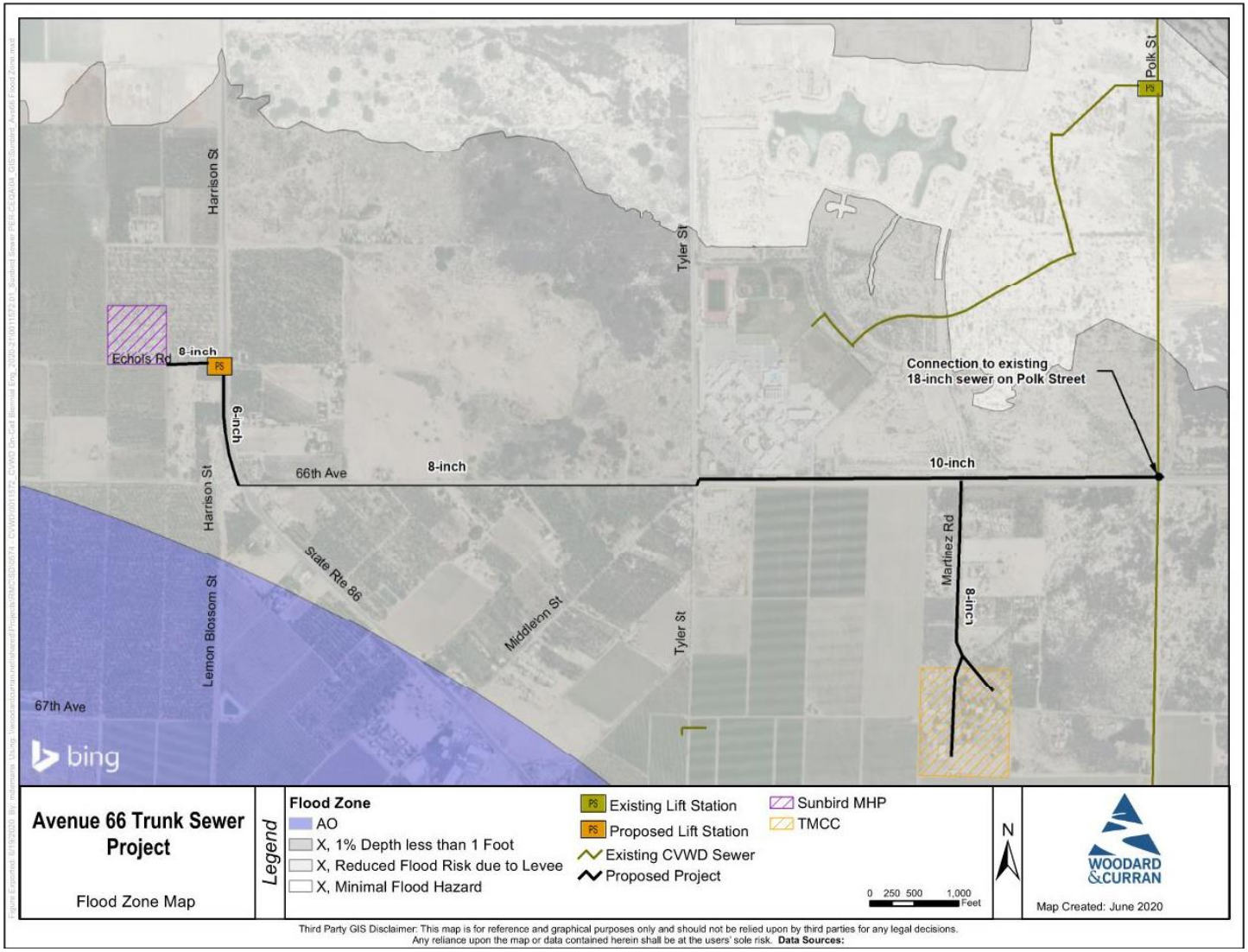
The proposed project would not result in a change in the local drainage patterns of the project area. The pipelines would be installed below ground, surfaces would be restored to pre-construction conditions. The proposed lift station construction will be 140 square feet and will not change any of the surrounding landscaping. Therefore, no changes in drainage patterns would occur and no impacts to the existing storm drain system in the project area would be expected. All construction activities would be conducted in accordance with BMPs specified in the construction SWPPP to prevent erosion and siltation, and other construction-related pollutants such as potential leaks from construction equipment.

The proposed project does not involve construction or operation of a levee or dam. The project Area is not located in areas that would be affected by levee or dam failure. The site is not susceptible to seiche or tsunami inundation because there are no major landlocked bodies of water within 6 miles. The site is not located in a landslide hazard area. Local topography and soil types are such that the potential for mudslides is extremely low. Project effects relative to increasing the impacts of a natural disaster, or further exposing people or structures to risks as a result of flooding due to failure of a levee or a dam, or seiche, tsunami, or mudflow caused by an earthquake or other natural disaster would be no impact.

FEMA evaluates potential flood hazards. The FEMA Flood Insurance Rate Maps (FIRMs) serve as the basis for identifying those potential hazards and determining the need for and availability of federal flood insurance. According to FIRM panel 06065C2910H, effective March 6, 2018, the entire project area lies within Zone X, which is categorized by FEMA as a 500-year flood zone with minimal flood hazard (see **Figure 3-8**). As designed, the proposed development would not alter the existing flood zone characteristics identified in the Flood Insurance Rate Maps. As such, the project would not result in any structures or housing in an area subject to flooding by the (100-year, 1-percent-annual-chance) flood depths designated by FEMA. Although portions of the proposed project would be located within the 500-year flood hazard zones, the proposed project would include installation of underground pipelines, and construction of a lift station and associated electrical facilities that would not risk release of pollutants due to flooding upon completion of construction. The proposed project would not conflict with the implementation of a water quality control plan or sustainable groundwater management plan. Thus, potential impacts to drainage patterns resulting in erosion, flooding, or water quality issues would be less than significant and no mitigation measures would be required.

Mitigation Measures. None required.

Figure 3-8: Flood Zone in Proposed Project Area



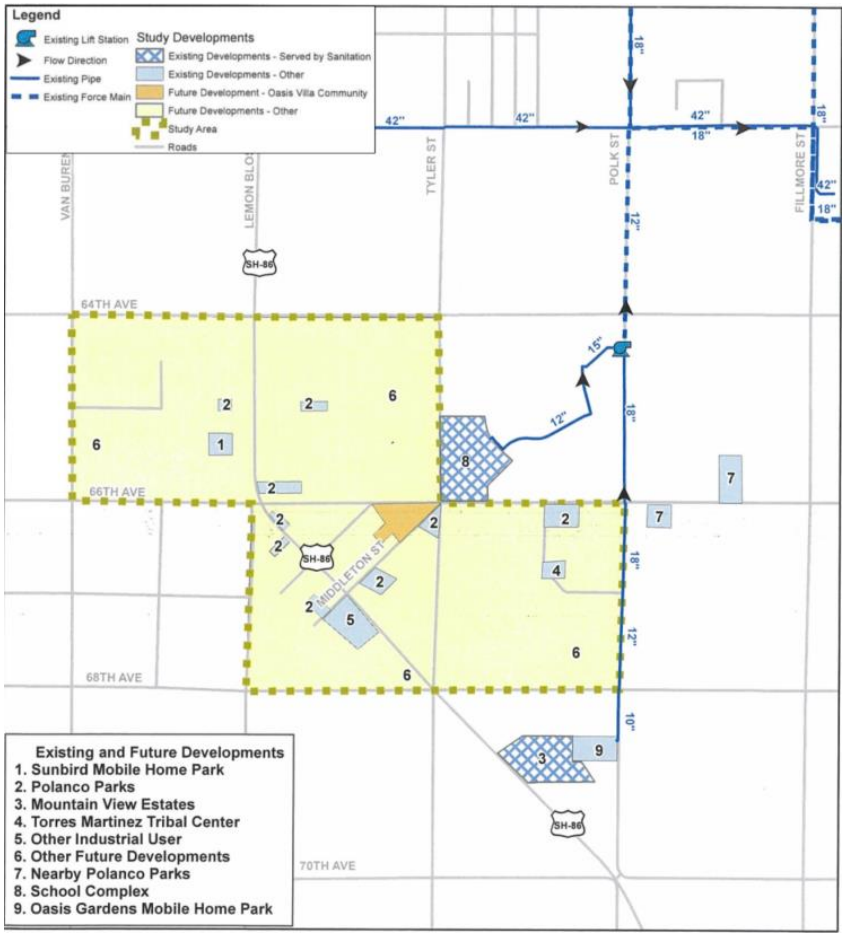
3.11 Land Use and Planning

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Discussion

The project alignment is located within the unincorporated community of Thermal within Riverside County. Thermal contains agriculture, industrial uses as well as residential and commercial uses, open space and schools. According to the *Riverside County Eastern Coachella Valley Area Plan* (County of Riverside 2016), the project area depicted in **Figure 3-2** includes tribal lands, public facilities, commercial retail, residential and agriculture land use designations. Residential, commercial, and industrial developments are scarce as indicated by the development map (**Figure 3-9**). Most residential developments (locations 1, 2, 3, 7, and 9) are well-established trailer parks.

Figure 3-9: Existing and Proposed Community Developments



The proposed pipeline route along Avenue 66 is bordered by date farms and vacant lots with a few commercial and residential structures along Harrison and Avenue 66. On the northeast corner of Tyler and Avenue 66, there are three schools located adjacent to the project alignment Las Palmitas Elementary School, Toro Canyon Middle School, and Desert Mirage High School. The pipeline route is also bordered by the Torres-Martinez Desert Cahuilla Indian Reservation north of Avenue 66 between Harrison Road and Tyler Road and then south of Avenue 66 between Tyler Road and Polk Street.

a) No impact

The proposed project would remove 25 community septic systems, install 19,625 feet of underground gravity sewer pipeline (including on-site connections) in existing rights-of-way, and a new lift station. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. Construction of the proposed pipelines would temporarily affect adjacent land uses through increased dust, noise, and traffic, but impacts would cease upon completion of construction and would not permanently affect the existing surrounding land uses. The proposed lift station at Echols

and Harrison Road is located next to date palm groves and would not divide an established community. No impacts are expected.

b) No impact

The project area does not alter or encourage modifications to existing zoning or land use plans. The proposed lift station is zoned as tribal land and would support residents at the TMCC. The pipelines would be installed below-grade within roadway rights-of-way and on public and private lands and would comply with Riverside County's land use policies and regulations. All surfaces would be restored to pre-construction conditions upon completion of construction. The proposed lift station at Echols Road and Harrison Street would be constructed on land zoned as tribal land and support residents of the Torres-Martinez Desert Cahuilla Indians. Therefore, the proposed project would be consistent with all applicable land use plans, policies and regulations of agencies with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. No impacts would occur, and no mitigation would be required.

Mitigation Measures: None required.

3.12 Mineral Resources

Would the Project:	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

Discussion

Mineral resource extraction is an important component of Riverside County's economy. Riverside County has extensive deposits of clay, limestone, iron, sand, and aggregates (County 2015). However, according to the *Riverside County General Plan Open Space Element* (County of Riverside 2015) and the California DOC CGS *Mineral Land Classification* online mapping tool (DOC 2015), the project area is located in an unstudied area and has no Mineral Resource Zone designation. There are not mineral resource extraction facilities within the project area.

a, b) Less than Significant Impact

The project area is located in an unstudied area and has no MRZ designation. The proposed project would construct gravity sewer pipelines within roadway rights-of-way and construct an accompanying one-half acre lift station and associated electrical facilities. Because the construction activities would primarily occur on developed land, the proposed project would not result in a substantial loss of availability of locally or regionally important mineral resources and impacts would be less than significant.

Mitigation Measures: None required.

3.13 Noise

Would the Project result in:	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

Discussion

Potential noise levels are compared to local ambient noise standards, within the context of the existing ambient noise setting. The term, “ambient noise” refers to the composite of noise from all perceptible sources. It constitutes the existing level of environmental noise at a given location (County of Riverside 2015). A decibel (dB) is a unit for measuring the relative amplitude of a sound equal approximately to the smallest difference normally detectable by the human ear, the range of which includes approximately one hundred thirty (130) decibels on a scale beginning with zero decibels for the faintest detectable sound. A-weighting (dBA) means the standard A-weighted frequency response of a sound level meter, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear for moderate sounds. Maximum sound level (L_{MAX}) means the maximum

sound level measured on a sound level meter (County of Riverside 2007). Community Noise Equivalent Level (CNEL) is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7pm to 10pm and after the addition of 10 decibels to sound levels in the night from 10pm to 7am. Day-Night Average Level (L_{dn}) is the average equivalent A-weighted sound level during a 24-hour day, obtained after addition of 10 decibels to sound levels in the night from 10pm to 7am. CNEL and L_{dn} both represent daily levels of noise exposure averaged on an annual or daily basis (County of Riverside 2015).

A series of land uses have been deemed noise sensitive land uses by the State of California. These land uses require a serene environment as part of the overall facility or residential experience. Many of these facilities depend on low levels of sound to promote the wellbeing of the occupants. These uses include, but are not necessarily limited to, schools, hospitals, rest homes, long term care facilities, mental care facilities, residential uses, places of worship, libraries, and passive recreation areas (County of Riverside 2015).

Groundborne vibration can be described by both its amplitude and frequency. Amplitude may be characterized by particle velocity, which is measured in inches or millimeters per second. Vibration can be felt outdoors, but the perceived intensity of vibration impacts is much greater indoors, due to the shaking of the structure. Some of the most common sources of vibration come from trains, transit vehicles, construction equipment, airplanes, and large vehicles. Several land uses are especially sensitive to vibration, and therefore have a lower vibration threshold. These uses include, but are not limited to, concert halls, hospitals, libraries, vibration-sensitive research operations, residential areas, schools, and offices (County of Riverside 2015).

The *Riverside County General Plan Noise Element* (County of Riverside 2015) provides a systematic approach to identifying and appraising noise problems in the community; quantifying existing and projected noise levels; addressing excessive noise exposure; and community planning for the regulation of noise. It includes policies, standards, criteria, programs, diagrams, a reference to action items, and maps related to protecting public health and welfare from noise.

This Plan identifies a number of noise sensitive receptors including schools, hospitals, rest homes, long-term care facilities, residential, places of worship, libraries, and passive recreation areas. CNEL for community noise is shown below in **Table 3-8**. Sensitive receptors have a lower acceptable CNEL level than commercial or industrial noise levels. The County of Riverside discourages these sensitive land uses in areas with background noise greater than 65 dBA. Mobile noise sources may be one of the most disturbing noise producers in a community because they are louder than background noises and more intense than many acceptable stationary noise sources. Though the noise emitted from mobile sources is temporary, it is often more disturbing because of its abruptness, especially single noise-producing events such as vehicle backfires

Table 3-8: County of Riverside Land Use Compatibility for Community Noise Exposure

Land Use Category	Range of "Normally Acceptable" Community Noise Exposure Level (L_{dn} or CNEL, dBA)					
	55	60	65	70	75	80
Residential-low density single family, duplex, mobile homes	■	■				
Residential-multiple family	■	■	■			
Transient lodging-motels, hotels	■	■	■			
Schools, libraries, churches, hospitals, nursing homes	■	■	■	■		
Playgrounds, neighborhood parks	■	■	■	■		
Golf courses, riding stables, water recreation, cemeteries	■	■	■	■	■	
Office buildings, businesses, commercial, and professional	■	■	■	■		
Industrial, manufacturing, utilities, agriculture	■	■	■	■	■	
Source: *County of Riverside General Plan Noise Element* 2015.						

The *Riverside County General Plan* also determines vibration as another contributor to community disturbance. Groundborne vibration, also referred to as earthborne vibration, can be described as perceptible rumbling, movement, shaking or rattling of structures and items within a structure. Similar to noise, vibration can be described by both its amplitude and frequency. Amplitude is characterized by displacement, velocity, and/or acceleration. Typically, particle velocity (measured in inches or millimeters per second) and/or acceleration (measured in gravities) are used to measure vibration. Groundborne vibration can generate a heightened disturbance in residential areas. Human reaction to typical vibration levels is shown in **Table 3-9** below. These vibrations can disturb structures and household items while creating difficulty for residential activities such as reading or other tasks. Although groundborne vibration is sometimes perceptible in an outdoor environment, it is generally not deemed a problem as it is when experienced inside of a building. Groundborne vibration can be measured in terms of amplitude and frequency or vibration decibels (VdB). The operation of trains, buses, large trucks and construction activities that include pile driving, blasting, earth moving, and heavy vehicle operation commonly cause these vibrations. Other factors that influence the propagation or attenuation of groundborne vibration include distance to source, foundation materials, perimeter controls, soil and surface types.

Table 3-9: Reaction to Typical Vibration Levels

Vibration Level Peak Particle Velocity (inches/second)	Human Reaction
0.0059-0.0188	Threshold of perception, possibility of intrusion
0.0787	Vibrations readily perceptible
0.0984	Continuous vibration begins to annoy people
0.1968	Vibrations annoying to people in buildings
0.3937-0.5905	Vibrations considered unpleasant when continuously subjected and unacceptable by some walking on bridges
Source: *County of Riverside General Plan Noise Element* 2015.	

Riverside County Ordinance No. 847 Regulating Noise establishes countywide standards regulating noise and regulates noise in order to protect the health, safety, and general welfare of Riverside County residents. According to Ordinance 847, sound emanating from capital improvement projects of a government agency are exempt from the provisions of the ordinance. Therefore, the sound levels set in the Riverside County Noise Ordinance would not apply to the proposed project. The proposed project area is a blend of agricultural, commercial, and residential uses. The Ordinance can be used to understand acceptable sound levels in the region. However, using the Ordinance as a guideline, the Rural Community land use designation has a maximum decibel level set at 55 dBL_{max}. and Agriculture has a maximum decibel level set at 45 $dBL_{max.}$ The OSHA standard for workers with 8 hours of exposure per day is 85 dBA. The use of construction equipment would be limited to the hours between 7 a.m. to 7 p.m. on weekdays, and 8 a.m. to 5 p.m. on Saturdays. Construction activities would not be permitted on Sundays or federal holidays.

Existing Conditions

The ambient noise level of a region is the total noise generated within the specific environment and is usually composed of sounds emanating from natural and manmade sources. Noise levels monitored in a region tend to have wide spatial and temporal variation due to the great diversity of contributing sources. This is especially true for the proposed project area with its blend of agricultural, commercial and residential land uses.

The existing noise setting in the project area consists of residential activities and traffic noise from State Route 86 and other surrounding roadways. Base year noise levels were assessed for the *County of Riverside General Plan* (County of Riverside 2015). **Table 3-10** summarizes the existing traffic noise levels around the project area.

Table 3-10: County of Riverside Base Year Condition (2007) Traffic Noise Levels

Roadway Segment	Average Daily Trips (ADT)	L_{dn} (dBA) 50 feet from centerline of outermost lane	Centerline to 60 L_{dn} (feet)
Harrison Street between 62nd Avenue and 54th Avenue (approx. 2 miles north of Sunbird MHP)	12,300	72.9	403
State Route 86 between Pierce Street and 81st Avenue (approx.. 2 miles east of LS 55-21)	8,200	72.2	360
Source: *County of Riverside General Plan* Appendix I-1.			

The closest airport to the project area is the Jacqueline Cochran Regional Airport; however, the proposed project does not overlap the airport's forecasted noise contours (County of Riverside 2015, Appendix I-1, Figure 43).

a) Less than Significant with Mitigation Incorporated

The project has the potential to expose persons to noise resulting from construction activities and operations. Noise within the County of Riverside is regulated under the County's Noise Ordinance and acceptable noise levels are established in the County's *General Plan* (see discussion above).

Construction is anticipated to last 5 months. Construction activities would result in temporary noise increases. Construction noise levels would fluctuate depending on the construction phase, equipment type, and duration of use; distance between noise source and receptor; and presence or absence of existing barriers between noise source and receptor. The typical noise level of each piece of construction equipment that may be used for the project is shown in **Table 3-11**.

Table 3-11: Typical Construction Equipment Noise Levels

Equipment	Typical Noise Levels (dBA, at 50 feet)
Excavators	81
Backhoe	78
Dump truck	76
Front end loader	79
Water trucks	84[1]
Pavers	77
Roller	80
Flat-bed delivery trucks	74
Forklifts	75[1]
Concrete mixer truck	79
Jack hammer	89
Source: FHWA, 2006. 1. Water truck noise level was assumed to be comparable to a tractor. Forklift noise level was assumed to be comparable to a man lift.	

In general, project construction would be temporary and sporadic and would vary depending on the type of component being constructed. Construction along the pipeline alignments would continuously move from one location to another, as pipeline installation proceeds from one segment to the next. Thus, noise levels would affect any one receptor for a short duration of time.

During construction, truck traffic would generate noise levels along haul routes. Construction would involve 4 to 5 round-trip material delivery and/or soil export truck trips per day. Noise sensitive land uses located adjacent to proposed project construction areas and along haul routes would be subject to truck noise during construction.

Truck noise depends upon vehicle speed, load, terrain, and other factors. The effects of construction -related truck traffic would depend on the level of background noise already occurring at a particular receptor site, and the existing ambient noise levels. In quiet environments, truck noise would be more noticeable than where the existing ambient noise level is high.

Project-specific noise-sensitive receptors include: the school complex located at the northeast corner of Tyler Street; the TMCC on Martinez Road; the community of Valerie at Harrison Street and Avenue 66; and residences at the Sunbird MHP east of Harrison Street. None of these receptors are located within 100 feet of the proposed construction zone. Approximately 80% of the proposed pipeline alignment is adjacent to agricultural fields and open desert.

According to the Riverside County Noise Ordinance, Ordinance 847, sound emanating from capital improvement projects of a government agency are exempt from the provisions of the ordinance. Therefore, impacts-related to construction noise associated with the proposed project would be exempt from Riverside County Noise Ordinance standards. Furthermore, construction would occur during daytime hours consistent with the limits on private construction activities in the Noise Ordinance. In addition, the existing conditions in the project area are not quiet; the area is already subject to elevated ambient noise levels due to prominent traffic noise. Nonetheless, due to the close proximity of construction activities to residences, impacts from construction noise would be potentially significant. With implementation of **Mitigation Measure NOI-1**, which requires the construction contractor to implement the best available noise control techniques and equipment, construction-related noise levels would be reduced to less than significant.

Once operational, the proposed below-ground conveyance pipelines are not expected to result in a permanent increase in noise, other than noise associated with occasional vehicle maintenance trips. Operational noise generated by the project may be associated with the intermittent use of electrical motors to pump wastewater at the small capacity lift station near the Sunbird MHP. However, noise would be suppressed through containment within the lift-station housing. Noise at the construction site and nearby sensitive receptors would be monitored and reported through the Torres-Martinez Desert Cahuilla Indian Tribe. Operational vehicle maintenance trips would occur during daytime hours, between 7am and 8pm, consistent with the Riverside County Noise Ordinance. Therefore, the project would have less-than-significant long-term operational noise impacts.

b) Less than Significant with Mitigation Incorporated

Construction also has the potential to cause groundborne vibration and groundborne noise. Generally, a project would result in a significant impact if it produced groundborne vibration levels equal to or in excess of 0.1968 in/sec peak particle velocity (PPV). Typical vibration levels for construction equipment are shown in **Table 3-12**.

Table 3-12: Typical Construction Equipment Vibration Levels

Equipment	Typical Vibration Source Levels PPV at 25 feet (in/sec)
Vibratory roller	0.210
Caisson drilling	0.089
Loaded trucks	0.076
Jack hammer	0.035
Small bulldozer	0.003
Source: Source: FTA, 2006.	

As shown in **Table 3-12**, if a vibratory roller is used for construction of the proposed project, for example to replace roadways, it would result in groundborne vibration at levels that would cause annoyance to people in buildings at distances of 25 feet. The drilling equipment for the proposed trenchless pipeline segments would not be expected to result in significant vibration levels. According to the Federal Transit Administration Transit Noise and Vibration Impact Assessment (FTA 2006), groundborne vibration from construction attenuates based on peak particle velocity of the equipment and distance from the equipment to the receiver. Groundborne vibration from construction of the project is expected to attenuate to reach a less than significant level at a distance of 40 feet.

Potential impacts from construction-related groundborne vibration would be potentially significant. However, with implementation of **Mitigation Measure NOI-1**, construction-related vibration levels would be reduced to less than significant. Once operational, the proposed below-ground sewer pipelines and new lift station operation are not expected to result in a permanent source of groundborne vibration, other than vehicles associated with occasional maintenance trips. Operational vehicle maintenance trips would occur during daytime hours, between 7am and 8pm, consistent with the Riverside County Noise Ordinance. Therefore, the project would have less-than-significant long-term operational vibration impacts.

c) Less than Significant

The Jacqueline Cochran Regional Airport is located in the westerly part of the town of Thermal, approximately three miles north of the proposed project area. The Project partially lies within the Airport Influence Area Zone D (Primary Traffic Patterns), however it is not located within the 65 dBA noise contours for the airport. There are no private airstrips within the vicinity of the proposed project area. Although the proposed project would include expansion of CVWD's wastewater infrastructure, it would serve existing communities and does not propose new housing or businesses that would be exposed to excessive noise levels. Project construction and operations would not expose people residing or working in the proposed project area to excessive noise levels; no impact.

Mitigation Measures

Mitigation Measure NOI-1: Noise and Vibration Control During Construction

CVWD shall incorporate into the construction contract specifications the following noise and vibration control measures to be implemented by the construction contractor:

- Prior to construction, the Construction Contractor shall provide [CVWD-approved] written notification to residents within 500 feet of the proposed facilities undergoing construction shall be provided, identifying the type, duration, and frequency of construction activities. Notification materials shall be provided in English/Spanish translation and identify a mechanism for residents to contact CVWD's Project Manager related to noise or vibration concerns.
- During construction, the Construction Contractor shall use equipment (e.g., jack hammers, pavement breakers, and rock drills) which is hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust would be used. This muffler can lower noise levels from the exhaust by up to 10 dBA. External jackets on the tools themselves would be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures will be used such as drilling rather than impact equipment whenever feasible.
- During construction, the Construction Contractor shall comply with compaction standards for backfill. Vibration generated during soil compaction may be minimized by using a small compactor.
- During sheetpile driving for trench excavation, the Construction Contractor shall use the following measures: pushing the sheetpile in as far as possible with non-vibratory equipment (e.g., excavator) before using the vibrator; using a small, hand-operated vibratory hammer or one with a different operational frequency to further reduce the vibration potential; flooding the soils before tamping with the vibrator; and/or operating vibratory equipment with "throttling" when a vibrator must be used.
- All equipment and trucks used by the Construction Contractor for project construction shall use the best available noise control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) and be maintained in good operating condition to minimize construction noise impacts. All internal combustion engine-drive equipment shall be fitted with intake and exhaust mufflers which are in good condition.
- During construction, the Construction Contractor shall prohibit unnecessary idling of internal combustion engines. In practice, this would mean turning off equipment if it would not be used for five or more minutes.

- During construction, the Construction Contractor shall locate stationary noise-generating construction equipment, such as air compressors and generators, as far as possible from homes and businesses.
- The Construction Contractor shall locate staging areas as far as feasibly possible from sensitive receptors.

3.14 Population and Housing

Would the Project:	*Potentially Significant Impact*	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

The proposed project proposes to replace the existing septic sewer infrastructure that currently serves the 490 residents at Sunbird MHP and TMCC, with new sewer lines and a small capacity lift station. The proposed sewer infrastructure would connect to an existing 18-inch sewer line located on Polk Street, which eventually discharges at WRP-4. The Project does not propose new residential, commercial, or industrial developments, but does provide facilities that are sized to meet reasonable growth and connect additional DAC residences in the future.

The Project Report (Woodard & Curran 2020) contains additional information on population growth and needed wastewater flows in the region. Data from the U.S. Census Bureau indicate that approximately 800 people live in census blocks that generally represent the Project service area (American Fact Finder, 2010 Census Summary). Changes estimated by the Census Bureau indicate that the population declined by 2016. The prospects for a large population increase in these census blocks are nominal over the next twenty years.

The current population located within the project area is 490 residents. The current population of the Sunbird MHP is approximately 430 residents with 86 mobile homes. There is room for a few additional trailers, but the manager has indicated that these openings would remain vacant. The TMCC contains limited housing including: three single family homes, four mobile homes, and four elder apartments. Sixty people are

estimated to reside onsite and this population is not expected to vary. Tribal offices and service centers currently employ 27 people. This number is expected to increase over the next 5 years with the addition of a small fire department.

In the Project Report (Woodard & Curran 2020), CVWD estimates that the project pipelines can serve residents at Sunbird MHP and TMCC, with the projected annual average flow of 25,800 gpd. Connections to the project facilities over the next 3 to 5 years are expected to increase the average flow an additional 85,400 gpd (Akel Engineering Group 2017)). The Akel Study projects that new development will overtake the farming community within 20-40 years resulting in a build-out demand of about 1.5 MGD. Current estimates are that future growth will be slower than anticipated and therefore the proposed Project is not sized to service new development. The need for future upsizing will be determined by CVWD.

a) No impact

The proposed Project would extend existing sewer infrastructure to accommodate the existing Sunbird MHP and the TMCC, and the proposed sewer pipe is sized to accommodate additional connections within the next 3-5 years. These connections include nearby trailer parks, industrial connections, and Oasis Villa. However, upsizing will be needed in the future to service new development. The purpose of the proposed project is to eliminate existing septic systems and replace them with connections to the regional wastewater collection and treatment system. The proposed expansion of CVWD's wastewater infrastructure, and subsequent indirect growth, is consistent with planned growth in the area. The *Eastern Coachella Valley Area Plan* (County of Riverside 2012) expected the Eastern Coachella Valley region to double its population between 2010 and 2020. Current estimates show this population growth is slower than anticipated. Therefore, the proposed project would not induce substantial unplanned population growth, directly or indirectly, in the project area. Impacts would be less than significant, and no mitigation would be required.

b) No impact

The proposed Project would be constructed entirely within public right of way and would not displace any existing housing or require replacement housing. No impacts are anticipated.

Mitigation Measures: None required.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Discussion

Fire Protection

The project area falls under the jurisdiction of CAL FIRE Riverside County Fire Department (RCFD). The RCFD is staffed with a combination of County and State of California Department of Forestry & Fire Protection employees. They operate 96 fire stations that serve 1, 360,000 residents over 6,970 miles of Riverside County. There are two fire stations located in proximity of the project area. Thermal's primary fire station is RCFD Station No. 39, located at 56-911 Avenue 58, this station is approximately 5.0 miles from the proposed project. Riverside County Fire Department Station No. 40 at 91350 Avenue 66 is located approximately 5 miles east of the project area. It is the goal of the RCFD fire service to have the first engine company arrive on the scene within five minutes 90 percent of the time. Response times to emergency calls within the City average approximately four minutes or less 80% of the time.

Police

The Riverside County Sheriff's Department is contracted to provide law enforcement services to the community of Thermal. The Sheriff's department is located out of the Thermal Sheriff Station at 86-625 Airport Boulevard, approximately 5 miles from the project site. They have a response time of 3-minutes for emergency calls, the department has 36 sworn officers and 2-non-sworn totaling 38 positions.

Schools

The project falls within the boundary of the CVUSD. There are eight schools in the community of Thermal, three of which are located within a mile of the Project area. All three schools are located at the complex adjacent to the Project at Tyler Street. These three schools are Desert Mirage High School, Toro Canyon Middle School, and Las Palmitas Elementary School.

Parks

The Desert Recreation District provides park and recreational services to Thermal. It is the largest recreation district in California serving over 1,800 square miles. There are no parks located within the project area.

a) No Impact

The proposed project would not change existing demand for public services (e.g., fire and police protection, schools, parks, libraries, or health clinics) because the proposed project would serve existing communities and would not significantly or directly induce population growth (see *Section 3.13 Population and Housing* Lane closures and other potential traffic impacts caused by construction activities of the proposed project would have potential to impede emergency response to those areas, or to areas accessed via those routes. To ensure that project construction will not interfere with emergency response times or other performance public service objectives, the proposed project will implement the required Traffic Control Plan in **Mitigation Measure TRA-1**. Operations of the proposed Project would not alter emergency access. In addition, the O&M requirements for the proposed project would be minimal, and therefore would not result in an increase in the need for new staff from public protection services entities. As implementation of the proposed project would not change the demand for any public services, it would not require additional equipment or resources for those public service providers. The proposed project would have no impact on public services, and no mitigation would be required.

Mitigation Measures: None required.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

According to Riverside County's *Eastern Coachella Valley Area Plan* (County of Riverside 2016), the project area and vicinity includes tribal lands, public facilities, commercial retail, residential and agriculture land use designations. There are no parks located within the project area. Riverside County contains bicycle, pedestrian, and equestrian trails. Within the project area, portions of Harrison, Tyler, Filmore, and Avenue 66 are designated as Class I bike paths (County of Riverside 2016). The portion of Harrison Street between Echols Rd and Avenue 66 is considered not only a Class I bike path but is also a Class II bike path and a Design Guidelines trail. A regional trail follows the Whitewater River/Coachella Valley Stormwater Channel and along a portion of Avenue 66 to the west of the Whitewater River/Coachella Valley Stormwater Channel, ending at Avenue 66 and Tyler Street.

a, b) No impact

The proposed project would not increase the demand for neighborhood or regional parks, or other recreational facilities. The project proposes the extension of a gravity sewer pipeline and small capacity lift station to service the existing Sunbird MHP and TMCC. No residential land uses are proposed as part of the project that would increase the use of existing recreational facilities and regional parks. No construction or expansion of other recreational facilities is required for project implementation. No impacts to recreational facilities are expected and no mitigation is required.

Mitigation Measures: None required.

3.17 Transportation

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☒	☐	☐

Discussion

The Project area is located in Thermal, an unincorporated community in Riverside County, approximately six miles southwest of the intersection of State Route 86 and State Route 111 near Mecca. Primary access to the area is provided through State Route 86 from Interstate 10 at the City of Indio.

Transportation in the Coachella Valley is planned through the Riverside County Transportation Commission (RCTC) and the Coachella Valley Association of Governments (CVAG) in a regional effort. The RCTC plans and implements transportation and transit improvements and assists local governments with funding for local streets and roads to promote accessible transportation throughout Riverside County. RCTC's current *Long Range Transportation Plan* (LRTP) was adopted in 2019 and provides a comprehensive review of projects on the state highway, regional arterials, rail and bus, freight network, and active transportation. According to this plan, SunLine provides an intercity bus in Thermal. According to the LRTP, roadways in Coachella Valley are mostly non-congested.

The CVAG *Transportation Prioritization Study* (CVAG 2017b) was developed for the evaluation of the regional transportation system needs within the Coachella Valley and to assist CVAG in making funding decisions. The CVAG *Active Transportation Plan* (CVAG 2017a) provides goals and objectives related to alternative transportation within the Coachella Valley, and was prepared in conjunction with the *Transportation Prioritization Study*. The *Transportation Prioritization Study* notes that most of the roads in the area are two lane rural roads with pavement widths that vary between 24 and 28 feet; some roads have paved shoulders, but most do not (CVAG, 2017).

There are no rail systems or mass transit routes in proximity of the Project Area. Pedestrian and bicycle traffic are primarily associated with traffic to and from the existing school campus. Curb and sidewalk are located on the north side of Avenue 66 along the school campus frontage. Curb and sidewalk are also located adjacent to the Tribal Community Center Section, between Martinez Road and Tyler Street. Avenue 66 is a 2-lane east-west Urban Arterial highway (152 feet wide) characteristic of signalized and non-signalized intersections and reduced speed zones. Harrison Street north of Avenue 66 is identified in the Riverside County Circulation Element as an Expressway (128 to 220 feet wide). Martinez Road, Echols Road and other local roadways are identified as Collectors (74 feet wide). Segments of Avenue 66 are identified as a Regional Trail and Class I Bike Path. Harrison Street is designated as a Design Guidelines Trail, Historic Trail, and Class I Bike Path.

a) Less than Significant Impact with Mitigation Incorporated

Pipeline construction is anticipated to last up to 69 calendar days and occur on weekdays between the hours of 7:00 am and 6:00 pm. Multiple sections of roadway would be under construction simultaneously. Lift Station construction would last approximately 40 calendar days for electrical and mechanical crews to make adjustments and install the new pumps.

During construction, the project would generate trips associated with construction crews and materials deliveries. Construction would proceed for approximately ten months. Work on the pipelines and lift station would occur simultaneously, while onsite septic abandonment would follow construction of the new facilities (see Section 2.5.1). Construction would generate up to 90 round-trips per day, which includes trips for off hauling of export material, import of fill material, construction worker commuting, delivery of materials, and removal of the onsite septic systems. Operations of the proposed buried sewer pipeline and lift station would not affect transportation or traffic except for standard maintenance activities. Additional project-related traffic volumes during construction would be minor, however; the movement of traffic lanes to allow for construction would require reduced speed and provide the potential for congestion at two intersections.

Construction staging would occur primarily within existing roadways and public rights-of-way within the unincorporated Thermal area in Riverside County and within the Torres-Martinez Tribal Lands and TMCC. Project approvals would include an encroachment permit from the County of Riverside.

Construction-related traffic would be temporary, and potential traffic-related impacts would not occur in the same location over the 5-month construction period but would rather move along the pipeline alignment. All disturbed areas would be restored to original grade. As such, temporary construction impacts are not expected to have a significant impact related to the RCTC *Congestion Management Plan* (2011), the CVAG studies, or the SCAG RTP/SCS, which focus on long-term, regional circulation projects. Project-related effects relative to adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise are not significant.

Once operational, the project would not conflict with these regional transportation plans because it would install below-ground pipelines, a lift station and associated electrical facilities, and onsite work that would not have a permanent impact on circulation. CVWD would continue to operate its wastewater system with no operational modifications using standard vehicles. Long-term impacts on the circulation system plans would be less than significant.

Although construction impacts would not be substantial, construction of the proposed project may necessitate individual traffic lane closures. To ensure the appropriate traffic controls are implemented and potential traffic impacts related to lane closures are less than significant, the proposed project shall implement **Mitigation Measure TRA-1**. The Traffic Control Plan shall be developed in coordination with the Torres-Martinez Desert Cahuilla Indians, County of Riverside, and the CVUSD. Project coordination with emergency responders and development of an approved Traffic Control Plan would result in potential traffic impacts related to road closures and detours would be less than significant.

b) No Impact

CEQA Guidelines §15064.3(b) stipulates criteria for analyzing transportation impacts in terms of “vehicle miles traveled” for land use projects and transportation projects. VMT refers to the amount and distance of automobile travel attributable to a project.

Construction of the proposed project would involve temporary trips associated with workers, delivery of construction supplies and equipment, and hauling materials to and from the site. These trips would be temporary over the 4-month duration of construction and would not result in a perceivable increase in vehicle miles traveled that would exceed County thresholds of significance. Truck trips associated with operation and maintenance would be limited and incorporated into CVWD’s existing operation and maintenance program. The VMT generated during operation of the proposed project would be minimal. Therefore, the project would not be inconsistent with CEQA Guidelines §15064.3(b) and there would be no impact.

c) No Impact

Neither Project construction nor operation would substantially increase traffic hazards or create incompatible uses at or adjacent to the project area. The proposed project would be located primarily below existing paved and dirt roads or rights of way, would not permanently alter existing roads, and would not result in the creation of new roads or intersections. The proposed lift station and associated electrical facilities (distribution pole, transformer) would be constructed within a relatively small area (approximately one-half acre) at the intersection of Harrison Street and Echols Road. Therefore, the proposed project would not substantially increase hazards due to a design feature or incompatible land uses. Project-related effects relative to roadway design and compatible use hazards would have no impact. The project would not result in transportation hazards.

d) Less than Significant with Mitigation Incorporated

As explained under Impact a), above, construction of the project would generate trips associated with construction crews and materials deliveries and may necessitate individual traffic lane closures. Lane closures and other construction activities have the potential to result in inadequate access for emergency vehicles. Traffic control requirements would require that emergency crews have access, as needed, and that the contractor coordinates the location of the work daily for routing of emergency vehicles. Traffic control would also require the contractor to make reasonable efforts, wherever possible, to provide landowners access to their property and patrons access to businesses during execution of the work. To ensure that project construction would not interfere with emergency response times, the proposed project would implement **Mitigation Measure TRA-1**. With the incorporation of traffic control measures identified in **Mitigation Measure TRA-1**, impacts would be less than significant.

Mitigation Measures

Mitigation Measure TRA -1: Traffic Control Plan

Prior to construction, CVWD shall require its construction contractor to implement an approved Traffic Control Plan, to the satisfaction of the CVWD construction inspector and the County. The components of the Traffic Control Plan shall include:

- Identification of construction staging site locations and potential road closures,
- Alternate routes of traffic detours, including emergency response contact information,
- Planned routes for construction-related vehicle traffic (haul routes), and
- Identification of alternative safe routes to maintain pedestrian safety during construction.

CVWD's Project Manager shall coordinate with the police, fire, and other emergency services to alert these entities about potential construction delays, project alignment, and construction schedule. CVWD shall minimize the duration of disruptions/closures to roadways and critical access points for emergency services. The Traffic Control Plan shall provide for traffic control measures including flag persons, warning signs, lights, barricades, and cones to provide safe passage of vehicular, bicycle and pedestrian traffic and access by emergency responders. All construction personnel shall be briefed on project-specific circumstances relating to worker and public safety with regards to traffic control. The Traffic Control Plan shall be submitted to CVWD's Project Manager and construction inspector for review and approval prior to construction.

CVWD's construction inspector shall have the construction schedule and Traffic Control Plan reviewed by the County of Riverside to ensure construction of the

proposed project does not conflict with construction activities associated with other construction projects that may be occurring at the same time in the vicinity.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) 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:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

Tribal cultural resources are nonrenewable resources and often yield unique information about past societies and environments, and can provide information for modern day social, scientific, and heritage knowledge. The consideration and preservation of important examples of history within Riverside County benefits the public by maintaining historic identity and a sense of place and tradition.

Public Resource Code 21074(a) identifies “Tribal Cultural Resources” as either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

(Added by Stats. 2014, Ch. 532, Sec. 4. (AB 52) Effective January 1, 2015.)

a-b) Less Than Significant with Mitigation Incorporated

As discussed in *Section 3.5 Cultural Resources*, a project and site-specific study was prepared to analyze historical and archaeological resources (Gusick 2018, revised 2020). This assessment included a records search, outreach with Native American communities, historical background research and an intensive level field survey. The proposed project area has been heavily disturbed over the years from various activities associated with agricultural use and development, utility alignments, roadways, and commercial, educational, recreational and residential use.

The Martinez Historical District (District) is listed as a National Register Historic Preservation District. This Historical District encompasses the Cahuilla village site and is currently part of the Torres-Martinez Desert Cahuilla Indian Reservation. Within the Historical District, there is a known cemetery as well as historic documentation of two Indian Rancherias and prehistoric Cahuilla Indian village sites, that are still present. The entire project ADI within Martinez Road within the TMCC reservation access road was surveyed and a portion of the proposed project ADI runs directly through the Historical District. The NAHC has determined Martinez Road to be ineligible for the NRHP. The road has been resurfaced and the shoulder has been graded, paved, and resurfaced throughout the years for routine maintenance. Planned impacts to the roads that run through the Historical District will be temporary and an Archaeological and Tribal Monitor would be present during ground disturbing activities, as required by **Mitigation Measure CUL-2**.

The results of the NAHC Sacred Land Files indicated that there were sacred sites within the regions that may be impacted by the project and to contact the Torres-Martinez Desert Cahuilla Indians for more information. The NAHC search also included a contact list of 32 Native American individuals or organizations who may have additional information regarding sacred resources in the area and who should be contacted regarding the proposed scope of the project. Utilizing the NAHC provided contact list, outreach letters were mailed to all 32 individuals/groups on the list and follow-up phone calls and/or emails were made to the 29 individuals and groups on the list that did not respond to the initial contact. The results of the outreach to Native American individuals and organizations can be found in the Cultural Resources Report in Appendix C and are summarized below:

- **Torres-Martinez Desert Cahuilla Indians** requested formal consultation with CVWD, as well as Tribal monitoring for all ground disturbing activities (letter received October 27, 2017). The request has been met; and Native American tribal monitoring has been included as **Mitigation Measure CUL-2**.
- **Agua Caliente Band of Cahuilla Indians** stated no concerns and deferred to the Torres-Martinez Desert Cahuilla Indians (letter received September 20, 2017).
- **Twenty Nine Palms Band of Mission Indians** identified the project APE as adjacent to the Chemehuevi Traditional Use Area, and their Tribal Historic Preservation Officer requested a copy of the Cultural Resources Report. The request has been met (letter received September 26, 2017).
- **Viejas Band of Kumeraay Indians** stated the site has no significant ties to the Viejas and recommend Tribes closer to the cultural resource be contacted. However, it would like to be informed of any inadvertent finds (letter received September 7, 2017).
- **Morongo Band of Mission Indians** indicated that the project is on land sensitive for Cahuilla Tribal cultural resources and deferred to nearby Tribal government (letter received November 29, 2018).

The Cultural Resources Report (Gusick 2018, revised 2020) found no additional listed or eligible for listing Tribal Cultural Resources within the project area.

Assembly Bill (AB) 52 Consultation

AB 52 (Gatto, 2014) established a formal consultation process between a lead agency and all California Native American Tribes regarding tribal cultural resource evaluation. AB 52 mandates that a lead agency shall provide formal written notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have previously requested notice. The AB 52 consultation is initiated early in the project review phase by written notification including a brief description of the proposed project and its location, and the lead agency contact information. The Native American tribal government has 30 days to request project-specific consultation pursuant to this section (Public Resources Code §21080.1).

As a part of the consultation pursuant to PRC §21080.3.1, the parties may propose mitigation measures, including, but not limited to, those recommended in §21084.3, capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource. If the California Native American tribe requests consultation regarding alternatives to the project, recommended mitigation measures, or significant effects, the consultation shall include those topics. The consultation may include discussion concerning the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and, if necessary, project alternatives or the appropriate measures for preservation or mitigation that the California Native American tribe may recommended to the lead agency. Further, consultation shall be considered concluded when either of the following occurs: (1) The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or (2) A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

In March 2019, CVWD initiated AB 52 with eight (8) local Native American tribal governments having previously requested to consult under AB 52. As of June 2019, CVWD environmental staff had received several written responses including formal request for AB 52 consultation. CVWD staff has discussed the project in depth with the interested parties. As a result, the project is conditioned with mitigation providing a Native American tribal monitor during initial, earth-disturbing construction activities such as grubbing, clearing, and excavation for the placement of sanitation improvements (refer to mitigation measures CUL-1 through CUL-4).

Implementation of **Mitigation Measures CUL-1** through **CUL-4** would reduce potential impacts to previously-undiscovered tribal cultural resources to less than significant levels.

Mitigation Measures: **Mitigation Measures CUL-1, CUL-2, CUL-3,** and **CUL-4** in *Section 3.5 Cultural Resources* are applicable to tribal cultural resources, and are provided below.

Mitigation Measure CUL-1: Worker Environmental Awareness Program: Archaeologist Sensitive Training

A qualified archaeologist shall be retained to conduct a Worker's Environmental Awareness Program (WEAP) training for archaeological sensitivity for construction personnel prior to the commencement of any ground disturbing activities. Construction personnel shall be briefed on project-specific circumstances and general observation methods for detecting archeological resources, including tribal cultural resources. The briefing shall include appropriate actions to be taken in the event of questionable evidence or discovery.

Mitigation Measure CUL-2: Initial Monitoring of Archaeological Resources

CVWD shall ensure that initial project-related ground-disturbing activities shall be observed by an archaeological and Native American monitor. These activities shall include initial site preparation, clearing/grubbing of vegetation, and excavation for placement of the sanitation system. The archaeological monitor shall be under the direction of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983). If archaeological resources are encountered during ground-disturbing activities, work in the immediate area shall halt and the find shall be evaluated for CRHR and/or NRHP eligibility. Archaeological monitoring may be reduced or halted at the discretion of the qualified archaeologist as warranted by conditions such as encountering bedrock, sediments being excavated are fill materials, or negative findings during initial ground-disturbing activities. If monitoring is reduced, spot-checking shall occur when ground-disturbance moves to a new location or when ground disturbance will extend to depths not previously reached (unless those depths are within bedrock). Both the project archeologist and Native American monitor will be invited to attend the pre-construction meeting.

Mitigation Measure CUL-3: Unanticipated Discovery of Cultural Resources

In the event that cultural resources are unearthed during project construction, the project archeologist, in coordination with CVWD's construction inspector shall temporarily suspend all earth disturbing work within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.

- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify CVWD's Construction Inspector and Environmental Services Department. CVWD shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be eligible for inclusion in the NRHP or CRHR. Work may not resume within the no-work radius until CVWD, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.

Mitigation Measure CUL-4: Unanticipated Discovery of Human Remains

The discovery of human remains is a possibility during ground-disturbing activities. In the event that human remains are found, CVWD shall temporarily suspend all earth disturbing work within a 100-foot radius of the discovery. The project archeologist would evaluate the significance of the find and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find.

If the find includes human remains, or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Riverside County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

If the find includes human remains, or remains that are potentially human, and the find is located on lands owned by Torres-Martinez Desert Cahuilla Indians, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until a representative from the Torres-Martinez Desert Cahuilla Indians is notified. The Torres-Martinez Desert Cahuilla Indians would have full discretion over the treatment of the remains.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion

Water Supply

CVWD provides domestic water service in the project vicinity and is the largest provider of potable water in the Coachella Valley. CVWD's *2010 CVWMP* and *2015 UWMP* have been developed to assist the agency in reliably meeting current and future water demands in a cost-effective manner. CVWD's pressurized pipeline domestic water distribution systems have 30 pressure zones and consist of approximately 96 groundwater production wells, 2,000 miles of pipeline, and 135 million gallons of storage in 61 enclosed reservoirs. In 2015, CVWD provided 92,974 AF of water to 212,871 residents through 107,358 active meters. CVWD's irrigation system consists of 485 miles of buried pipelines, 19 pumping plants, and 1,300 AF of storage and provides approximately 392,000 acre-feet per year (AFY) of Colorado River water and blended recycled water to over 1,100 customers covering approximately 76,354 acres. CVWD's water supplies come from groundwater,

recycled water, imported water from the State Water Project (via the California Aqueduct) and the Colorado River via the Coachella Canal, a branch of the All-American Canal. All potable water is pumped from the groundwater basin. Imported and recycled water supplies are used to meet non-urban water demands and for groundwater replenishment.

Wastewater and Recycled Water

CVWD has provided wastewater collection and treatment services to their customers since 1968, and currently provides wastewater services to more than 94,000 home and business accounts, serving an estimated population of 248,000 (CVWD, 2018). CVWD treats nearly 6.3 billion gallons of wastewater a year and recycles more than 2 billion gallons of wastewater each year. CVWD's wastewater collection system consists of approximately 1,100 miles of 6-inch through 36-inch diameter sewers and includes 35 sewage lift stations and associated force mains. The system contains trunk sewers, generally 10-inches in diameter and larger, that convey the collected wastewater flows to CVWD's treatment facilities. CVWD operates five WRPs, two of which (WRP-7 and WRP-10) generate recycled water for irrigation of golf courses and large landscaped areas. WRP-4 became operational in 1986 and serves communities from La Quinta to Mecca. WRP-4 effluent is not currently recycled; however, it will be recycled in the future after obtaining an approved wastewater discharge change petition, environmental analysis, and tertiary treatment facilities are constructed. The other two WRPs (WRP-1 and WRP-2) serve small communities near the Salton Sea.

Solid Waste

Solid waste disposal and recycling services for the community of Thermal is provided by Burrtec Waste and Recycling Services. Burrtec provides an array of services and offers residents containers for landfill waste, green waste, and recyclables. Residential and commercial waste and recycling is taken to the Coachella Valley Transfer Station. Waste from the Transfer Station is then taken to a permitted landfill or recycling facility outside of the Coachella Valley. These include Badlands Disposal site, El Sobrante Sanitary Landfill, and Lamb Canyon Disposal Site. Cal-Recycle data indicates the Badlands Disposal site has 15,748,99 cubic yards of remaining capacity, the El Sobrante Landfill has a remaining capacity of 145,530,000 tons of solid waste, and Lamb Canyon Disposal has remaining solid waste capacity of 19,242,950 cubic yards. As part of its long-range planning and management activities, the Riverside County Waste Management Department (RCWMD) ensures that Riverside County has a minimum of 15 years of capacity at any given time, for future landfill disposal.

Stormwater and Flood Control

CVWD provides regional flood protection for its stormwater unit within the Coachella Valley. CVWD's stormwater unit extends from the Whitewater River Spreading Area to Salton City, encompassing approximately 378,000 acres. CVWD's regional flood control system consists of a series of debris basins, levees, and stormwater channels that convey

floodwaters from the canyons and alluvial fans surrounding the Coachella Valley to the 50-mile Whitewater River/Coachella Valley Stormwater Channel and to the Salton Sea.

Utilities

IID provides electricity services and Southern California Gas Company provides natural gas services within the project area. See *Section 3.6 Energy* for more detail.

a,c) Less than Significant Impact

The proposed project would not require or result in the construction of new or expanded water treatment, stormwater drainage, or telecommunications facilities beyond the expansion of CVWD's wastewater system included in the proposed project. As described in *Section 2.4.2* and discussed in *Section 3.6 Energy*, the proposed project would construct a new lift station which would rely on electricity supplied by IID. The estimated amount of energy consumed by the pumps at the new lift station would be 24,000 kWh per year. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. The construction of the new lift station and associated electrical facilities would not cause a significant environmental effect, as discussed elsewhere in this document. CVWD will continue to consult with IID staff related to the design, installation or improvements to the new and/or improved project features. The proposed project would not require the construction of new IID electric or natural gas plants because the proposed project energy demand would be much smaller than the total amount of electricity IID supplies in a year (IID controls more than 1,100 megawatts of energy). As discussed in *Section 3.14 Population and Housing*, the proposed project would serve existing communities and would not directly induce population growth that would require new or expanded utilities. Therefore, impacts would be less than significant, and no mitigation would be required.

Project implementation would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. The proposed project diverts wastewater from uncontrolled septic-system discharge to controlled discharge at an existing, permitted treatment facility, WRP-4. The proposed lift station would convey wastewater from Sunbird MHP and TMCC to WRP-4. Estimated annual average flow based on 40-year growth projections at full system buildout is projected to be 2.5 mgd. The wastewater generated by the Sunbird MHP and TMCC is only 1% of the projected 40-year growth, however; the proposed project would install pipelines to accommodate additional 3-5 year population growth which are expected to increase the average flow an additional 85,400 gpd. CVWD would not require additional capacity to serve the proposed project demand. Less than significant impact is anticipated.

b) No impact

As described in *Section 2.4.3 Onsite work*, the proposed project would eliminate the operation of 25 community septic systems, install 19,625 feet of sanitation pipeline, and a new lift station. New electrical facilities would be constructed at the new lift station site,

including a distribution pole and a transformer. Project implementation would have no effect on domestic water usage with the short-term exception of a nominal increase required for construction. Water supplies available to serve the proposed project from existing entitlements and resources would not change, nor is there any necessity for new or expanded entitlements. There would be no impact on water and wastewater services.

d, e) Less than Significant Impact

Construction and implementation of the proposed project is not anticipated to generate a significant amount of solid waste. To the extent feasible, excavated soil would be reused on site. The construction contractor(s) would be required to dispose of excavated soil and solid wastes in accordance with local solid waste disposal requirements. Solid waste disposal and recycling services for the community of Thermal are provided by Burretc.

Solid waste generation would be limited to construction-related activities and would not affect available solid waste disposal capacity in the region. No long-term solid waste generation would be associated with the proposed project. The waste generated during construction activities are required to be disposed of in accordance with all applicable federal, State, and local statutes and regulations. Therefore, impacts would be less than significant, and no mitigation would be required.

Mitigation Measures: None required or recommended.

3.20 Wildfire

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

d) Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

The Cal Fire Resources Assessment Program (FRAP; CalFire 2006) assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. Through the FRAP, Cal Fire produces maps designating very high fire hazard severity zones (VHFHSZ) within Federal, State and Local Responsibility Areas. The project is located within both Local Responsibility Areas (Western Riverside County) and Federal Responsibility Areas. The project area is designated as a non-VHFHSZ.

a) Less than Significant with Mitigation Incorporated

Construction activities would take place within public rights-of-ways, as well as on private and public land. Potential staging areas include vacant private and public land, parking lots, and segments of closed traffic lanes. Therefore, project construction would temporarily block access to some roadways and driveways that are currently used by emergency response vehicles or in emergency evacuations. **Mitigation Measure TRA-1** addresses how CVWD would communicate with emergency response agencies to develop emergency access strategies (see *Section 3.1.17 Transportation*). Long-term, the proposed project would not physically impair or otherwise interfere with emergency response or evacuation in the project vicinity as the majority of the project components would be located below-grade and ground surfaces would be returned to pre-construction conditions. Thus, impacts would be less than significant with mitigation.

b) Less than Significant Impact

The proposed project is located within Local Responsibility Area and Federal Responsibility Area designated as non-VHFHSZ. Therefore, the proposed project would not exacerbate wildfire risks, and thereby expose proposed project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Impacts would be less than significant, and no mitigation would be required.

c) No Impact

The proposed project involves installation of 19,625 feet of sewer pipeline and a new lift station. New electrical facilities would be constructed at the new lift station site, including a distribution pole and a transformer. The proposed project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. O&M activities associated with the proposed project would include lift station and pipeline maintenance and inspection, which would not require activities that would exacerbate fire risk. Therefore, no impacts would occur, and no mitigation would be required.

d) No Impact

The project area is surrounded by vacant land and irrigated agriculture. Residential, commercial, and industrial developments are scarce. Most residential developments are well-established trailer parks. There are no slopes or hills within the project area. The majority of project components would be located below-grade, surfaces would be restored to pre-construction conditions, and implementation of the proposed project would not impact site drainage. Therefore, the proposed project would not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. No impacts would occur, and no mitigation would be required.

Mitigation Measures: Refer to **Mitigation Measure TRA-1** in *Section 3.17 Transportation*.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	*Less Than Significant With Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, 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?

a) Less Than Significant with Mitigation Incorporated

Implementation of the project Mitigation Measures would ensure that construction and operation of the proposed project does not have the potential to significantly 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. Project impacts would be less than significant with the mitigation identified in this IS/MND incorporated.

b) Less Than Significant Impact

CEQA Guidelines §15064(h)(1) requires that a "lead agency consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding the incremental effect is not cumulatively considerable.

As previously described, the proposed project would contribute incrementally to the impacts on the environment; however, no potentially significant impacts were identified that could not be mitigated to a less-than-significant level. Compliance with the mitigation measures included in Sections 3.1 through 3.20 of this IS/MND would ensure that implementation of the proposed project does not have impacts that are individually limited, but cumulatively considerable.

c) Less Than Significant with Mitigation Incorporated

Compliance with the Mitigation Measures included in Sections 3.1 through 3.20 of this IS/MND would ensure that implementation of the proposed project does not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Project impacts would be less than significant with mitigation incorporated.

CONCLUSION

The proposed project involves activities that could result in potentially significant environmental impacts. In order to reduce or avoid potential environmental impacts, the project is conditioned with a mitigation program referred as the MMRP. With implementation of the MMRP, potentially significant impacts would be mitigated to less than significant levels.

This page is intentionally blank.

4. REPORT PREPARATION

4.1 Report Authors

This report was prepared by the Coachella Valley Water District, Woodard & Curran, and MSA Consulting, Inc. Staff from the agency and companies that were involved include:

Coachella Valley Water District

- Elizabeth Meyerhoff, Environmental Specialist
- William Patterson, Environmental Supervisor
- Steve Bigley, Director of Environmental Services
- Armando Rodriguez, Engineering Manager

Woodard & Curran

- Rosalyn Prickett, AICP, Principal
- Haley Johnson, CEQA Analyst
- Nicole Poletto, CEQA Analyst

MSA Consulting, Inc.

- Michelle Witherspoon, Director of Environmental Services
- Jesus Herrera-Cortes, Senior Environmental Planner/GIS Analyst
- Nicole Vann, Planner

4.2 References

Akel Engineering Group, Inc. 2017. "Oasis Villas Hydraulic Modeling. City of Coachella: Coachella Valley Water District."

Albert A. Webb Associates. 2003. "County of Riverside CVWD, CVUSD, and Kohl Joint Project Sewer Main Plan & Profile. California, Riverside County: Coachella Valley Water District." January 9.

Alles, D. L. 2011. "Geology of the Salton Trough." October 28.

California Air Resources Board (CARB). 2005. "Air Quality and Land Use Handbook: A Community Health Perspective." April. Accessed June 14, 2020 at: https://ww3.arb.ca.gov/ch/handbook.pdf.

California Air Resources Board (CARB). 2017. "California's 2017 Climate Change Scoping Plan." Accessed June 14, 2020 at: https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

California Department of Conservation (DOC) California Geological Survey (CGS). 2015. "CGS Information Warehouse Mineral Land Classification Online Mapping Tool." Accessed June 6, 2020 at: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc.

California Department of Conservation (DOC) Division of Land Resource Protection Conservation Program Support. 2016. "Riverside County Williamson Act FY 2015/16 Sheet 2 of 3." Accessed June 6, 2020 at: https://www.conservation.ca.gov/dlrp/wa/Pages/stats_reports.aspx.

California Department of Conservation (DOC). 2019. "Division of Land Resource Protection." Accessed March 21, 2019 at: https://www.conservation.ca.gov/dlrp.

California Department of Conservation (DOC). 2019b. "Earthquake Zones of Required Investigation." Accessed June 12, 2020 at: https://maps.conservation.ca.gov/cgs/EQZApp/app/.

California Department of Forestry and Fire Protection (CalFire). 2020. "California Fire Hazard Severity Zone Viewer." Accessed October 26, 2020 at: https://gis.data.ca.gov/datasets/789d5286736248f69c4515c04f58f414.

California Department of Toxic Substances Control (DTSC). 2019. "EnviroStor." Accessed June 20, 2020 at: https://www.envirostor.dtsc.ca.gov/public/.

California Department of Water Resources (DWR). 2019. "DAC Mapping Tool." Accessed June 12, 2020 at: https://gis.water.ca.gov/app/dacs/.

California Regional Water Quality Control Board-Colorado Basin Region. 2017. "Notice of Opportunity for Public Comment and Public Hearing for National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements. Palm Desert: California Regional Water Quality Control Board."

Coachella Valley Association of Governments (CVAG). 2017a. "Active Transportation Plan." June 7.

Coachella Valley Association of Governments (CVAG). 2017b. "Transportation Project Prioritization Study." June 26.

Coachella Valley Water District (CVWD). 2010. "Coachella Valley Integrated Regional Water Management Plan." December.

Coachella Valley Water District (CVWD). 2012. "Coachella Valley Water Management Plan 2010 Update Environmental Impact Report." January.

Coachella Valley Water District (CVWD). 2016. "2015 Urban Water Management Plan." July 1.

Coachella Valley Water District. 2019. "Developmental Design Manual. City of Coachella: Coachella Valley Water District." Accessed April 2020.

Cornett, James W. Ecological Consultants. 2017. "General and Focused Biological Resources Assessment: Sunbird Mobile Home Park Sewer Pipeline Project." November 22.

County of Riverside. 2002. "Riverside County General Plan Program EIR." August 16.

County of Riverside. 2007. "Ordinance No. 847 (As Amended Through 847.1) An Ordinance of the County of Riverside Amending Ordinance No. 847 Regulating Noise." Adopted April 4, 2006. Amended June 19, 2007.

County of Riverside. 2014. "Riverside County General Plan Update Project Environmental Impact Report No. 521." March.

County of Riverside. 2015. "County of Riverside General Plan." December 8.

County of Riverside. 2016. "Eastern Coachella Valley Area Plan." December 6.

County of Riverside. 2019. "Climate Action Plan." December 17. Accessed June 14, 2020 at: https://planning.rctlma.org/Portals/14/CAP/2019/2019_CAP_Update_Full.pdf.

County of Riverside. 2018. "The Kohl Ranch Specific Plan No. 303 Amendment No. 4." November 6. Accessed May 25, 2020 at: https://planning.rctlma.org/Portals/14/splans/sp_document/SP303/A4/SP303a4.pdf.

County of Riverside. 2019. "Ordinance No. 348: Providing for Land Use Planning and Zoning Regulations and Related Functions of the County of Riverside." December 19. Accessed May 25, 2020 at: https://planning.rctlma.org/Portals/14/Ord_348_clean_version.pdf?ver=2020-03-02-112443-760.

County of Riverside. N.d.a. "Map My County." gis.countyofriverside.us. Accessed May 25, 2020.

Daniels, Brett, M.S., Associate Biologist, Coachella Valley Water District. 2018. "Avenue 66 Trunk Sewer Project Biological Survey Report." November.

Demere, T. A. 2002. "Silent Beaches: Ancient Lake Cahuila and its Geologic Setting." Accessed April 18, 2019 at: http://archive.sdnhm.org/research/paleontology/lakecahuilla.html.

Dibblee, T. W. and Minch, J. A. 2008. "Geologic map of the Palm Desert & Coachella 15 minute quadrangles, Riverside County, California." Accessed April 18, 2019 at: https://ngmdb.usgs.gov/Prodesc/proddesc_83959.htm.

Federal Emergency Management Program (FEMA). 2019. "Flood Zones." March 18. Accessed June 6, 2020 at: https://www.fema.gov/flood-zones.

Federal Highway Administration (FHWA). 2006. "Construction Noise Handbook." Accessed April 2, 2019 at: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/handbook/handbook09.cfm.

Federal Transit Administration (FTA). 2006. "Transit Noise and Vibration Impact Assessment." May.

Dr. Amy Gusick, Ph.D., RPA Natural History Museum of Los Angeles County. 2018, revised 2020. "Cultural Resources Technical Report Sunbird/Martinez Road." December 2018, revised July 2020.

Kamalzare, PhD., M. ASCE, M. 2018. "Report of Geotechnical Engineering Study."

Rincon Consultants, Inc. 2021. "Area of Potential Effects Map for the Coachella Valley Water District's Avenue 66 Trunk Sewer Project in Riverside County, California." July 2.

Riverside County Transportation Commission (RCTC). 2011. "Riverside County Congestion Management Program." December.

South Coast Air Quality Management District (SCAQMD). 2003. Final 2003 Coachella Valley PM_{10} State Implementation Plan. August 1. Accessed June 14, 2020 at: https://www.aqmd.gov/docs/default-source/clean-air-plans/pm10-plans/final-2003-coachella-valley-pm10-state-implementation-plan.pdf?sfvrsn=2.

South Coast Air Quality Management District (SCAQMD). 2008a. "Final Localized Significance Thresholds – Appendix C Mass Rate LST Look-up Table." Accessed June 14, 2020 at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/localized-significance-thresholds#appc.

South Coast Air Quality Management District (SCAQMD). 2008b. "Board Meeting Agenda No. 31: Interim CEQA GHG Significance Threshold for Stationary Sources, Rules and Plans." December 5.

South Coast Air Quality Management District (SCAQMD). 2019. "SCAQMD Air Quality Significance Thresholds." April. Accessed June 14, 2020 at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf.

South Coast Air Quality Management District (SCAQMD). 2016. "National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) Attainment Status for South Coast Air Basin." February. Accessed July 9, 2019 at: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/naaqs-caaqs-feb2016.pdf?sfvrsn=14.

South Coast Air Quality Management District (SCAQMD). 2017. "Final 2016 Air Quality Management Plan." March.

Southern California Association of Governments (SCAG). 2016. "Final 2016/2040 Regional Transportation Plan/Sustainable Communities Strategy." April 7.

State Water Resources Control Board (SWRCB). 2016. TMDL: Coachella Valley Stormwater Channel.

State Water Resources Control Board (SWRCB). 2020. "GeoTracker." Accessed June 6, 2020 at: https://geotracker.waterboards.ca.gov/.

United States Census Bureau (U.S. Census Bureau). 2019. "American Fact Finder – Thermal CDP, California." Accessed April 2, 2019 at: https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk.

US Environmental Protection Agency (USEPA). 2020. "General Conformity De Minimis Tables." May 27. Accessed June 22, 2020 at: https://www.epa.gov/general-conformity/de-minimis-tables.

U.S. Environmental Protection Agency (USEPA). 2018. "Environmental Justice Screening and Mapping Tool Version 2018." Accessed on March 29, 2019. Available: https://ejscreen.epa.gov/mapper/

Watson Engineering. 2012. "Off-Site Sewer Improvement Plan for Mountain View Estates Mobile Home Park (Polk Street). California, Riverside County: Coachella Valley Water District." July 12

Woodard & Curran. 2020. "Sunbird/Martinez Septic to Sewer Conversion Project Project Report." May 2020.

This page is intentionally blank.

APPENDIX A: CALEEMOD DATA SHEETS

Avenue 66-Sunbird-TMCC Sewer Consolidation

Riverside-Salton Sea County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	21.78	1000sqft	0.50	21,780.00	0
Other Asphalt Surfaces	79.00	1000sqft	1.81	79,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - see project description

Off-road Equipment -

Off-road Equipment -

Grading - see project description

Trips and VMT - see project description

Vehicle Trips - see project description

Landscape Equipment - see project description

Area Coating - see project description

Energy Use - see project description

Water And Wastewater - see project description

Solid Waste - see project description

Construction Off-road Equipment Mitigation - SCAQMD dust control measures

Consumer Products - see project description

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10890	0
tblAreaCoating	Area_Nonresidential_Interior	32670	0
tblAreaCoating	Area_Parking	4740	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	131.00
tblConstructionPhase	NumDays	6.00	131.00
tblConstructionPhase	NumDays	10.00	131.00
tblConstructionPhase	PhaseEndDate	6/14/2023	12/30/2022

tblConstructionPhase	PhaseEndDate	8/10/2022	12/30/2022
tblConstructionPhase	PhaseEndDate	6/28/2023	12/30/2022
tblConstructionPhase	PhaseStartDate	8/11/2022	7/1/2022
tblConstructionPhase	PhaseStartDate	8/3/2022	7/1/2022
tblConstructionPhase	PhaseStartDate	6/15/2023	7/1/2022
tblEnergyUse	LightingElect	2.37	0.00
tblEnergyUse	NT24E	36.52	1.50
tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	T24E	1.06	0.00
tblEnergyUse	T24NG	3.25	0.00
tblGrading	AcresOfGrading	65.50	3.00
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	20.47	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	5,036,625.00	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					
2022	0.3104	2.8189	2.4764	4.9000e-003	0.4509	0.1280	0.5788	0.2317	0.1197	0.3514	0.0000	423.8634	423.8634	0.1000	0.0000	426.3638
Maximum	**0.3104**	**2.8189**	**2.4764**	**4.9000e-003**	**0.4509**	**0.1280**	**0.5788**	**0.2317**	**0.1197**	**0.3514**	**0.0000**	**423.8634**	**423.8634**	**0.1000**	**0.0000**	**426.3638**

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					
2022	0.3104	2.8189	2.4764	4.9000e-003	0.2307	0.1280	0.3587	0.1118	0.1197	0.2314	0.0000	423.8630	423.8630	0.1000	0.0000	426.3634
Maximum	**0.3104**	**2.8189**	**2.4764**	**4.9000e-003**	**0.2307**	**0.1280**	**0.3587**	**0.1118**	**0.1197**	**0.2314**	**0.0000**	**423.8630**	**423.8630**	**0.1000**	**0.0000**	**426.3634**

	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**	**48.83**	**0.00**	**38.03**	**51.75**	**0.00**	**34.13**	**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	**7-1-2022**	**9-30-2022**	1.5700	1.5700
		Highest	1.5700	1.5700

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	0.0903	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	18.8333	18.8333	4.3000e-004	9.0000e-005	18.8705
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0903**	**1.0000e-005**	**9.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**18.8351**	**18.8351**	**4.3000e-004**	**9.0000e-005**	**18.8725**

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	0.0903	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	18.8333	18.8333	4.3000e-004	9.0000e-005	18.8705
Mobile	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
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0903**	**1.0000e-005**	**9.3000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**18.8351**	**18.8351**	**4.3000e-004**	**9.0000e-005**	**18.8725**

	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**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2022	12/30/2022	5	131	
2	Building Construction	Building Construction	7/1/2022	12/30/2022	5	131	
3	Paving	Paving	7/1/2022	12/30/2022	5	131	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.81

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

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	4	10.00	0.00	12.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	42.00	17.00	1.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	1.00	12.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2022

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					0.3960	0.0000	0.3960	0.2170	0.0000	0.2170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1009	1.1124	0.6039	1.3500e-003		0.0486	0.0486		0.0447	0.0447	0.0000	118.5728	118.5728	0.0384	0.0000	119.5315
Total	**0.1009**	**1.1124**	**0.6039**	**1.3500e-003**	**0.3960**	**0.0486**	**0.4447**	**0.2170**	**0.0447**	**0.2617**	**0.0000**	**118.5728**	**118.5728**	**0.0384**	**0.0000**	**119.5315**

3.2 Grading - 2022

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	3.0000e-005	1.2100e-003	1.8000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4256	0.4256	3.0000e-005	0.0000	0.4262
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	2.6200e-003	1.6900e-003	0.0189	6.0000e-005	7.1500e-003	4.0000e-005	7.1900e-003	1.9000e-003	4.0000e-005	1.9400e-003	0.0000	5.5722	5.5722	1.2000e-004	0.0000	5.5752
Total	**2.6500e-003**	**2.9000e-003**	**0.0191**	**6.0000e-005**	**7.2500e-003**	**4.0000e-005**	**7.3000e-003**	**1.9300e-003**	**4.0000e-005**	**1.9700e-003**	**0.0000**	**5.9977**	**5.9977**	**1.5000e-004**	**0.0000**	**6.0014**

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					0.1782	0.0000	0.1782	0.0977	0.0000	0.0977	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1009	1.1124	0.6039	1.3500e-003		0.0486	0.0486		0.0447	0.0447	0.0000	118.5726	118.5726	0.0384	0.0000	119.5313
Total	**0.1009**	**1.1124**	**0.6039**	**1.3500e-003**	**0.1782**	**0.0486**	**0.2268**	**0.0977**	**0.0447**	**0.1424**	**0.0000**	**118.5726**	**118.5726**	**0.0384**	**0.0000**	**119.5313**

3.2 Grading - 2022

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	3.0000e-005	1.2100e-003	1.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4256	0.4256	3.0000e-005	0.0000	0.4262
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	2.6200e-003	1.6900e-003	0.0189	6.0000e-005	6.8400e-003	4.0000e-005	6.8800e-003	1.8200e-003	4.0000e-005	1.8600e-003	0.0000	5.5722	5.5722	1.2000e-004	0.0000	5.5752
Total	**2.6500e-003**	**2.9000e-003**	**0.0191**	**6.0000e-005**	**6.9400e-003**	**4.0000e-005**	**6.9800e-003**	**1.8500e-003**	**4.0000e-005**	**1.8900e-003**	**0.0000**	**5.9977**	**5.9977**	**1.5000e-004**	**0.0000**	**6.0014**

3.3 Building Construction - 2022

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	0.1254	0.9807	0.9603	1.6900e-003		0.0469	0.0469		0.0450	0.0450	0.0000	139.0322	139.0322	0.0266	0.0000	139.6961
Total	**0.1254**	**0.9807**	**0.9603**	**1.6900e-003**		**0.0469**	**0.0469**		**0.0450**	**0.0450**	**0.0000**	**139.0322**	**139.0322**	**0.0266**	**0.0000**	**139.6961**

3.3 Building Construction - 2022

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	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0355	0.0355	0.0000	0.0000	0.0355
Vendor	2.3800e-003	0.0951	0.0180	2.6000e-004	6.3200e-003	1.5000e-004	6.4700e-003	1.8200e-003	1.5000e-004	1.9700e-003	0.0000	24.9783	24.9783	1.9400e-003	0.0000	25.0267
Worker	0.0110	7.1100e-003	0.0793	2.6000e-004	0.0300	1.8000e-004	0.0302	7.9700e-003	1.6000e-004	8.1400e-003	0.0000	23.4031	23.4031	5.1000e-004	0.0000	23.4158
Total	**0.0134**	**0.1023**	**0.0973**	**5.2000e-004**	**0.0364**	**3.3000e-004**	**0.0367**	**9.7900e-003**	**3.1000e-004**	**0.0101**	**0.0000**	**48.4169**	**48.4169**	**2.4500e-003**	**0.0000**	**48.4781**

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	0.1254	0.9807	0.9603	1.6900e-003		0.0469	0.0469		0.0450	0.0450	0.0000	139.0320	139.0320	0.0266	0.0000	139.6959
Total	**0.1254**	**0.9807**	**0.9603**	**1.6900e-003**		**0.0469**	**0.0469**		**0.0450**	**0.0450**	**0.0000**	**139.0320**	**139.0320**	**0.0266**	**0.0000**	**139.6959**

3.3 Building Construction - 2022

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	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0355	0.0355	0.0000	0.0000	0.0355
Vendor	2.3800e-003	0.0951	0.0180	2.6000e-004	6.1000e-003	1.5000e-004	6.2500e-003	1.7700e-003	1.5000e-004	1.9100e-003	0.0000	24.9783	24.9783	1.9400e-003	0.0000	25.0267
Worker	0.0110	7.1100e-003	0.0793	2.6000e-004	0.0287	1.8000e-004	0.0289	7.6500e-003	1.6000e-004	7.8200e-003	0.0000	23.4031	23.4031	5.1000e-004	0.0000	23.4158
Total	**0.0134**	**0.1023**	**0.0973**	**5.2000e-004**	**0.0348**	**3.3000e-004**	**0.0352**	**9.4200e-003**	**3.1000e-004**	**9.7300e-003**	**0.0000**	**48.4169**	**48.4169**	**2.4500e-003**	**0.0000**	**48.4781**

3.4 Paving - 2022

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	0.0617	0.6113	0.7662	1.1700e-003		0.0320	0.0320		0.0295	0.0295	0.0000	101.5908	101.5908	0.0322	0.0000	102.3957
Paving	2.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0640**	**0.6113**	**0.7662**	**1.1700e-003**		**0.0320**	**0.0320**		**0.0295**	**0.0295**	**0.0000**	**101.5908**	**101.5908**	**0.0322**	**0.0000**	**102.3957**

3.4 Paving - 2022

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	3.0000e-005	1.2100e-003	1.8000e-004	0.0000	1.0000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4256	0.4256	3.0000e-005	0.0000	0.4262
Vendor	1.4000e-004	5.5900e-003	1.0600e-003	2.0000e-005	3.7000e-004	1.0000e-005	3.8000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	1.4693	1.4693	1.1000e-004	0.0000	1.4722
Worker	3.9300e-003	2.5400e-003	0.0283	9.0000e-005	0.0107	6.0000e-005	0.0108	2.8500e-003	6.0000e-005	2.9100e-003	0.0000	8.3583	8.3583	1.8000e-004	0.0000	8.3628
Total	**4.1000e-003**	**9.3400e-003**	**0.0296**	**1.1000e-004**	**0.0112**	**7.0000e-005**	**0.0113**	**2.9900e-003**	**7.0000e-005**	**3.0600e-003**	**0.0000**	**10.2531**	**10.2531**	**3.2000e-004**	**0.0000**	**10.2611**

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	0.0617	0.6113	0.7662	1.1700e-003		0.0320	0.0320		0.0295	0.0295	0.0000	101.5906	101.5906	0.0322	0.0000	102.3956
Paving	2.3700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0640**	**0.6113**	**0.7662**	**1.1700e-003**		**0.0320**	**0.0320**		**0.0295**	**0.0295**	**0.0000**	**101.5906**	**101.5906**	**0.0322**	**0.0000**	**102.3956**

3.4 Paving - 2022

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	3.0000e-005	1.2100e-003	1.8000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.4256	0.4256	3.0000e-005	0.0000	0.4262
Vendor	1.4000e-004	5.5900e-003	1.0600e-003	2.0000e-005	3.6000e-004	1.0000e-005	3.7000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.4693	1.4693	1.1000e-004	0.0000	1.4722
Worker	3.9300e-003	2.5400e-003	0.0283	9.0000e-005	0.0103	6.0000e-005	0.0103	2.7300e-003	6.0000e-005	2.7900e-003	0.0000	8.3583	8.3583	1.8000e-004	0.0000	8.3628
Total	**4.1000e-003**	**9.3400e-003**	**0.0296**	**1.1000e-004**	**0.0107**	**7.0000e-005**	**0.0108**	**2.8600e-003**	**7.0000e-005**	**2.9300e-003**	**0.0000**	**10.2531**	**10.2531**	**3.2000e-004**	**0.0000**	**10.2611**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.0000	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Asphalt Surfaces	13.80	6.20	6.20	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	13.80	6.20	6.20	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Refrigerated Warehouse-No Rail	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	18.8333	18.8333	4.3000e-004	9.0000e-005	18.8705
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	18.8333	18.8333	4.3000e-004	9.0000e-005	18.8705
NaturalGas Mitigated	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
NaturalGas Unmitigated	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

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					
Other 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
Refrigerated Warehouse-No Rail	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		**0.0000**	**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**

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					
Other 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
Refrigerated Warehouse-No Rail	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		**0.0000**	**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	32670	18.8333	4.3000e-004	9.0000e-005	18.8705
Total		**18.8333**	**4.3000e-004**	**9.0000e-005**	**18.8705**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	32670	18.8333	4.3000e-004	9.0000e-005	18.8705
Total		**18.8333**	**4.3000e-004**	**9.0000e-005**	**18.8705**

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	0.0903	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003
Unmitigated	0.0903	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0902					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003
Total	**0.0903**	**1.0000e-005**	**9.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-003**	**1.8000e-003**	**0.0000**	**0.0000**	**1.9200e-003**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0902					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	9.0000e-005	1.0000e-005	9.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.8000e-003	1.8000e-003	0.0000	0.0000	1.9200e-003
Total	**0.0903**	**1.0000e-005**	**9.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.8000e-003**	**1.8000e-003**	**0.0000**	**0.0000**	**1.9200e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Refrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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

Avenue 66-Sunbird-TMCC Sewer Consolidation

Riverside-Salton Sea County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Refrigerated Warehouse-No Rail	21.78	1000sqft	0.50	21,780.00	0
Other Asphalt Surfaces	79.00	1000sqft	1.81	79,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - see project description

Off-road Equipment -

Off-road Equipment -

Grading - see project description

Trips and VMT - see project description

Vehicle Trips - see project description

Landscape Equipment - see project description

Area Coating - see project description

Energy Use - see project description

Water And Wastewater - see project description

Solid Waste - see project description

Construction Off-road Equipment Mitigation - SCAQMD dust control measures

Consumer Products - see project description

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10890	0
tblAreaCoating	Area_Nonresidential_Interior	32670	0
tblAreaCoating	Area_Parking	4740	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	131.00
tblConstructionPhase	NumDays	6.00	131.00
tblConstructionPhase	NumDays	10.00	131.00
tblConstructionPhase	PhaseEndDate	6/14/2023	12/30/2022

tblConstructionPhase	PhaseEndDate	8/10/2022	12/30/2022
tblConstructionPhase	PhaseEndDate	6/28/2023	12/30/2022
tblConstructionPhase	PhaseStartDate	8/11/2022	7/1/2022
tblConstructionPhase	PhaseStartDate	8/3/2022	7/1/2022
tblConstructionPhase	PhaseStartDate	6/15/2023	7/1/2022
tblEnergyUse	LightingElect	2.37	0.00
tblEnergyUse	NT24E	36.52	1.50
tblEnergyUse	NT24NG	48.51	0.00
tblEnergyUse	T24E	1.06	0.00
tblEnergyUse	T24NG	3.25	0.00
tblGrading	AcresOfGrading	65.50	3.00
tblOffRoadEquipment	OffRoadEquipmentType		Cement and Mortar Mixers
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	20.47	0.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	5,036,625.00	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					
2022	4.7661	43.0173	38.1217	0.0755	6.8971	1.9534	8.8506	3.5409	1.8266	5.3675	0.0000	7,195.6273	7,195.6273	1.6830	0.0000	7,237.7025
Maximum	**4.7661**	**43.0173**	**38.1217**	**0.0755**	**6.8971**	**1.9534**	**8.8506**	**3.5409**	**1.8266**	**5.3675**	**0.0000**	**7,195.6273**	**7,195.6273**	**1.6830**	**0.0000**	**7,237.7025**

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					
2022	4.7661	43.0173	38.1217	0.0755	3.5355	1.9534	5.4889	1.7099	1.8266	3.5365	0.0000	7,195.6273	7,195.6273	1.6830	0.0000	7,237.7025
Maximum	**4.7661**	**43.0173**	**38.1217**	**0.0755**	**3.5355**	**1.9534**	**5.4889**	**1.7099**	**1.8266**	**3.5365**	**0.0000**	**7,195.6273**	**7,195.6273**	**1.6830**	**0.0000**	**7,237.7025**

	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**	**48.74**	**0.00**	**37.98**	**51.71**	**0.00**	**34.11**	**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	0.4950	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235
Energy	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
Mobile	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	**0.4950**	**9.0000e-005**	**0.0103**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0221**	**0.0221**	**6.0000e-005**	**0.0000**	**0.0235**

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	0.4950	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235
Energy	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
Mobile	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	**0.4950**	**9.0000e-005**	**0.0103**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0221**	**0.0221**	**6.0000e-005**	**0.0000**	**0.0235**

	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**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	7/1/2022	12/30/2022	5	131	
2	Building Construction	Building Construction	7/1/2022	12/30/2022	5	131	
3	Paving	Paving	7/1/2022	12/30/2022	5	131	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 3

Acres of Paving: 1.81

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Paving	Pavers	1	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Building Construction	Welders	3	8.00	46	0.45

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	4	10.00	0.00	12.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	42.00	17.00	1.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	1.00	12.00	14.60	6.20	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Grading - 2022

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					6.0464	0.0000	6.0464	3.3129	0.0000	3.3129			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**6.0464**	**0.7423**	**6.7887**	**3.3129**	**0.6829**	**3.9958**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

3.2 Grading - 2022

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	4.2000e-004	0.0181	2.5400e-003	7.0000e-005	1.6000e-003	5.0000e-005	1.6500e-003	4.4000e-004	5.0000e-005	4.9000e-004		7.2387	7.2387	4.1000e-004		7.2490
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	0.0441	0.0242	0.3389	1.0200e-003	0.1110	6.4000e-004	0.1117	0.0294	5.9000e-004	0.0300		101.9012	101.9012	2.2700e-003		101.9579
Total	**0.0446**	**0.0423**	**0.3415**	**1.0900e-003**	**0.1126**	**6.9000e-004**	**0.1133**	**0.0299**	**6.4000e-004**	**0.0305**		**109.1400**	**109.1400**	**2.6800e-003**		**109.2068**

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					2.7209	0.0000	2.7209	1.4908	0.0000	1.4908			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**2.7209**	**0.7423**	**3.4632**	**1.4908**	**0.6829**	**2.1737**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

3.2 Grading - 2022

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	4.2000e-004	0.0181	2.5400e-003	7.0000e-005	1.5400e-003	5.0000e-005	1.5900e-003	4.2000e-004	5.0000e-005	4.7000e-004		7.2387	7.2387	4.1000e-004		7.2490
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	0.0441	0.0242	0.3389	1.0200e-003	0.1062	6.4000e-004	0.1068	0.0283	5.9000e-004	0.0288		101.9012	101.9012	2.2700e-003		101.9579
Total	**0.0446**	**0.0423**	**0.3415**	**1.0900e-003**	**0.1077**	**6.9000e-004**	**0.1084**	**0.0287**	**6.4000e-004**	**0.0293**		**109.1400**	**109.1400**	**2.6800e-003**		**109.2068**

3.3 Building Construction - 2022

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	1.9143	14.9722	14.6617	0.0257		0.7165	0.7165		0.6874	0.6874		2,339.7976	2,339.7976	0.4469		2,350.9704
Total	**1.9143**	**14.9722**	**14.6617**	**0.0257**		**0.7165**	**0.7165**		**0.6874**	**0.6874**		**2,339.7976**	**2,339.7976**	**0.4469**		**2,350.9704**

3.3 Building Construction - 2022

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	3.0000e-005	1.5100e-003	2.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005		0.6032	0.6032	3.0000e-005		0.6041
Vendor	0.0356	1.4447	0.2520	4.0500e-003	0.0979	2.2800e-003	0.1001	0.0282	2.1800e-003	0.0304		427.6814	427.6814	0.0310		428.4564
Worker	0.1854	0.1015	1.4235	4.2900e-003	0.4663	2.6800e-003	0.4690	0.1237	2.4600e-003	0.1261		427.9852	427.9852	9.5200e-003		428.2231
Total	**0.2209**	**1.5477**	**1.6757**	**8.3500e-003**	**0.5643**	**4.9600e-003**	**0.5692**	**0.1519**	**4.6400e-003**	**0.1565**		**856.2698**	**856.2698**	**0.0406**		**857.2836**

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	1.9143	14.9722	14.6617	0.0257		0.7165	0.7165		0.6874	0.6874	0.0000	2,339.7976	2,339.7976	0.4469		2,350.9704
Total	**1.9143**	**14.9722**	**14.6617**	**0.0257**		**0.7165**	**0.7165**		**0.6874**	**0.6874**	**0.0000**	**2,339.7976**	**2,339.7976**	**0.4469**		**2,350.9704**

3.3 Building Construction - 2022

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	3.0000e-005	1.5100e-003	2.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.3000e-004	4.0000e-005	0.0000	4.0000e-005		0.6032	0.6032	3.0000e-005		0.6041
Vendor	0.0356	1.4447	0.2520	4.0500e-003	0.0944	2.2800e-003	0.0967	0.0273	2.1800e-003	0.0295		427.6814	427.6814	0.0310		428.4564
Worker	0.1854	0.1015	1.4235	4.2900e-003	0.4460	2.6800e-003	0.4487	0.1187	2.4600e-003	0.1212		427.9852	427.9852	9.5200e-003		428.2231
Total	**0.2209**	**1.5477**	**1.6757**	**8.3500e-003**	**0.5405**	**4.9600e-003**	**0.5455**	**0.1460**	**4.6400e-003**	**0.1507**		**856.2698**	**856.2698**	**0.0406**		**857.2836**

3.4 Paving - 2022

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	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500		1,709.6892	1,709.6892	0.5419		1,723.2356
Paving	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9774**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**		**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

3.4 Paving - 2022

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	4.2000e-004	0.0181	2.5400e-003	7.0000e-005	1.6000e-003	5.0000e-005	1.6500e-003	4.4000e-004	5.0000e-005	4.9000e-004		7.2387	7.2387	4.1000e-004		7.2490
Vendor	2.0900e-003	0.0850	0.0148	2.4000e-004	5.7600e-003	1.3000e-004	5.8900e-003	1.6600e-003	1.3000e-004	1.7900e-003		25.1577	25.1577	1.8200e-003		25.2033
Worker	0.0662	0.0362	0.5084	1.5300e-003	0.1665	9.6000e-004	0.1675	0.0442	8.8000e-004	0.0450		152.8519	152.8519	3.4000e-003		152.9368
Total	**0.0687**	**0.1394**	**0.5257**	**1.8400e-003**	**0.1739**	**1.1400e-003**	**0.1750**	**0.0463**	**1.0600e-003**	**0.0473**		**185.2483**	**185.2483**	**5.6300e-003**		**185.3891**

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	0.9412	9.3322	11.6970	0.0179		0.4879	0.4879		0.4500	0.4500	0.0000	1,709.6892	1,709.6892	0.5419		1,723.2356
Paving	0.0362					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9774**	**9.3322**	**11.6970**	**0.0179**		**0.4879**	**0.4879**		**0.4500**	**0.4500**	**0.0000**	**1,709.6892**	**1,709.6892**	**0.5419**		**1,723.2356**

3.4 Paving - 2022

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	4.2000e-004	0.0181	2.5400e-003	7.0000e-005	1.5400e-003	5.0000e-005	1.5900e-003	4.2000e-004	5.0000e-005	4.7000e-004		7.2387	7.2387	4.1000e-004		7.2490
Vendor	2.0900e-003	0.0850	0.0148	2.4000e-004	5.5500e-003	1.3000e-004	5.6900e-003	1.6100e-003	1.3000e-004	1.7400e-003		25.1577	25.1577	1.8200e-003		25.2033
Worker	0.0662	0.0362	0.5084	1.5300e-003	0.1593	9.6000e-004	0.1602	0.0424	8.8000e-004	0.0433		152.8519	152.8519	3.4000e-003		152.9368
Total	**0.0687**	**0.1394**	**0.5257**	**1.8400e-003**	**0.1664**	**1.1400e-003**	**0.1675**	**0.0444**	**1.0600e-003**	**0.0455**		**185.2483**	**185.2483**	**5.6300e-003**		**185.3891**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	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
Unmitigated	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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Refrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
Other Asphalt Surfaces	13.80	6.20	6.20	0.00	0.00	0.00	0	0	0
Refrigerated Warehouse-No	13.80	6.20	6.20	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898
Refrigerated Warehouse-No Rail	0.548600	0.036250	0.186898	0.112544	0.014284	0.004806	0.017604	0.070134	0.001409	0.001147	0.004508	0.000918	0.000898

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	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

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					
Other 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
Refrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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					
Other 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
Refrigerated Warehouse-No Rail	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		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.4950	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235
Unmitigated	0.4950	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4941					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.5000e-004	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235
Total	**0.4950**	**9.0000e-005**	**0.0103**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0221**	**0.0221**	**6.0000e-005**		**0.0235**

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	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4941					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.5000e-004	9.0000e-005	0.0103	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0221	0.0221	6.0000e-005		0.0235
Total	**0.4950**	**9.0000e-005**	**0.0103**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0221**	**0.0221**	**6.0000e-005**		**0.0235**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

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

APPENDIX B: BIOLOGICAL RESOURCES ASSESSMENT

General and Focused Biological Resources Assessment

Sunbird Mobile Home Park SEWER PIPELINE PROJECT

near the community of

Thermal

Riverside County, California

Prepared For:

The California State University
Water Resources and Policy Initiatives
5500 University Parkway, PL-401
San Bernardino, California 92407-2393

Field Study and Report Completed By:

James W. Cornett
Ecological Consultants
P.O. Box 846
Palm Springs, California 92263

November 22, 2017

CONTENTS

EXECUTIVE SUMMARY

An intensive plant and animal survey was conducted on an approximately 3.5-mile-long proposed sewer line corridor located near the community of Thermal, Riverside County, California.

The entire length of the corridor has previously been disturbed by paved and unpaved roadways, a mobile home park, a public school, date groves, existing or fallow agricultural fields, invasion of exotic plant species, occasional flooding or existing utility corridors.

No special-status plant or animal species were detected or are expected within or adjacent to the proposed corridor.

No evidence of burrowing owl presence was found. Most of the habitat within the project boundaries is considered unsuitable for burrowing owls due to active human use and disturbances. The proposed corridor was not found to be a significant resource for other migratory bird species.

The proposed corridor does not include Desert Dry Wash Woodland habitat or impact a blue-line stream corridor. No state or federal permits are required for impacts to riparian or wash habitat.

The federally endangered Casey's June beetle does not occur on or near the project site.

No evidence of desert tortoise presence was found. No additional desert tortoise surveys are recommended or required.

The project site **does not** lie within a conservation area of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). The project site does not share a boundary with a Plan Conservation Area. The project site lies within the fee area of the Plan. However, due to the nature of the project (a sewer line), the project proponent involved (CVWD), existing disturbances and absence of any impact to a Conservation Area, the project is exempt from all fees under the Plan.

Upon completion of the recommended mitigation, no significant adverse impacts upon biological resources in or near the corridor are expected because of the installation of a sewer line.

I. INTRODUCTION

On October 19, 2017, the firm of James W. Cornett - Ecological Consultants was retained by the California State University Water Resources and Policy Initiatives to conduct a biological survey and impact analysis on an approximately 3.5-mile-long utility corridor (the project site) located near the community of Thermal, Riverside County, California.

The project site is located in the southern halves of Sections 7, 8 and 9, Township 7 South, Range 8 East; San Bernardino Baseline and Meridian. The regional location is shown in Figure 1, the area location in Figure 2 and the specific location in Figure 3. Site images are shown in Figures 4-7.

This study was included as part of an environmental assessment mandated by the California Environmental Quality Act (CEQA) and required by the Coachella Valley Water District, the lead planning entity for the project. The biological survey and impact analysis were designed to ascertain the impacts of trenching, grading and sewer line installation on the plant and animal resources of the project site and immediate vicinity.

The specific purposes of the biological surveys and impact analyses are listed below.

1. Determine the vascular plant and vertebrate animal species that occur on, and immediately adjacent to, the project site.

2. Ascertain the presence of any plant or animal species given special status by federal or state governments or is **not** a covered species or habitat under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). Species or habitats not covered under the CVMSHCP include burrowing owl and most other migratory bird species, Casey's June beetle, loggerhead shrike, kit fox and the Desert Dry Wash Woodland community.

3. Ascertain the existence of other significant biotic elements, corridors or communities.

4. Consider the site location as it relates to Conservation Areas as designated in the CVMSHCP.

5. If necessary and where feasible, recommend measures to mitigate significant adverse impacts of the project on any non-covered or special-status species, unique biotic elements or communities.

Figure 1. Regional Location

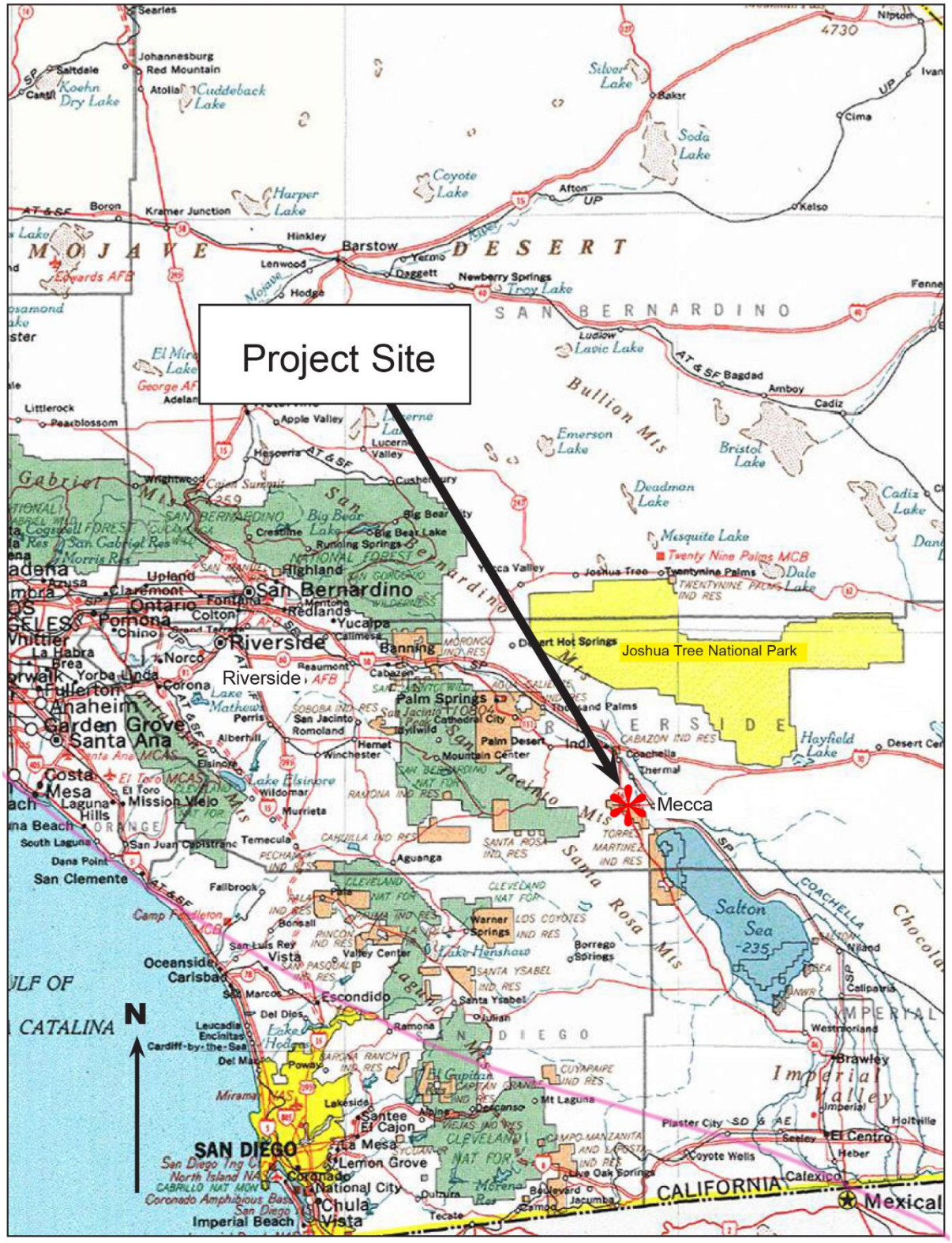


Figure 2. Area Location

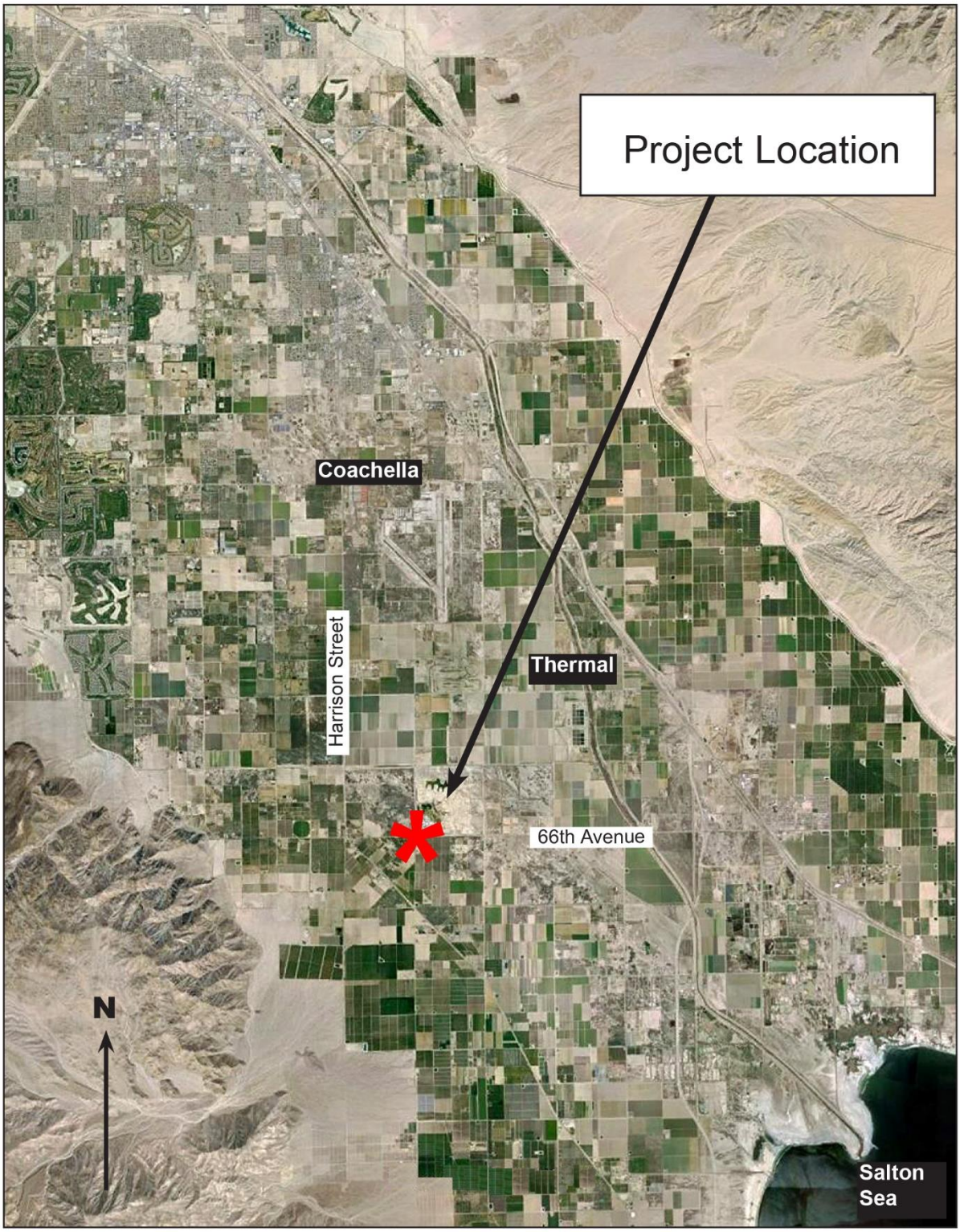
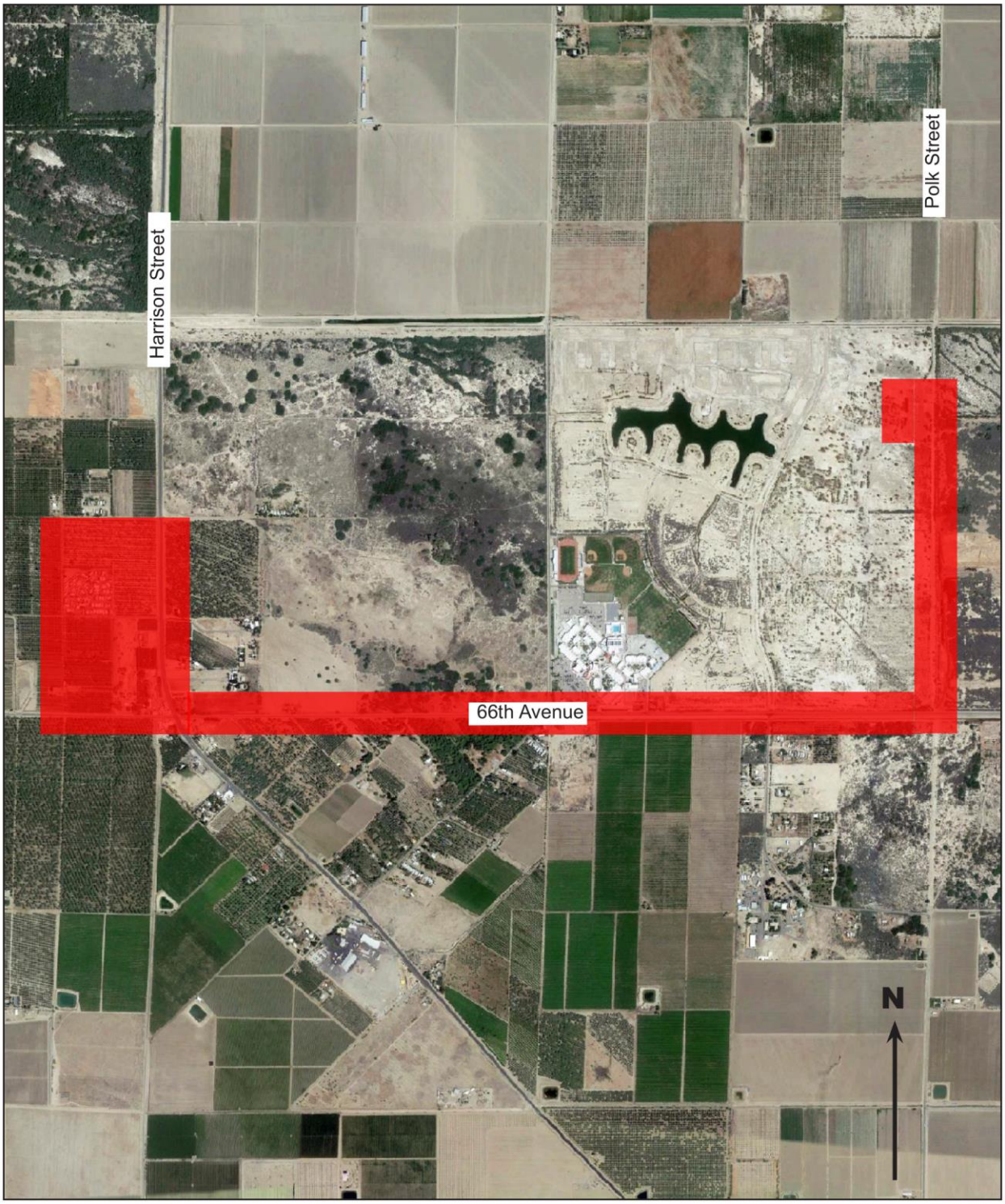


Figure 3. Project Site (in red)



Figures 4-7. Project Site Images

Figure 4. View east from Echols Road at Sunbird Community.

Figure 5. View west on 66th Avenue at Tyler Street.

Figure 6. View west on 66th Avenue at Polk Street.

Figure 7. View south on Polk Street from existing lift station.

II. SITE AND PROJECT DESCRIPTIONS

Climate

The project area lies within the confines of a geographical region known as the Colorado Desert, a subdivision of the Sonoran Desert as defined by Jaeger (1957). As is typical of this subdivision, annual rainfall averages 3.3 inches ((National Climatic Center, 2017). Most precipitation falls during winter and spring with occasional summer thundershowers that account for approximately one-fourth the annual total. Winter daily maximum temperatures are mild, averaging 71 degrees Fahrenheit. Winter nights occasionally drop to near freezing. The month of July brings the hottest temperatures with daytime highs averaging 109 degrees F.

Physical Features

The project site lies from approximately 105 feet to 165 below sea level. There is no relief. Soils are alkaline and consist of fine sand and silt. There are no naturally occurring springs, permanent aquatic habitats or drainages on the project site. In addition, no blue-line streams, as depicted on United States Geological Survey topographical maps, exist within project boundaries.

Surrounding Lands

Scattered residential units, agricultural fields, date groves and cleared vacant lots surround the project area. A few, scattered areas (all less than 1 acre) of native plant associations are present.

Existing Impacts

Nearly the entire corridor project area has been completely impacted by human activities. It appears the entire study area has been graded in historical times for home sites, storage yards, agricultural fields, a school, utility alignments and roadways. Unrestrained dogs were observed on fourteen occasions. Unrestrained cats were observed on six occasions.

Project Description

The project proponent proposes to excavate and install a new sewer line along the corridor area as shown in Figure 3. The purpose of the sewer pipeline is to provide sewer facilities to Sunbird Mobile Home Park. The project involves the installation of gravity sewer pipeline extension, and capacity upgrades to a lift station for the 90 residential units at the mobile home park. The 8-inch diameter gravity sewer pipeline begins at Sunbird Mobile Home Park and extends east along

Echols Road to Harrison Street. From there it continues south along Harrison Street from Echols Road to Avenue 66. The sewer pipeline heads east along Avenue 66, from Harrison Street to Polk Street. At the intersection of Polk Street and Avenue 66, the sewer pipeline connects with the existing Polk Street Trunk Sewer Pipeline which conveys sewer flow to Lift Station 55-11 and eventually to Water Reclamation Plant 4 via an existing 18-inch force main. Capacity upgrades would occur at Sewer Lift Station 55-21. Approximately 13,000 linear ft. of 8-in. and 10-in. diameter, gravity pipelines will be installed for the off-site sewer system to provide sewer service to Sunbird Mobile Home Park and adjacent existing and future developments.

III. SURVEY METHODS

Prior to initiation of field work, a review of the literature was undertaken to determine biological resources existing within the general area and to determine possible occurrence of sensitive species (see References section). Records, collections and/or staff of the University of California at Riverside Herbarium, the Coachella Valley Association of Governments and the Boyd Deep Canyon Desert Research Center were consulted for more specific information as to occurrence. A California Natural Diversity Database check was conducted and yielded no known occurrences of special-status species within or adjacent to the project area.

Daylight field surveys were conducted on October 20, 21, 22, 28, 29, 30 and November 3, 4, 5, 6, 11, 12 and 13, 2017. Plant and animal surveys were conducted by walking parallel transects through the centers and edges of the corridor (and proposed alternate corridors) and 100 yards beyond corridor boundaries for a total corridor width of 300 yards. This width satisfied the requirements of the State burrowing owl survey recommendations, the most intensive survey effort recommended for any sensitive species that might possibly occur within the project area. In a few instances dense vegetation prohibited strict allegiance to parallel transect lines. Transects were not walked within fenced private property or within 25 yards of private residencies.

In addition to transect walking, twenty-five live-animal traps designed for large and small mammals (which capture animals unharmed) were set within the project site for twenty-four-hour periods on October 29 and 30 and November 4 and 5, 2017. Both day and night live trapping was conducted. To determine if animal movement trails existed on the project site special attention was given to observing and identifying animal tracks. In addition, soil sifting and smoothing was done on un-vegetated locations so that tracks would be more prominent and identifiable. Road kills on 66th Avenue and Harrison Street were monitored on each site visit. Invertebrate sampling was conducted on the evenings of October 29 and 30, 2017. Three Bioquip Light Live Traps were used for attracting and live-capturing flying insects. Black lights were the attracting mechanism with each trap powered by a 12-volt automobile battery.

Though scientific name changes occur as new discoveries are made in plant and animal taxonomy, the scientific names used in this report are taken from the standard and most available references describing the species found in the desert regions of Southern California—Bruce G. Baldwin's *The Jepson Manual* (Second Edition) published in 2012; D. P. Tibor's *Inventory of rare and endangered vascular plants of California* published in 2001; R. A. Stebbins and S. M. McGinnis' *Field guide to amphibians and reptiles of California* published in 2012; Peterson's *Bird of North America* published in 2008; and E. W. Jameson's and H. J. Peeters' *California mammals* published in 2004. Plant common names used in this report are taken from Baldwin (2012), Jaeger (1969) and Tibor (2001). Animal common names are taken from Stebbins and McGinnis (2012), Peterson (2008) and Jameson and Peeter (2004).

Fieldwork was conducted by James Cornett (M.S., biology). Plant identifications were made by Andrew Sanders (B.S.) and Mr. Cornett. Animal remains were identified by Robert Reynolds (B.S.) and Mr. Cornett. The literature review was conducted by Terry Belknap (B.S.). The report was written by Mr. Cornett.

IV. PLANT SURVEY RESULTS

The intensive field surveys described in the previous section revealed no climax and intact native plant communities within the proposed utility line corridor. However, scattered and disturbed remnants of the mixed saltbush scrub community were found. Within the corridor, these isolated and scattered remnants included quailbrush (*Atriplex lentiformis*), salt grass (*Distichlis spicata*), mesquite (*Prosopis glandulosa*), arrow weed (*Pluchea sericea*), iodine bush (*Allenrolfea occidentalis*), alkali goldenbush (*Isocoma acradenia*) and bush seepweed (*Suaeda moquinii*). These species occupy hundreds of square miles in the Coachella and Imperial valleys and thousands of square miles elsewhere in the desert lands in California.

Many kinds of introduced and exotic weed species were found in the proposed corridors including shrub tamarisk (*Tamarix ramosissima*), tree tamarisk (*Tamarix aphylla*), Russian thistle (*Salsola tragus*), horseweed (*Conyza canadensis*), common sunflower (*Helianthus annuus*) and nettleleaf goosefoot (*Chenopodium murale*). The abundance of exotic weed species is an indication of the severe human disturbance and activities within the project area

The Inventory of Rare and Endangered Plants of California, published by the California Native Plant Society (2001), the *CNDDB Special Plant List* (2017) and the *Endangered, Threatened, and Rare Plants of California* (2017) indicate no listed or sensitive plants species that might occur within the project area. Additionally, The Coachella Valley Multiple Species Habitat Conservation Plan does not indicate the presence of any sensitive species in the project area.

Although field surveys were done in fall when most spring-blooming ephemeral plant species would not be in evidence, no additional plant surveys are recommended. This is because (1) there is a known paucity of spring-blooming ephemerals in areas of saline soil such as is found in the project area, (2) no records exist indicating sensitive plant species are known within or near the project area and (3) the field surveys revealed no evidence of the presence of sensitive plant species. In addition, the existing CVMSHCP covers and protects nearly all sensitive plant species known to occur in the greater Coachella Valley region.

A list of native and naturalized vascular plant species found within the project boundaries can be found in Table 1 beginning on page 22 of the Appendix. The list does not include ornamental plantings associated with residences in the area nor commercial agricultural crops such as dates or citrus.

V. ANIMAL SURVEY RESULTS

The fauna of the project site and surrounding vicinity was composed of species expected in an area dominated by human residences, abandoned agricultural fields and active agricultural fields.

Invertebrates

Encountered invertebrates on the site included honey bee (*Apis mellifera*), antlion (Family Myrmeleontidae), Eleodes beetle (*Eleodes armata*) and European house cricket (*Acheta domesticus*). Three insect species known to occur within the region have been placed on the California Department of Fish and Game's *Special Animals* list. They are the Coachella giant sand treader cricket (*Macrobaenetes valgum*), Coachella Valley Jerusalem cricket (*Steno-pelmatus cahuilaensis*) and Coachella Valley grasshopper (*Spaniacris deserticola*). The United States Fish & Wildlife Service has listed as endangered a fourth insect species, Casey's June beetle, *Dinacoma caseyi*. (Casey's June beetle is not a covered species under the CVMSHCP.) None of these four insect species were found during the surveys and none are expected. The former three species are associated with windblown sand habitats, a habitat type not found in or near the project boundaries. Casey's June beetle is restricted to the upper Coachella Valley and has never been found within 20 miles of the project site area.

Amphibians

No amphibians were observed or detected in or near the project boundaries. No amphibian species are expected as there are no standing bodies of water and soils are highly alkaline.

Reptiles

Three reptile species were detected on site: desert spiny lizard (*Sceloporus magister*), side-blotched lizard (*Uta stansburiana*) and western whiptail (*Cnemidophorus tigris*).

Effort was made to locate sign of the officially threatened desert tortoise (*Goperhus agassizi*). However, no evidence of any kind was found. No direct observations were made. The desert tortoise has never been found within an alkali sink plant community. It is concluded that this species does not currently occur within the project site and immediate vicinity.

An effort was made to locate the flat-tailed horned lizard, *Phrynosoma mcalli.* However, no individuals or sign were found. The flat-tailed horned is associated with areas of loose,

windblown sand, a habitat not found in or near the project site. At one time, the flat-tailed horned lizard had been proposed to be listed as a threatened species.

Birds

Birds observed within the project boundaries included mourning dove (*Zenaida macroura*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), common raven (*Corvus corax*) and house sparrow (*Passer domesticus*). No observations or evidence of the loggerhead shrike, a state Species of Special Concern and not covered by the CVMSHCP, were recorded.

Burrowing Owl and other Migratory Birds

No observations of the protected burrowing owl (*Athene cunicularia*) were recorded and no evidence of this species' presence was found. There was no evidence that the project site was a significant source of cover or food resources for any sensitive or listed migratory bird species.

Mammals

Detected mammals included the deer mouse (*Peromyscus maniculatus*), desert cottontail (*Sylvilagus audubonii)* and coyote (*Canis latrans*).

No individuals or evidence of the Coachella Valley round-tailed ground squirrel (*Spermophilus tereticaudus chlorus*) or Palm Springs little pocket mouse, *Perognathus longimembris bangsi*, were detected. The United States Fish & Wildlife Service has expressed concern regarding the status of these species. The absence of the ground squirrel and pocket mouse on the project site undoubtedly reflects the lack of suitable habitat. These species are normally found in relatively undisturbed localities where soils are coarser and less saline. Both rodents are covered species under the CVMSHCP.

No evidence (observations, tracks, burrows or scat) of the protected and non-covered kit fox *(Vulpes macrotis*) was found.

A complete list of vertebrate species observed or detected on the project site can be found in Table 2 of the Appendix.

VI. FINDINGS AND RECOMMENDATIONS

Approximately 3.5 miles of severely impacted landscape will be further disturbed because of the installation of a sewer line. Past impacts have been so severe that the current project will have no additional significant impacts upon native plants, animals or their habitats.

The remaining comments are restricted to those species or habitats not covered under the CVMSHCP or that are only partially covered.

Casey's June Beetle

Although Casey's June beetle is known to occur in the Coachella Valley, trapping surveys failed to detect this species. Thus far, this officially endangered, non-covered species has not been found east of Cathedral City in the Coachella Valley. Therefore, no further surveys are recommended for Casey's June beetle and no mitigation is required or recommended.

Desert Tortoise

Though the desert tortoise is a covered species under the CVMSHCP, clearance surveys for the tortoise can be required by the United State Fish & Wildlife Service prior to site disturbance. The desert tortoise is known to occur in the Coachella Valley but is not currently known to be present on the valley floor, particularly in disturbed environments where saline soils predominate. The overwhelming majority of observations have been on upper bajadas surrounding the valley. In keeping with this distribution pattern, protocol-level surveys revealed no evidence of the desert tortoise within or adjacent to the project site. Therefore, no additional surveys or actions regarding this species are recommended.

Burrowing Owl

The burrowing owl is not typically found in areas of regular human use where impacts to natural communities are severe. In this study, the inability to detect the owl within the project site boundaries is attributed to four factors. (1) Surrounding lands are highly impacted by human activities including farming, playing children and moving vehicles. Burrowing owls do not normally take up residence where there are unpredictable human intrusions into owl territories. (2) Owls create burrows by expanding existing rodent burrows. Observable rodent burrows were extremely rare within the project site boundaries. This reduces or even eliminates opportunities for owl burrow enlargement. (3) Domestic dogs and cats were observed on more than a dozen occasions. Burrowing owls do not take up residence where stray dogs and cats, potential predators, are present. (4) Much of the corridor is occupied by date groves, dense tamarisk thickets and dwellings. Burrowing owls required unobstructed surroundings so that they may detect predators. The absence of the burrowing owl, therefore, is most likely due to a lack of suitable habitat. Due to the absence of suitable habitat for the burrowing owl, no additional or future owl surveys are recommended.

Loggerhead Shrike

The loggerhead shrike is a state Species of Special Concern. No observations or evidence of its presence were recorded. The highly disturbed nature of the habitat, regular human activity and stray cats and dogs are the likely causes of the shrike's absence. No further action regarding this species is recommended or required.

Migratory Birds

All species of migratory birds are protected under the federal Migratory Bird Treaty Act and are, therefore, not functionally covered under the CVMSHCP. However, the project area was found to not be a significant resource for any migratory avian species. The high level of site disturbance, regular human activities and stray animals resulted in the *not significant* finding.

Desert Dry Wash Woodland

The desert dry wash woodland community is not a covered habitat under the CVMSHCP. However, this community is not present within the project boundaries and, therefore, no actions need be taken regarding this community.

CVMSHCP Conservation Areas

The project site does not lie within a Conservation Area of the CVMSHCP. Additionally, there are no Conservation Areas that abut the project area. Therefore, there are no requirements or restrictions regarding this project and a Conservation Area.

Although the site does lie within the fee area of the CVMSHCP, the Coachella Valley Water District is not required to pay the wildlife habitat mitigation fee because of its preservation of land elsewhere within the Plan area.

Mitigation Summary

No mitigation is required or recommended.

Conclusion

Development of the proposed sewer line corridor will not have significant adverse impacts upon biological resources in the region.

VII. REFERENCES

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti and D. H. Wilken. 2012. *The Jepson Manual: Vascular Plants of California.* (Second Edition) University of California Press, Berkeley, California.

California Department of Fish & Game. November 2017. Natural Diversity Database.

California Department of Fish & Game. 2012. Staff Report on Burrowing Owl Mitigation. Natural Resources Agency, State of California.

California Department of Fish & Game *Special Animals Report* (2017). Natural Resources Agency, State of California.

Coachella Valley Association of Governments. 2006. *The Coachella Valley Multiple Species Habitat Conservation Plan*. Coachella Valley Association of Governments, Palm Desert, California.

Fish and Wildlife Service. 2009. Department of the Interior, Fish and Wildlife Service 50 CFR Part 17. Federal Register Vol. 74, No. 215.

Garrett, K. and J. Dunn. 1981. *Birds of Southern California*. Los Angeles Audubon Society, Los Angeles, CA.

Jaeger, E. C. 1957. *The North American deserts*. Stanford University Press, Stanford, California.

Jaeger, E. C. 1969. *Desert wildflowers*. Stanford University Press, Stanford, California.

Jameson, E. W. Jr. and H. J. Peeters. 2004. *Mammals of California*. University of California Press, Berkeley, CA.

Munz, P. A. 1974. *Flora of Southern California.* University of California Press, Berkeley, California.

National Climatic Data Center. 2017. Climatic summaries, Asheville, North Carolina.

Peterson, R. T. 2008. *Peterson field guide to birds of North America.* Houghton Mifflin Company, New York, New York.

Sawyer, J. O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation.* California Native Plant Society, Sacramento, California.

Stebbins, R. C. and S. M. McGinnis. 2012. *Field guide to amphibians and reptiles of California*. University of California Press, Berkeley, California.

Tibor, D. P. (editor). 2001. *Inventory of rare and endangered plants of California.* California Native Plant Society, Sacramento, California.

XIII. CERTIFICATION STATEMENT

I, James W. Cornett, hereby certify the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements and information presented are true and correct to the best of my knowledge and belief.

November 22, 2017

Date

Principal Investigator

APPENDIX

Species Status Terms Used in This Report

State, Federal, Tribal and local governments, and occasionally private conservation organizations, determine certain plant and animal species are in need of special protection because their numbers are declining and extinction may be likely. Collectively, such species are referred to as special-status species.

Species or subspecies officially classified as **Endangered** are in imminent danger of becoming extinct. State and federal endangered species laws require that government agencies take direct steps to prevent further decline in the numbers of each endangered species. Persons or companies wishing to develop land on which endangered animal species occur will be required to mitigate adverse impacts to the endangered species so that there is no reduction in numbers and no net loss of the species' habitat. Mitigation may take the form of avoiding development on that portion of the site inhabited by the species, acquiring habitat for the species elsewhere or, in rare instances, relocating the project to an alternate site. In certain instances, an endangered species may be adversely impacted even though it does not actually occur on site. If such a finding is made, mitigation will likely be required.

Species or subspecies officially classified as **Threatened** are likely to become endangered if action is not forthcoming from government agencies. These species are not in imminent danger of becoming extinct and there is more time to find ways to prevent their extinction. Mitigation requirements for threatened species are the same as those for endangered species.

The state of California has an additional classification known as **Species of Special Concern**. In brief, these are plant and animal species whose numbers may be declining or who status may be in jeopardy but there is insufficient data to formerly classify them as threatened or endangered. Mitigation for these species can be required under the California Environmental Quality Act (CEQA) but is not automatic.

Government agencies sometimes erect Habitat Conservation Plans (HCPs) that protect selected **Covered** species. Specific mitigation for Covered species may not be required under such a plan. However, Covered species may not be **functionally** covered because state or federal agencies have refused to allow the taking of such species despite an approved HCP. Mitigation for Covered species not permitted to be taken by wildlife regulatory agencies may still be required.

If officially threatened or endangered species not fully covered under an HCP are adversely impacted by a development the project proponents should expect to meet with staff of the United States Fish & Wildlife Service and/or the California Department of Fish & Game to review and decide upon mitigation alternatives.

TABLE 1
Plant Species Recorded
Sunbird Sewer Pipeline Corridor

ANGIOSPERMAE – DICOTYLEDONES

AMARANTHACEAE – PIGWEED FAMILY
Amaranthus albus – Tumble Pigweed
Amaranthus palmeri – Palmer Amaranth

ASTERACEAE - SUNFLOWER FAMILY
Ambrosia acanthicarpa – Annual Bursage
Ambrosia salsola – Cheesebush
Heterotheca subaxillaris - Camphorweed
Conyza canadensis – Horseweed
Helianthus annuus – Common Sunflower
Isocoma acradenia – Alkali Goldenbush
Malacothrix glabrata – Desert Dandelion
Pluchea sericea – Arrow-weed

BORAGINACEAE - BORAGE FAMILY
Cryptantha micrantha - Purple-rooted Forget-me-not
Tiquilia plicata - Plicate Coldenia

BRASSICACEAE - MUSTARD FAMILY
Brassica tournefortii - Sahara Mustard
Sisymbrium irio – London Rocket

CHENOPODIACEAE - GOOSEFOOT FAMILY
Atriplex canescens - Wingscale
Atriplex lentiformis – Quailbrush
Atriplex polycarpa – Cattle Spinach
Chenopodium murale – Nettleleaf Goosefoot
Salsola tragus - Russian Thistle

FABACEAE - PEA FAMILY
Parkinsonia aculeata – Mexican Palo Verde
Parkinsonia florida – Blue Palo Verde
Prosopis glandulosa – Honey Mesquite
Psorothamnus emoryi - Emory Dalea

TAMARICACEAE - TAMARISK FAMILY
Tamarix aphylla – Tree Tamarisk
Tamarix ramosissima – Shrub Tamarisk

ANGIOSPERMAE - MONOCOTYLEDONES

ARECACEAE – PALM FAMILY
Washingtonia robusta – Mexican Fan Palm

POACEAE - GRASS FAMILY
Avena fatua – Wild Oat
Bromus mollis – Soft Brome
Cynodon dactylon - Bermuda Grass
Distichlis spicata – Salt Grass
Hordeum leporinum – Hare Barley
Phalaris minor - Canary Grass
Polypogon monspeliensis – Rabbitfoot Polypogon
Schismus barbatus - Abu-mashi

TABLE 2
Expected Breeding or Observed Vertebrates
Sunbird Sewer Pipeline Corridor

REPTILES

PHRYNOSOMATIDAE – SPINY LIZARDS AND KIN
Sceloporus magister – Desert Spiny Lizard *
Uta stansburiana - Side-Blotched Lizard *

TEIIDAE - WHIPTAILS
Cnemidophorus tigris - Western Whiptail *

COLUBRIDAE - COLUBRIDS
Lampropeltis getulus - Common Kingsnake ?
Masticophis flagellum – Coachwhip ?
Pituophis melanoleucus - Gopher Snake

BIRDS

CHARADRIIDAE – PLOVERS
Charadrius vociferous – Killdeer *

CATHARTIDAE – NEW WORLD VULTURES
Cathartes aura – Turkey Vulture *

ACCIPITRIDAE - OSPREY, HAWKS, EAGLES
Buteo jamaicensis - Red-Tailed Hawk *

FALCONIDAE - FALCONS
Falco sparverius - American Kestrel *

COLUMBIDAE - PIGEONS AND DOVES
Columba livia - Rock Dove *
Zenaida macroura - Mourning Dove *

CUCULIDAE - CUCKOOS
Geococcyx californianus - Greater Roadrunner *

CORVIDAE - CROWS AND JAYS
Corvus corax - Common Raven *

PARIDAE – CHICKADEES, TITMICE
Auriparus flaviceps – Verdin *

MIMIDAE - MOCKINGBIRDS AND THRASHERS
Mimus polyglottos - Northern Mockingbird *

STURNIDAE - STARLINGS
Sturnus vulgaris - European Starling *

EMBERIZIDAE - WOOD WARBLERS, TANAGERS
Dendroica coronata – Yellow-rumped Warbler *
Euphagus cyanocephalus - Brewer's Blackbird *
Quiscalus quiscula – Great-tailed Grackle *

PLOCEIDAE - WEAVER FINCHES
Passer domesticus - House Sparrow *

FRINGILLIDAE - FINCHES
Carpodacus mexicanus - House Finch *

MAMMALS

VESPERTILIONIDAE - EVENING BATS
Pipistrellus hesperus - Western Pipistrelle *

LEPORIDAE - HARES AND RABBITS
Sylvilagus audubonii – Desert Cottontail *

MURIDAE - RATS AND MICE
Mus musculus - House Mouse *
Peromyscus maniculatus – Deer Mouse *

MUSTELIDAE - WEASELS AND SKUNKS
Mephitis mephitis – Striped Skunk *

CANIDAE - FOXES, WOLVES, AND COYOTES
Canis latrans - Coyote *
Urocyon cinereoargenteus – Gray Fox ?

* = Sign or individual observed on site.
? = Possible occurrence on or near site; not detected during survey

APPENDIX C: AVENUE 66 TRUNK SEWER PROJECT BIOLOGICAL SURVEY REPORT

Avenue 66 Trunk Sewer Project

BIOLOGICAL SURVEY REPORT

Coachella Valley Water District
75515 Hovley Lane East
Palm Desert, CA 92211
Contact: Brett Daniels, M.S., Associate Biologist

PROJECT DESCRIPTION

The Avenue 66 Trunk Sewer Project (proposed sewer pipeline project) is designed to provide sewer facilities to the Oasis Community within unincorporated Riverside County. The Oasis Community is located along Avenue 66th, Harrison Street, Echols Road, and Martinez Road. Existing development consists of multi-family residential (Polanco Parks), single family residential, commercial, Torres Martinez Tribal Center, Sunbird Mobile Home Park, Oasis Villas Community, and Oasis Gardens Mobile Home Park. As proposed, the project involves the installation of a gravity sewer pipeline extension, force-main, a new lift station, and capacity upgrades to Lift Station 55-21. The sewer pipeline will head east along Avenue 66, from Harrison Street to Polk Street. At the intersection of Polk Street and Avenue 66, the proposed sewer pipeline will connect with the existing Polk Street Trunk Sewer Pipeline, which conveys the sewer flow to Lift Station 55-21 then eventually to Water Reclamation Plant 4 via an existing 18-inch force main. Approximately 16,500 linear feet of gravity pipelines will be installed for the off-site sewer system to provide sewer service to the Oasis Community, and adjacent existing and future developments. In addition, approximately 2,500 linear feet pipelines will be installed for the off-site sewer system to provide sewer service to the Torres Martinez Tribal Center and nearby residences. Equipment and construction materials will be staged at the proposed lift station site immediately adjacent to the Sunbird Mobile Home Community (refer to **Exhibit A**).

The survey area for this biological report is focused on the proposed 2,500 linear foot alignment along Martinez Road (south of Avenue 66). The purpose of this biological evaluation was to characterize biological resources present at the site (e.g., vegetation communities, waterways, and wildlife habitats) and to assess the potential for the site to support special-status resources (e.g., wetlands or waterways under SEC404, and listed or candidate species under SEC 1600-1603 CDFG code). The following report presents the methods and results of the survey, including a detailed description of the site, a description of plant communities and wildlife observed, and an evaluation of special-status plants, animals and water resources and their potential to occur on the project site.

METHODS

The biological evaluation included a literature review and a habitat-level survey of the project site. Literature was reviewed to identify any special-status resources reported as occurring in the project vicinity and to gather additional information on the natural history and ecology of these species (e.g., habitat requirements). Literature sources cited include:

- California Department of Fish and Game's (CDFG), California Natural Diversity Database (CNDDB) Special Animals List CDFG/CNDDB, 2018
- Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (CVMSHCP/NCCP) 2008
- California Native Plant Society 2018

Prior to conducting the field survey, the California Natural-Diversity-Data-Base (CNDDB), the California Department of Fish and Game's Special-Status species lists and CVMSHCP/NCCP were queried to identify sensitive plant and animal species that have been reported from the region. **Table 1** provides special status plant and animal resources that are state and/or federally listed

under the CVMSHCP/NCCP. **Table 2** lists vegetation observed on the project site or in the surveyed buffer area. **Table 3** lists wildlife observed on the project site or within the surveyed buffer area.

Coachella Valley Water District's biologist conducted a habitat-survey on the project site on August 23, 2018, to ascertain what resources, if any, were present onsite. These surveys were timed to coincide with cooler periods of the day (early morning) to maximize observations of any wildlife. The surveys' consisted of a site walkover to identify potential waterways, plant communities, dominant plant species, and wildlife present on the project site. In addition, habitat that could support special status resources including plants and animals was characterized. For purposes of this analysis, special status resources are plant communities, plants, waters/wetlands, and wildlife that are:

- Identified by state and/or federal agencies as rare, threatened, or endangered or designated as candidates for listing under provisions of the federal or state Endangered Species Acts
- Considered sensitive by recognized monitoring agencies and conservation organizations (Department of Fish and Game (DFG), California Native Plant Society (CNPS), United States Fish and Wildlife Service (FWS) or the National Audubon Society
- Wetlands or other waters under the Clean Water Act and California Fish and Game Code, SEC 404, administered by the U.S. Army Corps of Engineers (Corps) and DFG, respectively.

Vegetation communities on the project site were identified based on the field survey and review of the dominant communities associated with the region where the project site is located. Vegetation communities occurring on the project site are described below and listed on **Table 2**. Wildlife species occurring or having the potential to occur on the project site were identified during the site surveys through direct observation, indirect evidence (e.g. scat, tracks, nests, and burrows), and assessment of habitat suitability. Observed wildlife species are provided in **Table 3**. Habitat suitability was assessed on pre-survey literature review to identify habitat requirements of special-status species potentially occurring in the project vicinity, as well as to evaluate characteristics of plant communities/wildlife habitat observed on or adjacent to the project site.

RESULTS

The following sections present a brief description of the plant species, vegetation communities, and wildlife species observed on the project site as well as a discussion of the special-status resources potentially occurring on-site.

Topography and Property Description

The project involves the construction and placement of a sewer line extension from Avenue 66 to the Torres Martinez Tribal Headquarters located approximately 2,500 linear feet south of Avenue 66 on Martinez Road, Mecca CA. The project alignment right-of-way is adjacent to the east side of Martinez Road. The sewer line will then turn off of Martinez Road to the entry driveway for the Torres Martinez Headquarters building. The area is surrounded by tribal housing and agricultural lands with small patches of disturbed desert interspersed along the west side of the roadway (**Figures 1-3)**.

Vegetation Communities and Plant Species

Vegetation communities observed during the site survey are presented in **Table 2** and discussed briefly below.

Dominant vegetation identified on the project site is composed of ruderal (disturbance adapted) plant species with some native vegetation adjacent to the project site. There were scattered assemblages of broad-leaved evergreen and deciduous microphyll shrubs between 0.5 and 2 m (1.5 – 6.5 feet) in height located on the east and west side of Martinez Road just outside of the County right-of-way.

Wildlife

Wildlife observed during the site survey is presented in **Table 3** and discussed briefly below in relation to the vegetation communities identified onsite.

Disturbed Agricultural Lands

Wildlife typically found in this setting include, but are not limited to, Coyote (*Canis latrans*), Mourning dove (*Zenaida macroura*), and Greater Roadrunner (*Geococcyx californianus*). Bird species observed onsite include White Crowned Sparrow (*Zonotrichia leucophrys*), Mourning Dove (*Zenaida macroura*), and a Common Ground-Dove (*Columbina passerina*). A 100-foot buffer was also surveyed around the proposed project site when/where right of way and open space permitted.

Streambed/Waterways

During the course of the field investigation, no jurisdictional waterways or resources were observed onsite; in addition, this area is devoid of any riparian or intermittent streambeds with established bed and bank. The entire project site has been subject to extensive disturbance and grading activities associated with the construction of tribal housing on both the east and west sides of the proposed pipe alignment as well as heavy agricultural use. No special status species, or supportive habitat, was observed onsite during the course of the survey.

Special Status Species Occurrence

The biological survey included an analysis of the special status species and habitats found in the region and their potential to occur on the project site. The following section describes the results of this analysis and observations of conditions in the field.

Plant Species

The CNDDB query revealed no listed or threatened species within a 1-mile radius of the project site but did list three plant species as occurring in the region, Jackass-Clover (*Wislizenia refracta ssp. refracta*), Chaparral Sand-Verbena (*Abronia villosa var. aurita*), and Mecca Aster (*Xylorhiza cognata*). Chaparral sand-verbena has been recorded approximately 4 air miles south of I-10 freeway in the Meccas Hills on the east side of the Coachella Canal which is 8 miles east of the project site. Chaparral Sand-Verbena is typically associated with chaparral, coastal scrub, and desert dunes and open desert scrub on alluvial soils. No potential habitat for this species was observed onsite and thus it is not expected on or near the project site. Jackass-Clover is associated with Playas, Desert Dunes and Mojavean/Sonoran Desert Scrub. Micro habitats include sandy washes, roadsides, and alkaline flats. The most recent record for Jackass Clover is from 1936, 10

miles east of Indio along the I-10 just north of the Mecca Hills which is over 10 miles away from the project site. Mecca Aster is associated with Sonoran Desert Scrub and more specifically with steep canyon slopes in areas of sandstone and clay. No supportive habitat for either plant species was observed onsite during the pedestrian surveys. In addition no special status plant species associated with the CVMSHCP were observed during the survey within the project bounds or immediately adjacent to the site.

Wildlife

The CNDDB query revealed one federally listed species within the region, Desert tortoise (*Gopherus agassizii*). Desert tortoise are associated with desert scrub, desert washes, and Joshua tree habitats but can occur in almost every desert habitat. Desert tortoise require microhabitats with friable soil for burrow and nest construction and are dependent upon annual wildflowers which are also found in creosote bush habitat. Nearest recorded occurrences for this species include Chuckwalla Valley, Milpitas Wash, approximately 2.5 miles north of Thermal Canyon and 5 miles east of Coachella from 500 to 2000 feet elevation within various vegetation communities. No supportive habitat is present within the project footprint or surrounding area within one mile. No other federal or state listed threatened or endangered species are recorded on or within a 1-mile radius of the project site. No special status species were observed during the survey within the project bounds or immediately adjacent to the site. In addition, the site offers very limited habitat, forage, or refugium for wildlife species as the area is highly developed and surrounded by tribal housing and agricultural farms and ranches; although no special-status wildlife species were observed during the survey, migratory bird species could potentially move through the site. Their occurrence would be transient in nature and would not be affected by activities onsite as there is no supportive habitat for nesting or roosting; i.e. trees, shrubs, or structures within the immediate project right-of-way.

SUMMARY

Based on the field survey of the project site on August 23, 2018 proposed project activities are not anticipated to result in impacts to special-status plant or animal species. In addition, no impacts to special-status resources or sensitive habitat are anticipated. Avoidance and minimization measures to protect wildlife species will include preconstruction surveys for nesting birds, burrowing owls, and environmental training.

ATTACHMENTS

Exhibit A. Regional map showing project limits, staging area at lift station and pipe alignment
Figures 1-3 Onsite photographs
Table 1 CVMSHCP/NCCP listed wildlife and vegetation
Tables 2-3 Observed wildlife and vegetation
Resume Brett Daniels, M.S., CVWD Biologist

Exhibit A. Area map showing proposed lift station and staging area, sewer line alignment and meter connections.

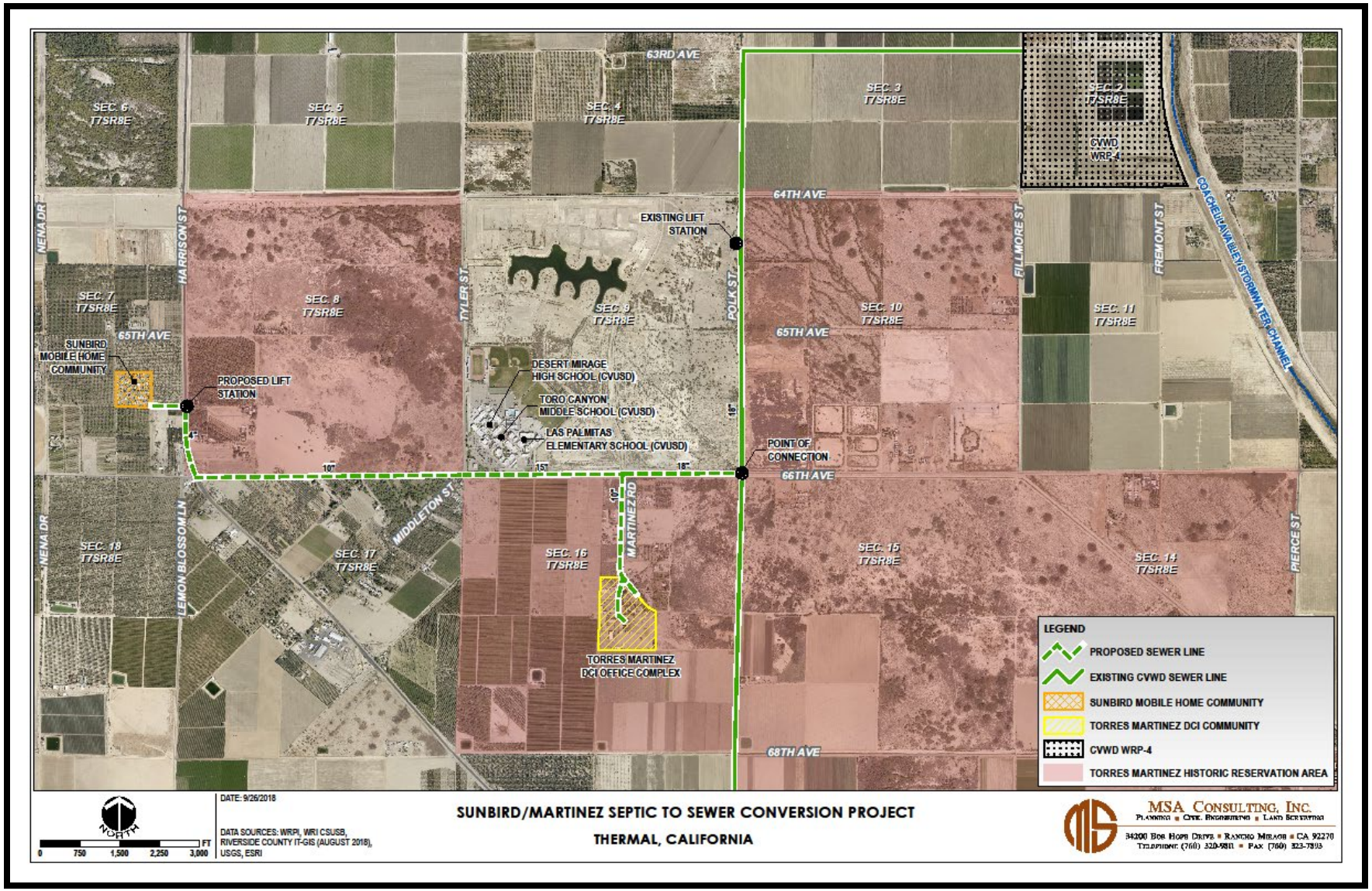


Figure 1. Looking south down east side of Martinez Road to Torres Martinez Tribal Headquarters

Figure 2. Looking south down Martinez Road down proposed pipe alignment

Figure 3. Looking north along east side Martinez Road from Torres Martinez Tribal Headquarters

Table 1. Special Status Species Covered under the Coachella Valley MSHCP

Amphibians	***Genus species***	**Status**	**Potential To Occur On Project Site**
Arroyo toad	*Bufo californicus*	FE/CSC	No
Reptiles			
Desert tortoise	*Gopherus agassizii*	FT/ST	No
Flat-tailed horned lizard	*Phrynosoma mcallii*	CSC	No
Coachella Valley fringe-toed lizard	*Uma inornata*	FT/SE	No
Fish			
Desert pupfish,	*Cyprinodon macularius*	FE/SE	No
Invertebrates - Insects			
Coachella Valley giant sand-treader cricket,	*Macrobaenetes valgum*	NA	No
Coachella Valley Jerusalem cricket	*Stenopelmatus cahuilaensis*	NA	No
Birds			
Yuma clapper rail	*Rallus longirostris yumanensis*	FE/ST/SFP	No
California black rail	*Laterallus jamaicensis*	ST/SFP	No
Burrowing owl	*Athene cunicularia*	CSC	No
Southwestern willow flycatcher	*Empidonax traillii extimus*	SE/FE	Transient
Crissal thrasher	*Toxostoma crissale*	CSC	Transient
Le Conte's thrasher	*Toxostoma lecontei*	CSC	Transient
Least Bell's vireo	*Vireo bellii pusillus*	FE/SE	Transient
Gray vireo	*Vireo vicinior*	CSC	Transient
Yellow warbler	*Dendroica petechia brewsteri*	CSC	Transient
Yellow-breasted chat	*Icteria virens*	CSC	Transient
Summer tanager	*Piranga rubra*[1]	NA	Transient
Mammals			
Southern yellow bat	*Lasiurus ega* or *xanthinus*[1]	NA	No
Coachella Valley round-tailed ground squirrel	*Spermophilus tereticaudus chlorus*	C/CSC	No
Palm Springs pocket mouse	*Perognathus longimembris bangsi*	C/CSC	No
Peninsular bighorn sheep	*Ovis canadensis nelsoni*	FE/ST/SFP	No
Plants			

Mecca aster,	*Xylorhiza cognata1*	NA	No
Coachella Valley milkvetch	*Astragalus lentiginosus var. coachellae*	FE	No
Triple-ribbed milkvetch	*Astragalus tricarinatus*	FE	No
Orocopia sage	*Salvia greatae1*	NA	No
Chaparral sand-verbena	*Abronia villosa var. aurita*	NA	No
Jackass-clover	*Wislizenia refracta ssp.refracta*	NA	No

(Footnotes are explained below.)
The status codes used in the table are identified in the following key, as listed in the *California Natural Diversity Data Base Special Animals List and Special Plants List* from July 2000 (CNDDB 2000).

Key:
FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SC = State Candidate
SFP = State Fully Protected
CSC = Species of Special Concern (a state list of species that are at risk due to habitat modification or destruction, over-collecting, disease, or other threats)
CNPS = Rare in California
NA = Not Applicable

Table 2. Observed Vegetation

Family	*Genus species*	Common Name	Occurrence
Poaceae (Gramineae)	*Phragmites communis*	Common reed	Present in agricultural drainage channel on Ave 66
Tamaricaceae	*Tamarix ssp.*	Tamarisk	Present
Brassicaceae	*Brassica tournefortii*	Sahara Mustard	Absent
Asteraceae	*Baccharis pilularis*	Coyote Brush	Present
	Pluchea sericea	Arrow weed	Present
Salicaceae	*Salix lasiolepis*	Arroyo willow	Absent
	Populus fremontii	Cottonwood	Present as landscape tree
Arecaceae	*Washingtonia filifera*	Fan Palm	Present outside of right-of-way
Nyctaginaceae	*Bougainvilla glabra*	Bougainvilla	Present as landscape vegetation

Table 3. Observed Wildlife

INSECTS		
Diptera	*Culicidae*	midges, mosquitos
BIRDS		
Columbidae	*Zenaida macroura*	Mourning dove
Corvidae	*Corvus corax*	Raven
Emberizidae	*Zonotrichia leucophrys*	White-Crowned sparrow
Fringillidae	*Carpodacus mexicanus*	House Finch
Sturnidae	*Sturnus vulgaris*	European Starling
Tyrannidae	*Tyrannus verticalis*	Western Kingbird

Brett Daniels, M.S., Associate Biologist
Coachella Valley Water District
75-515 Hovley Lane East, Palm Desert, CA 92211
Email: bdaniels@cvwd.org / Desk: 760.398.2651

Education

Green Mountain College (UC Riverside Extension Program)
M.S. Conservation Biology — UC Riverside Palm Desert/Poultney, Vermont 2015
UC Davis
Post Graduate biology work for Arbovirus Research — Coachella Valley, California 2002
CEQA/NEPA and California Law through extension — Sacramento, California 2000
Sonoma State University
B.A. Environmental Sciences — Rohnert Park, California 1997
College of Marin
A.A. Landscape Architecture — Kentfield, California 1995

Registration/Training/Certification

Registered Biologist with Riverside County California Environmental Planning Department.
USFWS Permitted Desert Pupfish Biologist Recovery Permit # TE24256B-0
CDFW Scientific Collecting Permit: SCP 4533 # D-011850150-1
CDFW, ICC, AZGF Permitted Flat-tailed horned lizard Biologist
Invasive species inspection, eradication, control and monitoring program development CDFW
Desert Tortoise Conservation Program survey training Certificate # 1EOOW730
Florida Venomous Reptile License #824
40hr. Hazardous Material and Emergency Response Training
Proficient in the use of GPS and electronic distance measuring equipment
ESRI GIS/Campus workshops
FAA Registered UAV pilot
First Responder & CPR trained
PADI Certified Open Water Diver
Kukkiwon Certified 2nd Dan Black Belt in Taekwondo
Extensive experience in the field with accomplished scientific researchers and biologists such as Bryan G. Fry and Cameron Barrows
Proficient in the use and operation of 4x4 vehicles, ATV/OHV transport and Unmanned Aerial Vehicle (UAV) operation
Expert waterman comfortable operating motor vessels and sailboats (up to 75') - experience with Airboats

Experience

Associate Biologist - Coachella Valley Water District — Palm Desert, California 2010 – Present
I currently serve as the water district's Associate Biologist within their environmental services group. My duties include but are not limited to development and management of studies involving federal and state endangered species, biological assessments and habitat surveys, and research. I manage aquatic invasive species programs, species-specific surveys and project budgets associated with strategic goals. I provide daily biological resource support of the numerous operational maintenance projects and biological commitments performed on district owned lands within conservation areas. I also serve as a professional member on several regional biological work groups and steering committees responsible for the implementation and management of the Coachella Valley Multiple Species Habitat Conservation Plan.

Environmental Programs Director - City of Coachella — Coachella, California 2006 – 2010
In my role as the Environmental Programs Director for the City of Coachella, my primary duties involved the implementation, management, and integration of newly adopted environmental regulatory programs including an Industrial Pretreatment Program and National Pollution Discharge Elimination System (IPP/NPDES). In addition to program development and implementation, I achieved major compliance goals with state and federal agencies within a 24-month period. Additional responsibilities included supervision of administrative office staff, biological evaluations, review of environmental issues associated with planning and development projects, and City representation with business owners, citizens, contractors, and agency personal. I also served as Project Manager on underground storage cleanup projects,

managed the state funding, and subcontracted cleanup work. I was successful in securing over $1M in grant funding from the Imperial Irrigation District for a 400KV photovoltaic solar system on lands belonging to the City's wastewater reclamation plant. I gained a great deal of experience working with large public utilities such as IID and enabled the city to become the first municipality with a WRP operated off solar power in southern California.

Palm Springs Biological Services Palm Springs, California 2000 - Present

I currently serve as the senior biologist for this small biological consulting and Specimen Company. Services include herpetological and general wildlife biological surveys, assistance with NEPA permitting, and endangered species consultation. Additional services include unmanned aerial photography and video editing, wildlife photography, and field herpetology.

Publications

Food from Small Places. Feature article on the design and construction of recirculating agricultural systems. *Aquaponics Journal of America Volume III. Dec/Jan 1997-98*

Bay Area Back roads. Appearance as a guest biologist for a venomous reptile segment aired on a local CBS affiliate. In addition to providing commentary on the local species, I also guided their camera team to a local rattlesnake den and provided ecology and life history narration.

APPENDIX D: CULTURAL RESOURCES TECHNICAL REPORT SUNBIRD/MARTINEZ ROAD

Cultural Resources Technical Report Sunbird/Martinez Road Septic to Sewer Conversion Project, Riverside County, California

UGSG Valerie, CA 7.5' Quadrangle

Submitted to:
Water Resources and Policy Initiative
5500 University Parkway, PL-401
San Bernardino, CA 92407

Prepared by:
Amy Gusick, Ph.D., RPA
Natural History Museum of Los Angeles County
900 Exposition Parkway
Los Angeles, CA 90007

December 2018
Revised July 2020

THIS PAGE INTENTIONALLY LEFT BLANK

CULTURAL RESOURCES REPORT: SUNBIRD/MARTINEZ ROAD SEWER PROJECT THERMAL, CALIFORNIA

TABLE OF CONTENTS

APPENDICES

FIGURES

PHOTOGRAPHS

TABLES

ACRONYMS AND ABBREVIATIONS

AMSL	Above Mean Sea Level
APE	Area of Potential Effect
APN	Assessors Parcel Number
BP	Before Present
BMSL	Below Mean Sea Level
CVWD	Coachella Valley Water District
DPR	Department of Parks and Recreation
EIC	Eastern Information Center
ft	feet
GIS	Geographic Information System
GPS	Global Positioning System
m	meter(s)
NHPA	National Historic Preservation Act
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
RPA	Register of Professional Archaeologists
PRC	Public Resources Code
ROW	Right-of-Way
SLF	Sacred Lands File
SMHP	Sunbird Mobile Home Park
SRF	State Revolving Fund Loan
TMCC	Torres Martinez Community Center
WEAP	Worker Environmental Awareness Program

1. MANAGEMENT SUMMARY

The Coachella Valley Water District (CVWD) is proposing a septic to sewer conversion project. The project involves the installation of a gravity sewer pipeline extension, one new lift station, and capacity upgrades to existing Lift Station 55-21. These improvements would be constructed within the CVWD service area boundaries in southern California within an unincorporated area of Riverside County within the community of Thermal. Thermal is located approximately 25 miles southeast of the City of Palm Springs and about 9.5 miles north of the Salton Sea. Regional access to the project area is via Route 86. Local access to the project site is via Echols Road.

The scope of this cultural resource study was to review available archaeological, Native American, and historic literature covering the project site, to conduct a pedestrian survey of the area, and to provide a cultural resources technical report documenting the results of the inventory and to provide a finding of effect and management recommendations. The Area of Potential Effect (APE) covers approximately 24,000 linear feet (ft.) along existing roads. Excavations within existing roads will occur on approximately 16,095 linear ft. of this APE and include, 1,115 linear ft. of Echols Road, 1,345 linear ft. of Harrison Street, and 10,235 linear ft. of 66th Avenue. In September 2018, a segment of Martinez Road was added to the project design. This addition includes 3,400 linear ft. of Martinez Road. The pipeline will be installed below existing paved streets and right-of-ways with a minimum excavation depth 5-ft. and may extend beyond 20-ft. depending on the nature of soils and groundwater levels. The width of the trench will depend on the depth since the trenches will have side slopes laid back at 1:1 or 2:1 depending on depth and soils. Excavations for a new lift station are proposed in a 17-ft. x 17-ft. area on the Northeast corner of Harrison Street and Echols Road. An existing dirt access road will be traversed to access Lift Station 55-21, if necessary. This access road is 4,330 linear ft. Upgrades may be done to Lift Station 55-21 which is within a 3,600 square ft. enclosure.

A site visit with the project engineers was conducted on 1 July 2017. A record search and literature review was conducted at the Eastern Information Center by Amy Gusick on 20 July 2017. The records search returned four cultural resources within or adjacent to the project APE. Gusick contacted the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search on 27 July 2017 and followed up on the request on 10 August 2017 by email and again by phone on 23 August 2017. She received a response from the NAHC on 23 August 2017. On 29 August 2017, Gusick sent letters to the 32 Native American individuals/groups listed in the NAHC responses.

Gusick conducted a field survey on 7 September 2017.

On 27 October 2017, follow-up phone calls/emails were placed to the 29 individuals/group on the NAHC List that had not responded.

On 27 October 2017, a phone call was placed and an email sent to Johanna Marty, Associate State Archaeologist at the State Water Resources Board to inform them of the project and to inquire about any concerns. Ms. Marty returned the call on 01 November 2017 and indicated no concern at that time and informed Gusick that the likely reviewer at the State Water Board would be Kevin Marti, Associate State Archaeologist.

In October 2018, the project alignment was amended to include Martinez Road. A second record search that included this addition was conducted at the Eastern Information Center by Adriane Gusick on 11 October 2018. This records search returned one additional cultural resources within or adjacent to the updated project APE. Gusick updated the SLF search with the NAHC on 11 October 2018. She received a

response on 29 October 2018. On 16 November 2018 Gusick sent letters to the 32 Native American individuals/groups listed on the updated SLF search to inform them of the updated project alignment.

On 26 November 2018, Gusick conducted a survey of the newly added Martinez Road section of the project alignment. This survey was conducted in partnership with Torres Martinez Band of Cahuilla Indians (TM) Also on 26 November 2018, Gusick consulted with TM Most Likely Descendant, Gary Resvaloso who informed her of a discovery of human remains on a previous, unrelated project, but that were near to the current project alignment. On 26 November 2018, Gusick also consulted with Mike Mirelez, the Cultural Resources Coordinator for TM, about additional cultural material previously identified on an unrelated project, but also adjacent to the proposed alignment.

Efforts from the Native American coordination resulted in five responses as of the submittal of this report. It should be noted that Torres-Martinez Desert Cahuilla Indians have requested formal consultation with CVWD, as well as tribal monitoring for all ground disturbing activities and copies of all existing cultural studies and related records. Agua Caliente Band of Cahuilla Indians has no concerns and defers to Torres Martinez. Twenty-Nine Palms Band of Mission Indians would like a copy of the Cultural Report from CVWD when it is completed. Viejas Band of Kumeyaay Indians indicates that the project site has little cultural significance or ties to Viejas; however, they request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for them to reevaluate their participation in the government-to-government consultation process. Morongo Band of Mission Indians indicated that the project is on land sensitive for Cahuilla tribal cultural resources and they normally defer to a nearby tribal government.

Results from the cultural resources survey of the APE included relocation of all five previously recorded sites within or adjacent to the APE; three of these are ineligible for the National Register of Historic Places (NRHP) one was eligible for the NRHP, and one is a listed Historic District. The project will have No Adverse Effect on the Historic Properties. Three new sites were recorded. Two of these were outside of the APE and will not be impacted by the project. One of these resources will be impacted by the project but is recommended ineligible for the NRHP. The recommended finding of effect for the project is No Adverse Effect.

Although the project is recommended No Adverse Effect, there are cultural consideration due to the sensitive nature of the project area based on traditional use of the lands by Native Americans tribes. The National Register Martinez Historic District is within the project APE, along the project segment that includes Martinez Road. This area contains sensitive resources and there is the possibility that unanticipated resources will be encountered if the excavation on paved roads extend below the existing fill material. As such, both archaeological and tribal monitoring is recommended for any initial ground distributing activities such as clearing and grubbing and excavations on the project. If the trenching goes below the road fill on the section of Martinez Road that is within the boundaries of the Historic District, incremental digging is recommended. It is also recommended that prior to any ground disturbing activities, workers are trained on the response to unanticipated discoveries of cultural resources and identification of human remains. In the event of a discovery, work will be stopped within the immediate area of the find until a professional archaeologist can determine the nature of the resources discovered. If any previously unrecorded human remains are inadvertently discovered during operation or maintenance activities, California State law (Health and Safety Code Section 7050.5; Public Resources Code Sections 5097.94, 5097.98 and 5097.99) will be followed on state, county, and private land.

THIS PAGE INTENTIONALLY LEFT BLANK

2. INTRODUCTION

2.1 Project Overview

The CVWD is proposing a septic to sewer conversion project. The alignment is located within an unincorporated area of Riverside County within the community of Thermal, California. The project is within the CVWD boundaries. As proposed, a gravity sewer pipeline on Avenue 66 constructed between Harrison Street and Polk Street will serve both the Sunbird Mobile Home Park (SMHP) and Torres Martinez Community Center (TMCC). A lift station will serve mobile home parks in the vicinity of the SMHP and will discharge to the proposed pipeline at the intersection of Avenue 66 and Martinez Road. The proposed pipeline will connect to an existing 18-inch diameter gravity sewer pipeline on Polk Street, which is tributary to CVWD's Lift Station 55-21 (LS 55-21). LS 55-21 primarily discharges to WRP4. Approximately 124,000 linear ft. of 8-inch (in.) and 10-in. diameter, gravity pipelines will be installed under existing roads. A detailed project description is in Chapter 3.

2.2 Regulatory Setting

The CVWD will serve as lead agency for the project. As partial funding for the project will be sought from the State Revolving Fund Loan (SRF), CVWD will comply with California Environmental Quality Act (CEQA) Plus which requires State Water Resources Control Board staff to consult directly with agencies responsible for implementing federal environmental laws and regulations. As such, project-related activities with the potential to affect historic properties are considered federal undertakings, subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. 306108), as amended, and its implementing regulations found at 36 CFR 800.

2.2.1 Federal

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on Historic Properties. Historic Properties are any prehistoric or historic district, site, building, structure, object, or traditional cultural property (TCP) included in or eligible for inclusion in the National Register of Historic Places (NRHP) [36 CFR 800.16(1)]. 36 Code of Federal Regulations, Part 800 (36 CFR 800) implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties, to determine whether or not they may be adversely affected by a proposed undertaking.

The content of 36 CFR 60.4 defines criteria A through D for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historic significance to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or

B. Are associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

2.2.2 State

Under CEQA, a proposed project is considered to have a significant effect on the environment if it can be expected to "cause a substantial adverse change in the significance of an historical resource" (CEQA Guidelines, Section 15064.5[b]). A historical resource is a resource listed, or determined to be eligible for listing, in the CRHR, a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

Public Resources Code (PRC) section 5024.1(c)(1-4) states that a resource is considered historically significant if it retains "substantial integrity" and meets at least one of the following criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possess high artistic value; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Determining integrity of a resource lies in the authenticity of that resource's physical identity. This is judged by the survival of characteristics that were present during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design setting, materials, workmanship, feeling, and association.

A "substantial adverse change" in a historical resource is a change that includes "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines, Section 15382).

2.3 Personnel

Professional services were performed by individuals that meet the *Secretary of the Interior's Professional Qualifications Standards* (*Federal Register Notice*, Vol. 48, No. 190, pp. 44738–44739, 1983). All cultural resource management work performed in association with this project was under the direct supervision of a member of the Register of Professional Archaeologists (RPA). The Principal Investigator was Dr. Amy Gusick. Dr. Gusick meets the Secretary of Interior's qualifications for cultural resource professionals. Resume for key personnel can be found in Appendix C.

3. PROJECT DESCRIPTION

Chapter 3 provides a description of the Sunbird/Martinez Road Sewer Project. This chapter also defines the APE for the project and defines the project components.

3.1 Project Location

The proposed project is located in southern California within an unincorporated area of Riverside County within the community of Thermal (Figure 3.1). Thermal is located approximately 25 miles southeast of the City of Palm Springs and about 9.5 miles north of the Salton Sea. Regional access to the project area is via Route 86. Local access to the project site is via Echols Road near to the intersection of Echols Road and Harrison Street. The project site falls within Sections 7, 8, 9, 10, 17, and 16 of Township 7 South, Range 8 East of the *Valerie* U.S. Geological Service 7.5-minute series topographic Quadrangle map.

Thermal is in a valley bottom in the southern portion of the Coachella Valley, located east of the Santa Rosa Mountains. It has a desert climate and is surrounded by mountain ranges. Thermal has low-density rural agricultural land uses, including date farms. Although urbanization has greatly diminished agricultural uses in other areas of the County, Thermal has maintained its rural identity. The pipeline route is bordered by date farms and vacant lots on the majority of the route, with a few commercial and residential structures along 66th Avenue. On the northeast corner of Tyler and 66th Avenue, there are three schools located adjacent to the route: Las Palmitas Elementary School, Toro Canyon Middle School, and Desert Mirage High School. The route is also bordered by the Torres-Martinez Desert Cahuilla Indian Reservation north of 66th Avenue between Harrison Road and Tyler Road and then south of 66th Avenue between Tyler Road and Polk Street. Construction of a new lift station is proposed for the North East corner of Harrison Street and Echols Road, and Lift station 55-21 is located approximately 250 meters (m.) south from the intersection of Polk Street and 64th Avenue.

The CVWD is proposing construction and operation of a gravity sewer pipeline under existing roads, a new lift station, and possible capacity upgrades to lift Station 55-21. The Project will serve approximately 500 residents at the SMHP and the 20-acre TMCC, which includes an office complex and medical facilities. Projected annual average flow to serve both locations is approximately 42,200 gallons per day (gpd). Regional growth is anticipated to be relatively slow as the Project area is comprised primarily of tribal land. Estimated annual average flow based on 40-year growth projections at full system build-out is projected to be 1,320,000 gpd or 13.2 million gallons per day (mgd). The sewer system infrastructure will be designed to accommodate the peak hour flow for full system build-out based on CVWD's Developmental Design Manual.

3.2 Project Area of Potential Effect

Approximately 24,000 linear ft. of gravity pipelines will be installed for the off-site sewer system to provide sewer service to the SMHP and adjacent existing and future developments. The APE includes consideration of the direct and indirect effects of the proposed project. The direct APE has four components: the pipeline route on existing streets outside of SMHP and TMCC, the proposed lift station at Northeast corner of Harrison Street and Echols Road, Lift Station 55-21, and an existing unpaved access road to Lift Station 55-21 (Figure 3.2).

The pipeline route will begin on the southern side of Assessor Parcel Number (APN) 751060026, also known as the SMHP. The pipeline will be installed below existing paved streets with a minimum excavation depth of 5-ft. and may extend beyond 20-ft., depending on the nature of soils and groundwater levels. The width of the trench will depend on the depth since the trenches will have side slopes laid back at 1:1 or 2:1

depending on depth and soils. This APE includes a 2-meter (m.) temporary impact buffer on all sides of the roads.

The pipeline route outside of the SMHP will start at the entrance to the SMHP along Echols Road and continue for approximately 1,115 linear ft. east along Echols Road. The pipeline will then turn to the south and continue 1,345 linear ft. along Harrison Street until the intersection of 66th Avenue. At this point the pipeline will turn to the east and travel for approximately 10,235 linear ft. to the intersection of 66th Avenue and Polk Street where it will connect with the existing Polk Street Trunk Sewer Pipeline. The pipeline will split on 66th Ave and turn south down Martinez Road for 1,897 linear feet where it will split. One portion will run into the TMCC and continue south on Martinez Road for another 530 linear feet. The total length of the APE is approximately 3 linear miles. The 8-in. and 10-in. diameter gravity sewer pipeline proposed for this route will be installed beneath existing paved road. The access roads for the pipeline improvements within and outside of the SMHP will utilize existing paved and dirt roads.

The proposed new lift station construction will occur on the Northeast corner of Harrison Street and Echols Road. The trench for the wet well of the lift station will be 20 ft. deep with an area of 17-ft. x 17-ft. A fence will surround the entire lift station and will measure 70-ft. x 70-ft. with 25-ft. of clearance on all sides.

Access for Lift Station 55-21 is an existing dirt road running north from the intersection of 66th Avenue and Polk Street. The 40-ft. wide dirt road is 4,330 ft. in length and will be utilized as an access road, with no alterations.

Lift station 55-21, is secured with fencing and is located directly to the west of the access road approximately 916 ft. south of 64th Ave. The 60-ft. x 60-ft. site houses the lift station and necessary components. Improvements to this lift station may include capacity upgrades, that would be determined at a later date and as part of a separate project.

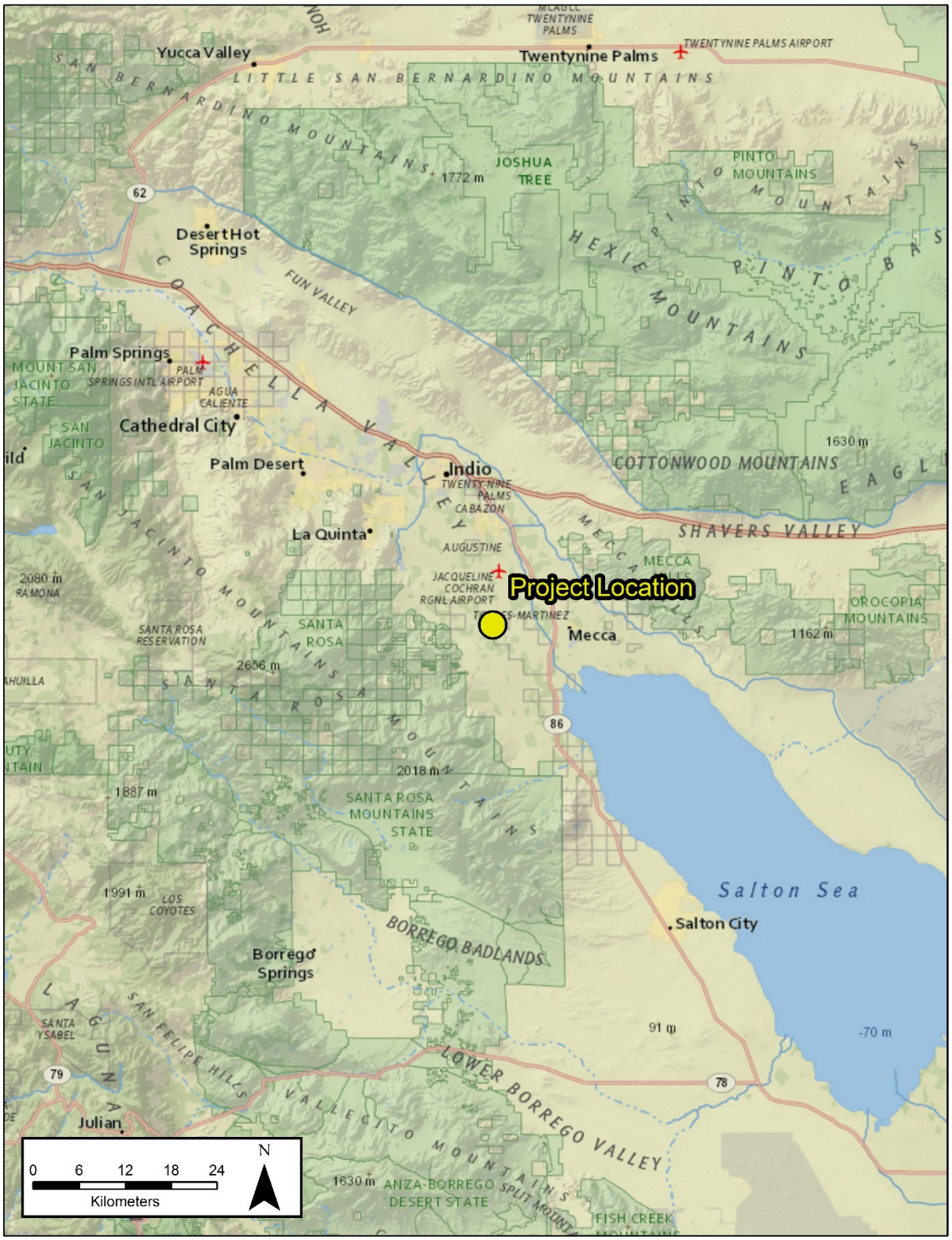


Figure 3-1. Regional Location

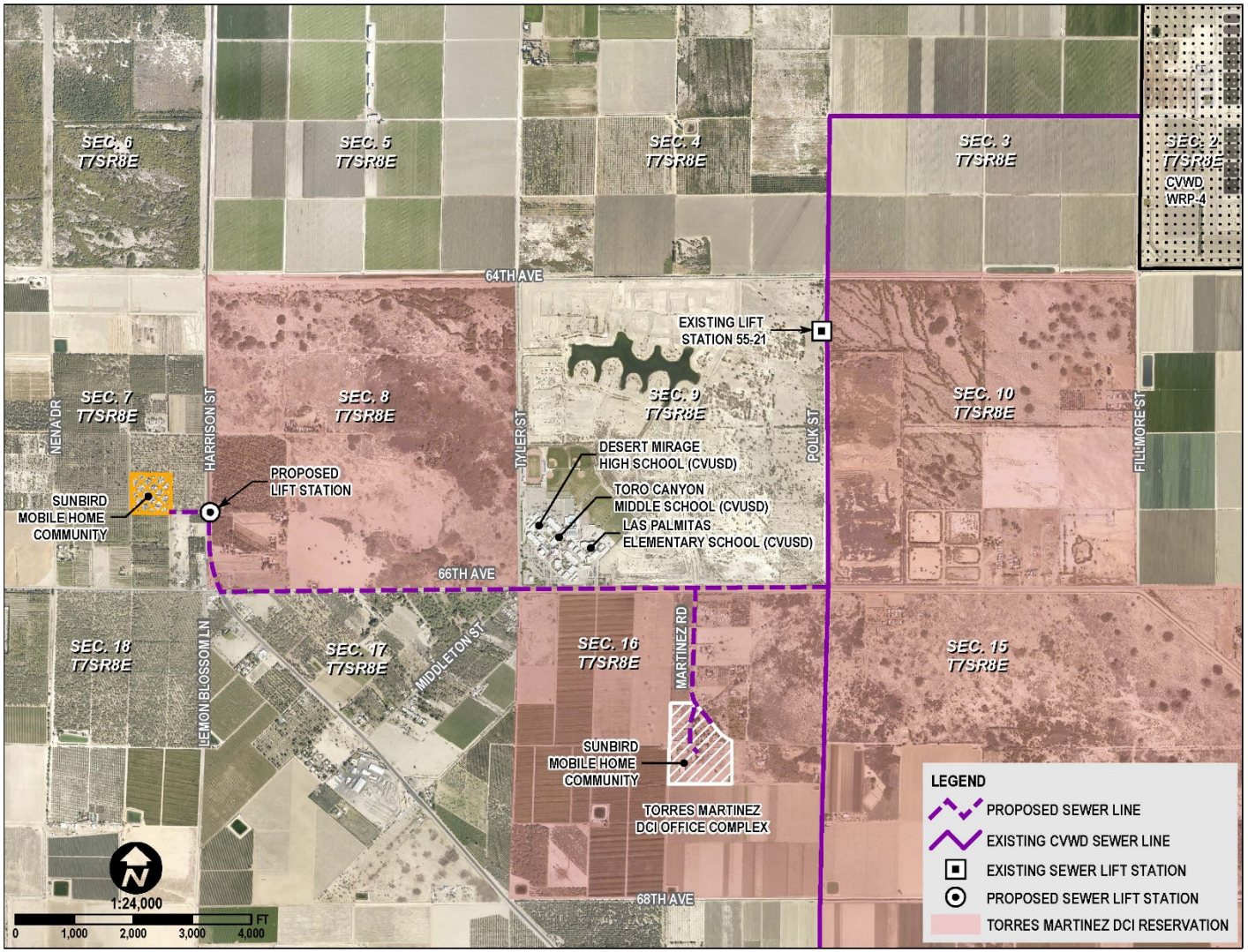


Figure 3-2. Project Vicinity

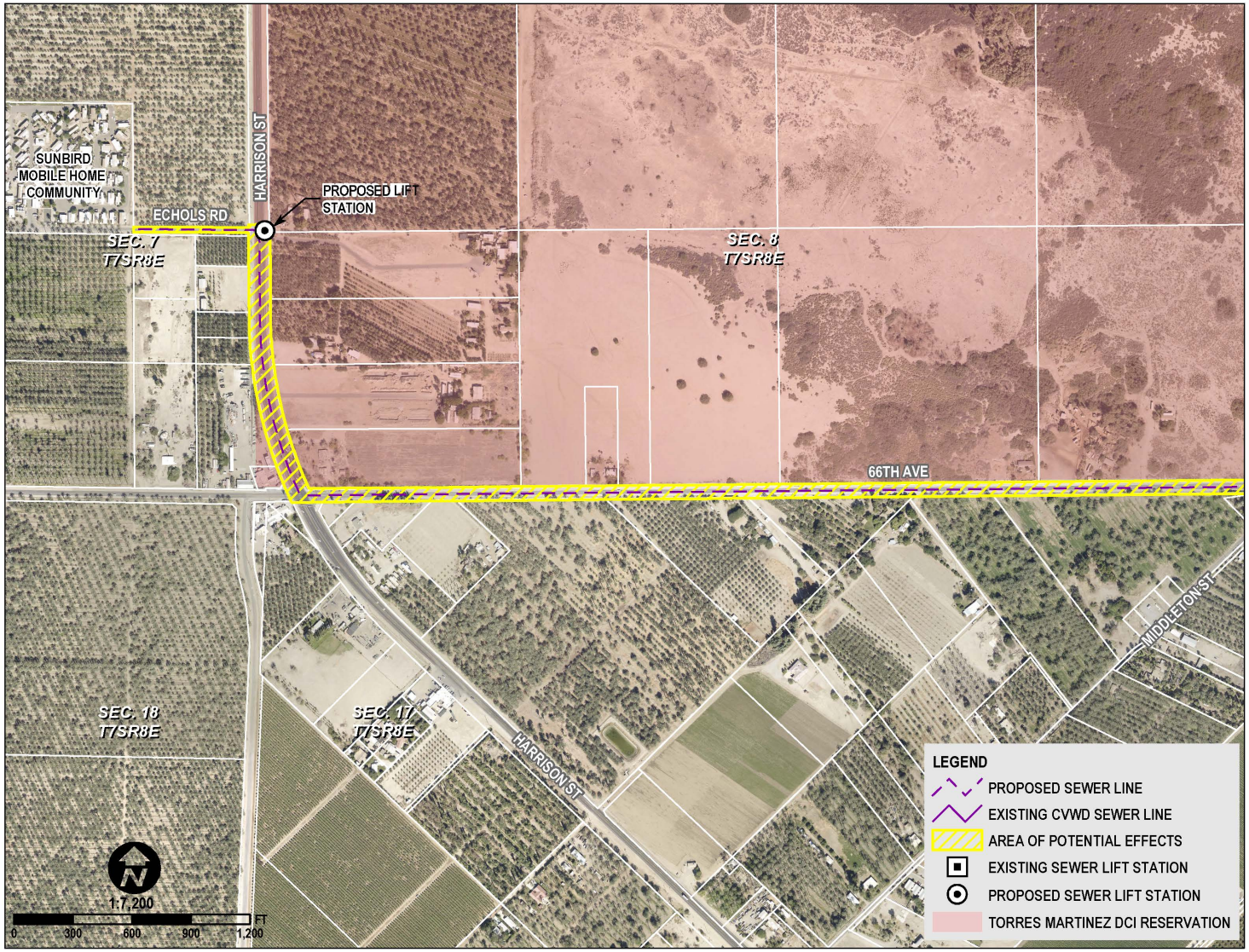


Figure 3-3. APE Map 1 of 3

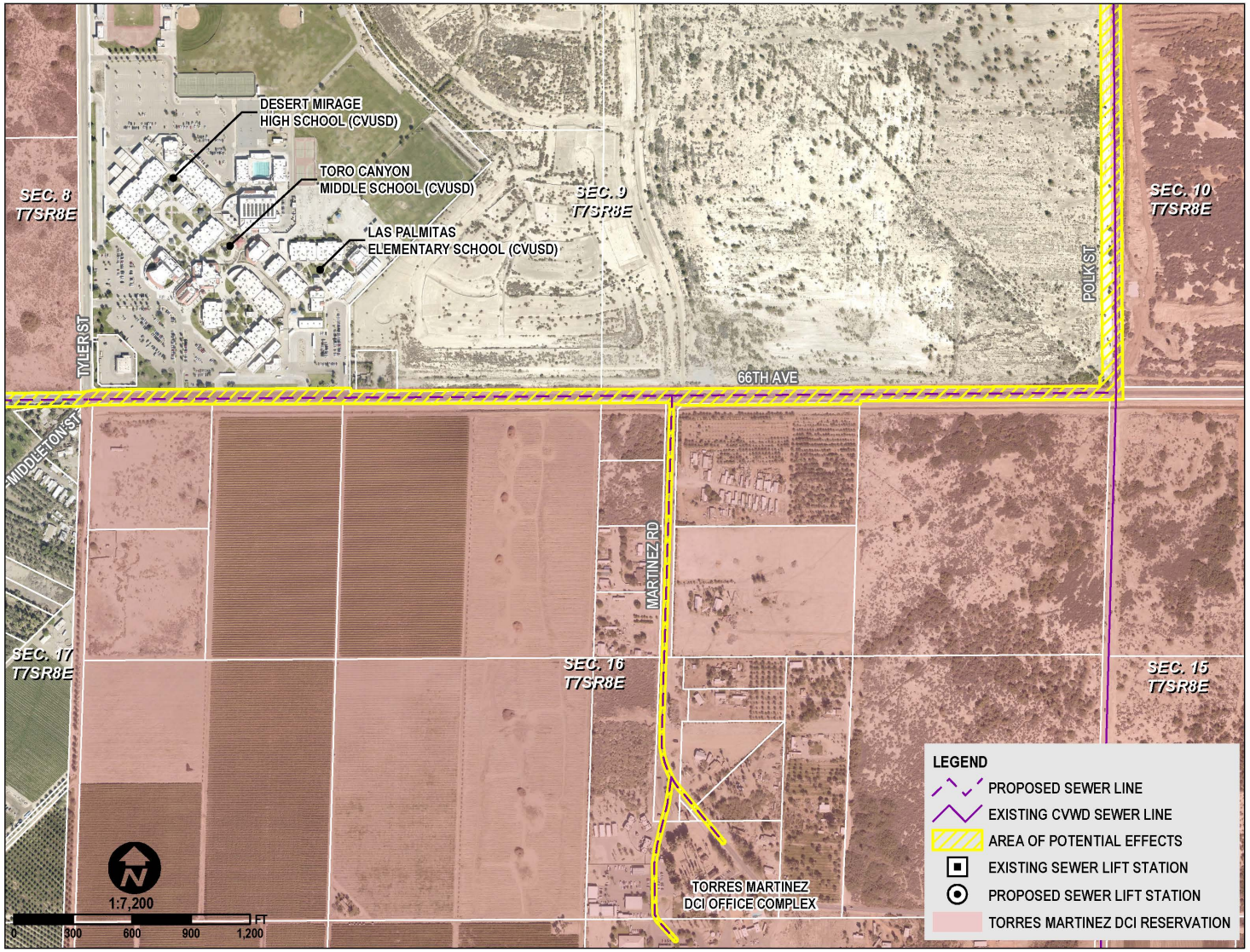


Figure 3-4. APE Map 2 of 3

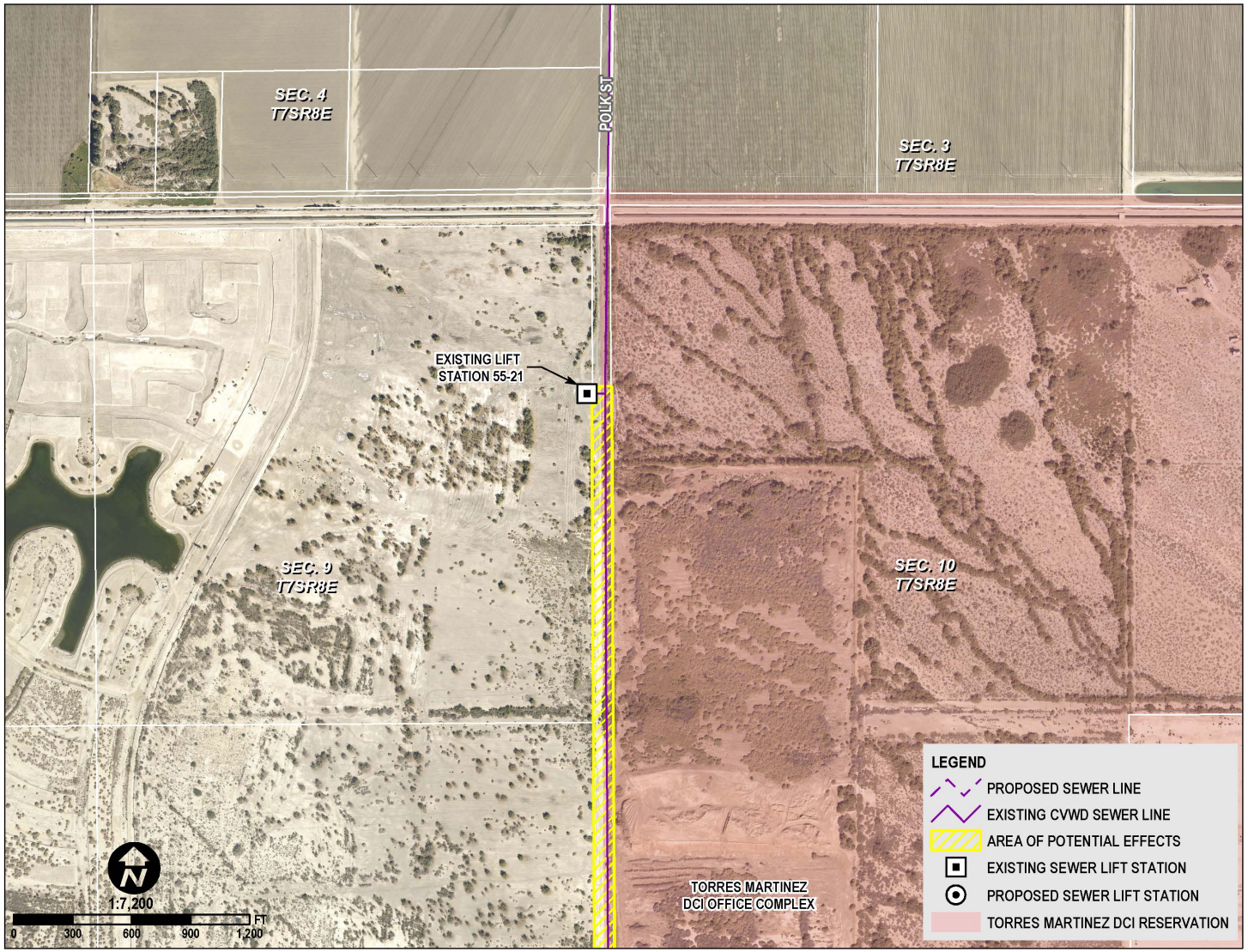


Figure 3-5. APE Map 3 of 3

4. BACKGROUND

4.1 Environmental Setting

The project area is situated at the western edge of the Colorado Desert in the southern portion of the Coachella Valley. The Colorado Desert is a subdivision of the larger Sonoran Desert Ecozone. The Coachella Valley itself extends approximately 45 miles from the San Bernardino Mountains to the Salton Basin. It is bordered by the Peninsular ranges to the southwest, which have an elevation of 3,274-m. above mean sea level (AMSL) at their highest (San Jacinto Peak) and drop sharply to the desert floor below, to 250-ft. below mean sea level (BMSL) at Mecca, which is approximately 6 miles east of the project area. East of the project area are the Little San Bernardino Mountains, which separates the Coachella Valley to the south from the Mojave Desert to the north.

Geologic deposits within the project region are primarily alluvium, dune sand, Pliocene marine, Pleistocene and Quaternary nonmarine deposits, and tertiary and quaternary lake deposits (Tennyson and Apple 2009). The APE is situated in Pleistocene-Holocene alluvium, lake, playa, and terrace deposits that are mostly unconsolidated and semi-consolidated nonmarine deposits. The soil within the APE is dominated by Indio very fine sandy loam and Gilman fine sandy loam. The Indio very fine sandy loam is found on alluvial fans and is considered prime farmland if properly irrigated and drained. The Gilman fine sandy loam is also found on alluvial fans and is considered prime farmland if irrigated (USDA 1973).

As the project area is comprised of mostly alluvial fans, resources for tool stone manufacture are limited. Near to the southern end of the Salton Sea at Obsidian Butte, there are sources for obsidian, rhyolite, and Wonderstone and sandstone is available from the Brawley Formation (Tennyson and Apple 2009). Additional materials such as chert, jasper, and chalcedony may have been found regionally in fluvial deposits.

Water sources in the area include the Whitewater river, a small permanent stream which is the major water source running through the central valley. Its headwaters are in the San Bernardino Mountains and its terminus in the Salton Sea. There are also several small streams that form in the mountain on either side of the valley that drain into the valley bottom. There are numerous springs in the area that are usually marked by fan palm oases (Mirro and George 2011).

A major feature of this region is the Salton Basin. Periodic infilling and subsequent desiccation of this basin greatly impacted the local environment, turning desert biomes into lacustrine habitats and back again (Schaefer and Laylander 2007). Periods of infilling into the Salton Basin created Lake Cahuilla (also known as Lake Le Conte, Ancient Lake Cahuilla, and Blake's Lake) and occurred mainly during the Pleistocene and the last 2,000 years of Holocene, when five separate intervals of infilling and desiccation have been identified from AD 700-1665 (Laylander 1995; Schaefer 1986; Waters 1981). Episodic flooding of the Colorado River would swell the lake to an altitude of 20-m., at which height the waters would breach the Cerro Prieto delta and discharge into the Gulf of Mexico (Waters 1981). After inflow from the Colorado River ceased, the lake would begin to desiccate over a period of 60 years (Wilke 1976), drastically changing the landscape and the lacustrine habitats that formed as a result of the lake. Another more recent occurrence of this infilling took place in AD 1905, when the irrigation canals constructed to redirect waters into agricultural areas were inundated and over 350,000 acres of land was flooded (Chandler et al. 2003; Porras 2017). The dynamic nature of Lake Cahuilla would have had an impact on the hunter-gatherer occupants of the region and will be discussed in the "Cultural Setting" section.

Both the climate and the topography of the Coachella Valley and the surrounding region varies, creating biodiversity in both flora and fauna in the region. The Coachella Valley vegetation is typical for the lower

elevations of the desert southwest. Due to the arid conditions, vegetation cover tends to be sparse and comprised of Sonoran creosote brush scrub, desert saltbush scrub, dry desert wash woodland, desert aeolian sand fields, and Sonoran cottonwood-willow riparian forest vegetation (DOI 2006). There are three major exploitable biotic zones within the region that would have been utilized by the prehistoric and historic inhabitants of the area, mainly the Cahuilla Indians: Lower Sonoran Life Zone, Upper Sonoran Life Zone, and Transitional Sonoran Life Zone (Bean and Saubel 1972). There is an additional biotic zone in this region, Canadian-Hudsonian Life Zone; however, this region is above 7,000-ft. in elevation and was not utilized regularly by the region's occupants so will not be discussed. The below discussion is based on the works of Bean and Saubel (1972), Tennyson and Apple (2009), Porras (2016), and Mirro and George (2011).

The Lower Sonoran Life Zone occurs on the desert floor to about 3,500-ft. in elevation. This area includes the Alkali Sink, Saltbush Scrub, Desert Dry Wash Woodland, Creosote Bush Scrub, Enriched Desert Scrub, and Fan Palm Oasis communities (Porras 2016). With low rainfall levels that average 4-in. per year, this zone supports xerophytic plant communities, including the dominant Creosote bush (*Larrea tridentate*) with saltbushes occurring where the soil is more alkaline (Bean and Saubel 1972; Tennyson and Apple 2001). Washes within this region have a greater biodiversity of flora with paleo verde (*Cercidium floridum*), ironwood (*Olneya tesota*), catclaw acacia (*Acacia greggii*), and smoke trees (*Psorothamnus spinosa*) present. As the topography changes to the well-drained slopes adjacent to the desert floor, the plants communities shift to frost-sensitive plants such as ocotillo (*Fouquieria splendens*), barrel cactus (*Ferocactus splendens*), cholla (*Opuntia* spp.), century plant (*Agave deserti*), creosote bush, and Mojave yucca (*Yucca schidigera*) (Mirro and George 2001). Bean and Saubel (1972) estimate that 40 percent of the plants species exploited by the Cahuilla Indians can be found within this biotic zone.

Many animals within the Lower Sonoran Life Zone region have adapted to spending much of the day underground due to diurnal high temperatures, so small burrowing rodents such as such as round-tailed ground squirrel (*Spermophilus tereticaudus*), white-tailed antelope squirrel (*Ammosphermophilus leucurus*), desert and Merriam kangaroo rats (*Dipodomys merriami*), and desert pocket mouse (*Perognathus penicillatus*) are common. Black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audoboni*), and kit fox (*Vulpes macrotis*) are also wide spread within the region (Porras 2016; Apple and Tennyson 2001), with desert bighorn sheep (*Ovis canadensis*), Sonoran pronghorn antelope (*Antilocapra Americana sonorensis*), and coyote (*Canis latrans*) found in higher elevations off the desert floor. These desert regions are also home to numerous reptiles, including a variety of snakes and the desert tortoise (*Gopherus agassizi*) and chuckwalla (*Sauromalus obesus*), which were known to be economically important species for the Cahuilla Indians who occupied the region.

The Upper Sonoran Life Zone begins at the Pinyon-Juniper Woodland biome roughly 3,500-ft. in elevation and extended to 5,000-ft. in elevation. The higher average rainfall of 15-in. per year supported a lush community of Pinyon pine (*Pinus monophylla, P. quadrofolia*) and California juniper (*Juniperus californica*), the dominant plant species of this zone. Chaparral belts are dominate, however, on the western slopes of the San Jacinto and the foothills of the San Gorgonio Pass (Bean and Saubel 1972). Also present in this zone are manzanita (*Arcotstaphylos adans*), oak (*Quercus spp.),* cottonwood (*Populus fremontii*), yucca (*Yucca s*pp.), cholla (*Optuntia* spp.), and agave (*Agave* spp.). Animal resources within this zone overlap with the lower elevations and include black-tailed jackrabbit, ground squirrel, desert bighorn sheep and mule deer (*Odocoileus hemionus*). Bean and Saubel (1972) estimate that over 60 percent of the plant species utilized by the Cahuilla are found in this zone.

The Transitional Life Zone contains many of the useful forested area for the Cahuilla Indians as this region's average rainfall of 20 to 30 inches supports coniferous forests with oak groves (*Quercus* spp.), including the economically important black oak (*Quercus kelloggii*), ponderosa pine (*Pinus ponderosa*), Jeffery pine (*Pinus jeffreyi*), incense cedar (*Calocedrus decurrens*), bigcone spruce (*Pseudotsuga*

macrocarpa), manzanita, mountain mahogany (*Cercocarpus* spp.), and elderberry (*Sambucus* spp.). Both ground squirrel and mule deer are found within this zone (Mirro and George 2011; Bean and Saubel 1972; Apple and Tennyson 2001). Bean and Saubel (1972) estimate that 15 percent of the plant species utilized by the Cahuilla Indians are found in this biome.

An important consideration for resources within the broader region are the lacustrine habitats that were available when Lake Cahuilla was present during periods of infilling from the Colorado River. The presence of this lake would have turned some desert environments to lacustrine habitats that supported a vast area of resources not typical to the desert and mountain communities discussed above. Relatively stable periods of high stands would have fostered a shallow water marshlands habitat that could have supported waterfowl, fresh water fish, and shellfish. Shellfish species of *Anodonta dejecta, Anodonta californiensis*, *Physa humerosa*, *Tyronia protea*, *Fontelicella longuinqua* (Apple et al. 1997) have been recorded archaeologically and fish species native to the Colorado River, including razorback sucker (*Xyrauchen texanus*), bonytail (*Gila elegans*), Colorado squawfish (*Ptychocheilus lucius*), and pupfish (*Cyprinidon*), would have populated Lake Cahuilla (Porras 2016; Wilke 1978). Lake Cahuilla would have also supported numerous species of water fowl such as eared grebe (*Podiceps nigricollis*), lesser scaup (*Aythya affinis*), and canvasback (*Aytha valisineria*) as well as freshwater marsh plants such as tule (*Scirpus*), reed (*Phragmites australis*) and cattail (*Typha*) (Porras 2016; Tennyson and Apple 2009).

4.2 Cultural Setting

Although several decades of study has been conducted on cultural development in the Colorado Desert region, it still remains poorly understood. Ethnographies and historic documents have provided some clarity, but corroborating archaeological evidence has been difficult due to the lack of substantial subsurface deposits in the desert setting (Schaefer 1994). As such, a cultural chronology for the region has fluctuated over the years, but as more evidence has been recovered from both academic and regulatory archaeology, a more refined chronology is available.

4.2.1 Prehistory

The prehistoric cultural chronology described below follows Schaefer (1994) for the Colorado Desert and is based largely on the northern Colorado Desert region (Love and Dahdul 2002). The original framework for this chronology was based on Rogers (1966), but has been refined and revised due to additional research in the region.

Paleoindian Period (ca. 8000-10,000 to 6000 BC)

This early period of habitation in the desert region is not well understood due to a lack of diagnostic artifacts and reliable dates (Schaefer 1994). Therefore, the Paleoindian period is defined by the San Dieguito Complex described by Rogers (1966), which shares many cultural characteristics with the Lake Mojave Complex of the Great Basin and Mojave Desert (Porras 2016). The small mobile hunter-gatherer bands that are thought to have lived in this area during the Paleoindian Period likely exploited small and large game and collected seasonally available plants (Schaefer 1994). Much like the Lake Mojave Complex, groundstone is usually absent from site assemblages, but the lithic toolkit includes larger bifaces including fluted and Silver Lake points as well as scrappers and crescents (Tennyson and Apple 2009; Chandler et al. 2003). Many sites dating to this period consist of cleared circles, rock rings, and geoglyph types (Schaefer 1994) and settlement patterns focused on mesas and terraces that overlook large washes where plants and animal resources were available.

Early Archaic (6000 BC to 2000 BC)

Also known as the Pinto Period in the Mojave Desert (Warren 1984), the Early Archaic Period in the Colorado Desert region is lacking the abundant archaeological material that helps define this time period elsewhere in southern California. The low population densities of the Paleoindian Period appears to continue into the Early Archaic and left little traces of their presence (Schaefer 1994; Love and Dahdul 2002). It was during this Early Archaic Period that the Millingstone Horizon can been seen within Southern California, and manos and metates are found in sites further to the west. Characteristic of the Pinto Period in the Mojave, Pinto Basin points are found near ephemeral spring and lakes and six Pinto points have been identified in the Salton Sea Test Base (Apple et al. 1997).

Late Archaic (2000 BC to AD 500)

Archaeological evidence from this time period is largely relegated to a limited number of sites that contain evidence of a low population that likely used rockshelters and other protected locales as home bases for a wide ranging foraging pattern (Schaefer 1994). The Indian Hill rockshelter in Anza-Borrego remains the only well dated site with substantial cultural material, including 11 rock-lined cache pits, 21 Elko Eared dart points as well as other flaked tools, millingstone tools, and three inhumations. Another rockshelter near Tahquitz Canyon also produced rock-lined caches, mano and metates, and flaked tools, but no temporally diagnostic artifacts or datable material (*ibid.)*. The assumed pattern of low population densities of highly mobile hunter-gatherers who adapted to seasonally available resources is consistent with patterns seen elsewhere is southern California at this time.

Late Prehistoric/Patayan Period (AD 500 to 1850)

This period, starting 1,500 years ago, is one of the first in the Colorado Desert region to have substantial archaeological material from which to define a cultural complex. It was during this period that the bow and arrow and ceramics were introduced to California. Researches have suggested that the higher population densities assumed for the region during this time were in response to the infillings of Lake Cahuilla (Cleland 1999; Wilke 1978).

The Patayan Cultural Complex is attributed to the Late Prehistoric Period and is divided into three phases. The Patayan I period starts about 1,200 years ago and coincides with an infilling of the Salton Basin that created an oasis-like lacustrine environment at about 12-m. AMSL (Schaefer 1994). Many cultural remains from this time period are found around this relic shoreline as the hunter-gatherers from the Colorado River, Mojave Desert, and the Peninsular Range flocked to this region to exploit the shellfish, fish, waterfowl, and other economically important resources available in and around the lake (*ibid.)*. The cultural traces from this time may have been influenced by the various groups found in the region as new projectile point types, including Cottonwood Triangular and Desert Side Notched, and buffware and brownware pottery manufactured using the paddle and anvil technique have been identified.

Another infilling of Lake Cahuilla occurred around 950 years ago and is associated with the Patayan II Period (AD 1050 to 1500) (Apple et al. 1997; Schaefer 1994). This period is defined by a new pottery type that suggested local manufacture (Love and Dahdul 2002) and included flat bowls, geometric designs and a “stucco” finish (Chandler 2003 et al.:18; Porras 2016). While settlement still occurred around the lake, movement to the eastern and western regions of the dessert are also noted during this time (Love and Dahdul 2002). A recession of Lake Cahuilla ushered in the Patayan III Period (AD 1500 to Historic Period) (Love and Dahdul 2002). Sites dating to this time period are typically associated with the shoreline and comprise the majority of the sites recorded from the Patayan Period. Colorado buffware ceramics are common.

The Late Prehistoric Period in general in the Colorado Desert region is characterized by diversified settlement patterns and adaptive strategies, with short term habitation sites found near to maximal and recessional shorelines as well as inland regions. Populations took advantage of Lake Cahuilla when it was present and adapted to lake recessional periods, not by a "mass exodus", but by an adjustment to subsistence patterns (Schaefer 1994:74).

4.2.2 Ethnography

The project APE falls within the ethnographic boundaries of the Cahuilla ancestral territory (see Figure 4-1). This Takic-speaking group utilized a diversity of biomes in the region for a year-round food supply that ranged from the desert floor to the upper elevations of the San Bernardino Mountains. Due to the dispersed nature of their resources, the Cahuilla remained hunter-gatherers even after European contact, although some researchers have suggested small-scale flood plain agriculture for those groups living near to the Colorado (Lawton and Bean 1968). Although separated from neighboring groups by mountains and the desert, the Cocopa-Maricopa trail bisected their territory and was likely used to connect them to their neighbors through trade, marriage, ritual, and war (Bean 1978; Morrato 1984).

The social organization of the Cahuilla strengthened their trade ties and provided for cooperation in defense of their territory. Their political-ritual-corporate units were comprised of three to ten lineages, and two exogamous moieties called the Wildcats (*túktem*) and the Coyotes (*ʔístam*). Each lineage owned a village site and the resources associated with that site, but cooperated with the other lineage for access to food resources and for ritual purposes. Although Cahuilla territory had an uneven distribution of resources as discussed in the "Environmental Setting" section, settlement patterns and trade relationships allowed the Cahuilla to thrive in their environment. Permanent villages were located in both the higher and lower elevations and were near to water sources as well as clusters of mesquite. Bean et al. (1991:7) recounts elder Cahuilla informants who described movement from the higher to lower elevations villages during the cold winter months, and the lineages traded with each other and ensured the access to resources. This cooperative arrangement was strengthen by the marriage ties between the moieties that forbade anyone within five generations of belonging to the same moiety (Mirro and George 2011). This ensured that relatives were spread out among the villages and environmental biomes.

Subsistence patterns for the Cahuilla can be described as logistical hunter-gatherers (Binford 1980). Although mostly sedentary, they still hunted and gathered their food and did not adopt the agricultural lifestyle of their neighbors in the Southwest. Acorns were a staple food and the major reason for their more sedentary lifestyle, but an array of other food stuffs were integral to the Cahuilla diet. Large and small mammals found in the desert and in lacustrine environments would have been hunted and numerous species of plants were gathered from various habitats in the region (Bean 1978). Their tool kits reflected their subsistence patterns and included bow and arrows, nets, and traps for hunting mammals and stone traps, nets, hooks, and lines for capturing fish. Gathering plants required minimal material, but baskets and skin or woven grass bags were important for transport as were asphaltum lined containers for transporting water. Mortars and pestles were used for grinding acorns and manos and metates were likely used for a variety of tasks including grinding small seeds as well as small mammals, such as rats and rabbits (Bean and Saubel 1972; Padilla 2017).

Several expeditions taken in the 19th century left written records detailing interaction with and observations of the Cahuilla that provide a picture of Cahuilla lifeways during this period in history. In the diary of José María Estudillo, he notes small scale horticulture with small patches of corn, pumpkins, melons, and watermelon planted near to a Cahuilla Village (Wilke and Lawton 1975). Along on a Pacific Railroad expedition in 1853, a geologist named William Phipps Blake also noted some agricultural practices among the Cahuilla observing abundant corn, barley, and vegetables near to their villages (Wilke and Lawtron 1975). Both early expeditions also noted the presence of large walk in wells, some 25-ft. deep, and other

areas where there appeared to be enlarged springs. A U.S. Government survey conducted from 1855-56 noted that the Cahuilla appeared to be irrigating crops by building adobe enclosures with small opening for water around the natural wells at Agua Dulce (Wilke and Lawton 1975). Many of the expeditions also noted that the Cahuilla had large villages with thatch-roofed homes that were hidden in high stands of mesquite. These villages were noted to be near to natural springs. Though seemingly settled villages were present throughout the Coachella Valley, it was not unusual for the Cahuilla to relocate due to food scarcity, conflict, or death (Wilke and Lawton 1975).

Because of their position in the interior region of California, the Cahuilla remained largely isolated from European contact until the early 1800s when *asistencias* were established in the Coachella Valley and some Cahuilla were baptized at Mission San Gabriel in Palm Springs. Although some Cahuilla worked in the *asistencia* system, they remained largely wary of the Spanish and attempted to retain control of their territory through political consolidation under the leadership of a few powerful individuals such as Juan Antonio, Antonio Garra, and Chief Cabazon (Porras 2016). Although this strategy was effective for some time, the introduction of European diseases reduced the indigenous population by at least two-thirds and the movement of non-Indians into the area further threatened their hold on their ancestral lands. By 1877, individuals who wanted to remove Indians from the lands that were economically valuable prevailed and were able to establish the Indian reservation system (Bean et al. 1991). Within the Coachella Valley, these reservations include Augustine, Agua Caliente, Cabazon, Morongo, and Torres-Martinez (Love et al. 2002).

4.2.3 History

The history of the Colorado Desert region can be understood through the accomplishments of exploration communication, and irrigation. A harsh, arid environment, the Colorado Desert region presented difficulties for those that did not understand how to effectively exploit the regions resources, as the native inhabitants did. However, establishment of trails, then of railways and other forms of travel into and out of the region, greatly increased visibility of the region and the resources that it had to offer. A detailed account of the history of this region is provided in von Till Warren (1981:85-105) and the below abbreviated account is taken from this more detailed history.

As von Till Warren (1981: 83) states, “The story of the Colorado Desert is embodied in two major themes: Communication and Exploitation.” In order to realize the latter theme however, the former had to be established. Although a seemingly easy task, creating a system of communication in the region was difficult due to the “dry and foreboding deserts of the interior” (von Till Warren 1981:84). During the Spanish/Mexican Period (AD 1540-1848), communication and travel into and out of the region was accomplished through a series of trails. The prehistoric inhabitants of this region created an array of trails that were used for trade, travel, and commination for thousands of years. During the historic period, the need to connect Sonora to the missions that had been established along the coast from 1769-1771 drove the need to find an overland route, which was called the Yuma Route. “Discovery” of this route by the Spanish - accomplished only with the help from the indigenous population that provided information on trails and resources – helped establish two small, short lived settlements, Mission la Purisma Concepcion and Mission San Pedro y San Pedro de Bicuner. Early European mining was conducted with the assistance of these settlements, but they were burned to the ground in 1781 and the Yuma route was closed until 1823.

No major excursion were accomplished again until the development of the Cocomaricopa Trail (also known as the Halchidoma Trail), named after the Cocomaricopa Indians who traveled from the Colorado to San Gabriel Mission along this route. Suitable only for foot traffic, this route started east of Blythe, following the route of Interstate 10 across the Chuckwalla Valley, continuing through Mecca-Indio and Coachella Valley to the San Gorgonio Pass. In the Coachella Valley, this route is located south of the project area from Mecca to the village of *Mauulmii*, where it turned north and followed the mountain front and is lined with Cahuilla village sites (Mirro and George 2011).

In 1862, gold was discovered in Yuma, Arizona and a route to connect California to this area was desired. Determined to identify a quicker route to Yuma than the Yuma Road, a Los Angeles resident, William Bradshaw, trekked out into the desert and identified what is now known as the Maricopa-Bradshaw Route. This encompassed parts of the Yuma and Cocomaricopa trails, thanks to information provided by the indigenous residents of the region (Lech 2004:93). This route became popular over the coming years as a stagecoach route to connect California with the Yuma mining camps and as a mail route that was serviced by Colorado Stage, Express Line, the La Paz Express, to name a few (Lech 2004:94). Due to the lack of water in the region along the route, business and residents eager to maintain the connection with the mining towns dug wells along the route, including the Chuckwalla Well.

It was not until 1877 that the first railroad was built that traversed the western Colorado Desert. The Southern Pacific Railroad connected the San Gorgonio Pass with Yuma along the Salton Sea (Mirro and George 2014). Up through the 20th century, a network of branch lines and spurs were constructed that effectively connected Southern California regions to each other and to areas in Arizona. These routes were vital in opening up the region to more development and commerce and such later developments as routes for automobiles, like the opening of Route 66 between Indio and Blythe in 1936 (von Till Warren:90, 93).

All of the routes established in the Colorado Desert region allowed for development of homesteads and farming and ranching as well as extraction of resources found in this arid region. Mining started early in the region, but saw its heyday from the 1870 to 1890 when numerous gold and iron mines were worked. The remains of these mining camps can still be seen today as can the infrastructure associated with them. Miles of tunnels, water systems, roads, rail lines and trails were built to support the mining operations (von Till Warren:97). In the 20th century, mining continued and expanded to other non-precious mineral such as fluorite, manganese, uranium, and copper.

Although the agriculture industry did not fully develop until large scale irrigation was brought to the region in the 1900s, the Coachella Valley did have some farming prior to this through the presence of artesian wells. In the beginning of the 20th century, Coachella Valley farmers planted dates, figs, and grapes. Due to the large amount of water needed for these crops, particularly dates, the water table became depleted, creating an urgent situation for management. It was during this time that the Coachella Valley Water District was developed to promote water conversation and replenish the water table (von Till Warren 1981:98). It was, however, the construction of the All American Canal within the Coachella Valley in 1948 that created a boom time for agriculture in the region. A portion of this canal within the project APE was constructed between October 25, 1949 and July 6, 1951 (George 2016).

Torres Martinez Reservation

A detailed summary of the creation and expansion of the Torres Martinez Cahuilla Indian Reservation can be found in Eddy et al. (2011). The below abbreviated account is taken from the more detailed summary.

The land on which the Torres Martinez Reservation currently sits was set aside through executive order by President Grant on May 15, 1876. This order was in response to a survey conducted by Powell and Ingalls (1876) indicating the need to establish reservations for the numerous Native American communities in the region. The original land was a small, 640 acres plot of land. Deemed to be insufficient, the reservation land holding was expanded in 1891-1909 to 45 square miles. This area was then referred to as Toro. In the early 1900s, the land around where the TMCC is now was referred to as Martinez. There were numerous buildings present here, including a church and a school. This school and other structures formed a community center that was used for tribal gatherings. In 1973, these structures were placed on the NRHP as contributing elements to the Martinez Historical District (King 1972). In the 1970s and again in the 1990s, additional administrative buildings were added near to the original historic structures.

Important Southern California Indian villages relative to modern cities. Major Indian territories are also shown.

Adapted from *Handbook of the Indians of California* by Alfred Louis Kroeber, Bureau of American Ethnology, Smithsonian Institution, 1976.

Figure 4-1. Southern California Tribal Territories.

5. METHODS

5.1 Pre-Field Research

Archaeologist Amy Gusick, along with project proponent Boykin Witherspoon and Project Engineer Roger Shintaku, and graduate student assistants, conducted a site visit of the planned route and of Lift Station 55-21 on 13 July 2017. On 20 July 2017, Amy Gusick and a graduate student assistant, Karla Espinoza, and on 11 October 2018, Adriane Gusick conducted record searches at the Eastern Information Center (EIC) housed at the University of California, Riverside. These records searches identified all archaeological and historical resources and all previous reports within one-half mile of the project APE (Appendix A). On 27 July 2017 and again on 11 October 2018 requests were submitted to the NAHC for a search of their records of sacred sites. The results of these searches are discussed below as well as the consultation with the appropriate Native American groups.

5.1.1 Previously Recorded Cultural Resources Studies

The records search results indicate that 30 cultural resource investigations have been conducted within the half-mile search radius of the project area between 1979 and 2014. Of these, 17 studies are mapped as overlapping at least a portion of the project area. Seventeen of these reports (RI-00584, RI-00661, RI-01373, RI-1374, RI-03212, RI-3245, RI-03407, RI-05115, RI-07542, RI-07853, RI-07950, RI-08166, RI-08325, RI-08492, RI-08819, RI-09139, RI-9992) cover a portion of or abut the project APE. Only two of these reports is from within the last five years. Most of the studies consisted of small investigations covering less than 10 acres or less than 1 linear mile along paved roads. Investigations within one-half mile of the project area are listed below in Table 5-1.

Table 5-1. Previously Recorded Cultural Resources Studies Within One-Half Mile of Project APE

Report Number	Authors	Date	Title	Proximity
Riverside County Studies				
RI-00584	Daniel F. McCarthy	1986	Environmental Impact Evaluation: An Archaeological Assessment of Tentative Parcel 21234, South of Indio in Riverside County, California	APE
RI-00661	L. Kyle Napton and Elizabeth Anne Greathouse	1979	Archaeological Reconnaissance on the Torres-Martinez Indian Reservation, Riverside County, California	APE
RI-01092	Alan Davis and J.D. Swenson	1980	Environmental Impact Evaluation: An Archaeological Assessment of the Latin Lady Ranch (Tentative Parcel 17141)	½ mile
RI-01373	American Pacific Environmental Consultants	1981	A Cultural Resource Survey and Evaluation of the Torres-Martinez Indian Reservation, Riverside County, California	APE
RI-1374	A.Pigniolo and M. Baksh	1999	Archaeological Survey Report for the Torres-Martinez Tribal Community Center and Water System Project, Torres-Martinez Indian Reservation, Riverside County, California	APE

Table 5-1. Previously Recorded Cultural Resources Studies Within One-Half Mile of Project APE

Report Number	Authors	Date	Title	Proximity
RI-03212	Kielusiak, Carol	1991	An Archaeological Assessment of a 40-Acre Parcel within the Ibanez Farm Property, Torres-Martinez Reservation, Riverside County, California	APE
RI-3245	Van Horn, David, White, Laurie, White, Robert	1990	Cultural Resource Sensitivity Overview for the Coachella Valley Enterprise Zone	APE
RI-03407	Keller, Jean	1991	An Archaeological Assessment of Conditional Use Permit 3147	APE
RI-03835	Becker, Kenneth M. and Anne Duffield-Stoll	1994	Cultural Resources Reconnaissance of the Kohl Ranch, Riverside County, California	½ mile
RI-05115	Brown, Joan C. and Stephen O'Neal	2005	Cultural Resources Reconnaissance of a 440 Acre Parcel for the Kohl Ranch Phase I Project, Riverside County, California	APE
RI-05350	Michael Brandman Associates	2001	Cultural Resource Assessment for Sprint PCS Facility RV54XC501A (Recycling Center Site), Thermal, Riverside County, CA	½ mile
RI-05351	Michael Brandman Associates	2000	Record Search Results for Sprint PCS Facility RV54XC501A (Recycling Center Site), Thermal, Riverside County, CA	½ mile
RI-05708	Billat, Lorna`	2005	New Tower ("NT") Submission Packet for Project HWY 86/CA-5654A	½ mile
RI-06615	Tang, Bai "Tom", Michael Hogan, Deirdre Encarnacion, and Daniel Ballester	2006	Historical/Archaeological Resources Survey Report: Thermal Street, Water, and Sewer Improvements, Near the Community of Thermal, Riverside County, California	½ mile
RI-07542	Tang, Bai "Tom", Michael Hogan, Josh Smallwood, and Daniel Ballester	2007	Historical/Archaeological Resources Survey Report: The Crossings at Middleton Project, Near the Community of Valerie, Riverside County, California	APE
RI-07853	Tang, B. Tom	2008	Letter Report: Addendum to Historical/Archaeological/Paleontological Resources Survey Report Thermal Street, Water, and Sewer Improvements In and near the Community of Thermal, Riverside County, California. CRM TECH Contract #1880/2447	APE

Table 5-1. Previously Recorded Cultural Resources Studies Within One-Half Mile of Project APE

Report Number	Authors	Date	Title	Proximity
RI-07950	Brock, James	2005	Phase I and Phase II Cultural Resource Assessment for the Off-Site Sewer Line, Mountain View Estates Mobile Home Project, Oasis Area of Unincorporated Riverside County, California	APE
RI-08166	Michael Hogan and Bai Tang	2008	Archaeological Testing and Evaluation Program Tentative Parcel Map No. 36034	APE
RI-08187	Victoria Avalos	2003	Letter Report: Cultural Resource Assessment for AT&T Wireless Site # C971, Thermal, Riverside County, CA	½ mile
RI-08325	Joan George, Vanessa Mirro, and David Earle	2009	Phase I Cultural Resources Assessment for the Mountain View Estates Mobile Home Park Domestic Water and Sewer Project, Unincorporated Riverside County and Torres Martinez Indian Reservation, California.	APE
RI-08360	Bai "Tom" Tang, Deidre Encarnacion, Daniel Ballester, and Laura H. Shaker	2009	Identification and Evaluation of Historic Properties: Agua Azul Project, Assessor's Parcel No. 749-320-002, Mecca Area, Riverside County, California.	½ mile
RI-08492	Vanessa Mirro, Joan George, and Dennis McDougall	2010	Phase I Cultural Resources Assessment for the Sunbird Mobile Home Park Water Supply Project, Riverside County, California	APE
RI-08558	Bai "Tom" Tang and Michael Hogan	2010	Historical/ Archaeological Resources Survey Report: The Crissings at Thermal, 100 Palms Area, Riverside County, California	½ mile
RI-08819	John J. Eddy, Michael Mirro, and David Earle	2010	Geophysical Survey and Phase II Testing and Evaluation of Feature 1 (CA-RIV-9027; 33-017371) within in the Martinez Historical District (NRD 1292): Mountain view Estates Mobile Home Park Domestic Water and Sewer Project	APE
RI-09064	Steven J. Crouthamel	1994	An Archaeological Survey on the Torres Martinez Indian Reservation of Eight Scattered House Sites, CA-80-61, in Riverside County, California	½ mile

Table 5-1. Previously Recorded Cultural Resources Studies Within One-Half Mile of Project APE

Report Number	Authors	Date	Title	Proximity
RI-09134	Michael Brandman Associates	2005	Cultural Resource Survey and Phase 2 Testing at the 280-Acre Bozick Project: APN #603-122-005; #603-130-003,-004, -009; #603-150-004,-005,-007,-008,-009. -010, -011, -012; City of Coachella, California	½ mile
RI-09139	Frances Segovia	2014	Cultural Resource Suevey Results for the Mobile Home Parks Paving Project in the Coachella Valley in Unincorporated Areas of Riverside County, California (LSA Project No. RCT1306)	APE
RI-09323	Carrie D. Wills	2014	Cultural Resources Records Search and Site Visit Results for Verizon Wireless Candidate 'Valerie', 66351 Harrison Street, Thermal, Riverside County, California. EBI Project No. 61141146	½ mile
RI-09768	Bruce Love and Bai "Tom" Tang	2000	Cultural Resource Element City of La Quinta General Plan	½ mile
RI-9992	Miro, Vanessa and McDougall, Dennis	2014	Cultural resources Monitoring of the Mountain View Estates Mobile Home Park Domestic Water and Sewer Project, Unincorporated Riverside County and Torres-Martinez Desert Cahuilla Indian Reservation, California	APE

5.1.2 Previously Recorded Resources

The records search completed at the EIC indicates there are 21 known archaeological or historic-age resources within one-half mile of the project APE summarized in Table 5.2 and graphically displayed in Figure 5.1. Within the project APE are five known resources, discussed in greater detail in Chapter 7.

Table 5-2. Previously Recorded Resources Within One-Half Mile of Project APE

Primary Number	Period	NRHP Status	Recorded By/Year	Description	Proximity
33-001292	Multi-Component	Listed NRHP (NRD-1292)	1999 Pigniolo, A. 1972 Tom King	Martinez Historical District **Prehistoric**: Three sherds of Tumco Buff, one fragment of Colorado Buff, one chunk of daub, projectile points **Historic**: Glass and metal **Built Environment**: Agency building, agent's quarters, and a school house	APE
33-002250	Prehistoric	Unknown	1981 Cook, J.R	Approximately 150 ceramic sherds	½ mile
33-002251	Prehistoric	Unknown	1981 Cook, J.R	Small ceramic scatter and fire affected rock	½ mile
33-005581	Multi-Component	Unknown	1994 Morgan, C. and Smith, D.	**Prehistoric**: one core, one biface fragment, three flakes, one sherd of Native American pottery **Historic**: six sherds of earthenware, nineteen shards of glass including seven sun colored amethyst glass shards, two fragments of iron, one plastic button, and one fragment of red brick	½ mile
33-005590	Prehistoric	Isolate – Ineligible	1994 Becker, K. and Knell, E.	Single primary metavolcanic flake with a cortical platform.	½ mile
33-005684	Built Environment	State Point of Historical Interest (RIV-062)	1983 Foulkes, C.	**Valerie Jean's Date Garden** Mediterranean/Spa-nish brick house, a date shop, and an unusual palm tree	½ mile

Primary Number	Period	NRHP Status	Recorded By/Year	Description	Proximity
33-005686	Built Environment	Contributing Element: Martinez Historic District (NRD-1292)	1983 Foulkes, C.	**Moravian Church & Indian School** Vernacular wood frame structure	½ mile
33-005687	Built Environment	Contributing Element: Martinez Historic District (NRD-1292)	1983 Foulkes, C.	**Martinez Indian Agency** Victorian style structure	½ mile
33-005688	Built Environment	Contributing Element: Martinez Historic District (NRD-1292)	1983 Foulkes, C.	**Indian School Agency Office** Vernacular wood frame structure	½ mile
33-005689	Built Environment	Contributing Element: Martinez Historic District (NRD-1292)	1983 Foulkes, C.	**Shed** Vernacular wood frame/Vernacular adobe structure	½ mile
33-005690	Built Environment	Contributing Element: Martinez Historic District (NRD-1292)	1983 Foulkes, C.	**Jean & Late Russel Force House** Adobe/Pueblo Revival structure	½ mile
33-009462	Multi-Component	Unknown	1999 Pigniolo, A.	**Prehistoric**: 20 sherds Salton Brown and Tumco Buff, one wonderstone flake **Historic:** metal, patinated glass, ironstone ceramics	½ mile
33-014739	Historic	Unknown	2005 O'Neal, S. and Miller, J.	Historic bottles, ceramic fragments, cut bone, rusted metal	½ mile
33-017370	Historic	Unknown	2007 Brook, J	Two lane asphalt road	½ mile
33-017371	Prehistoric	Ineligible	2010 Mirro, V. and Eddy, J.	Ceramic and lithic scatter, possible remains of house floor	½ mile

Primary Number	Period	NRHP Status	Recorded By/Year	Description	Proximity
33-017372	Prehistoric	Isolate – Ineligible	2008 Brock, J.	Two Brownware sherds – curated by Torrez Martinez	½ mile
33-017761	Prehistoric	Isolate – Ineligible	2009 McDougall, D. and Gothar, B.	Redware ceramics	½ mile
33-020028	Built Environment	Ineligible	2011 Eddy, J.	Martinez Road	APE
33-020744	Built Environment	Unknown	2012 Stanton, P.	Historical-period, asphalt-paved road	APE
33-020745	Historic	Unknown	2012 Stanton, P.	Historical-period, graded dirt road	½ mile
33-020844	Built Environment	Unknown	2012 Stanton, P.	Historical-period, asphalt-paved, two-lane road	APE
33-026594	Built Environment	NRHP Eligible – Criterion A: Contributing element to Coachella Canal (33-005705)	2016 George, J.	Underground concrete Pipe: Irrigation lateral 123.45-6.0	APE
33-028204	Built Environment	Ineligible	2007 Smallwood, J.	Two historic age single family residences	½ mile
33-028205	Built Environment	Ineligible	2007 Smallwood, J.	Seven historic age single family residences	½ mile

5.2 Initial Native American Coordination

The results of the NAHC Sacred Land Files indicated that there were sacred sites within the region that may be impacted by the project, and to contact the Torres-Martinez Desert Cahuilla Indians for more information. The search also included a contact list of Native American individuals or organizations who may have additional information regarding sacred resources in the area and who should be contacted regarding the proposed scope of the project. On 29 August 2017, letters were mailed to all 32 individuals/groups on the list. Once the Martinez Road addition was added to the project design, Gusick updated the SLF search with the NAHC on 11 October 2018. She received a response on 29 October 2018, and resent letters to all 32 individuals/groups on the SLF list. See Appendix B for copies of these letters and any responses received. On 27 October 2017, follow-up phone calls and/or emails were placed to the 29 individuals/groups that had not responded. Five responses have been received as of the submittal of this report. It should be noted that **Torres-Martinez Desert Cahuilla Indians** have requested formal consultation with the CVWD, as well as tribal monitoring for all ground disturbing activities and copies of all existing cultural studies and related records The responses received as of submittal of this report from the Native American individuals/organizations are summarized below.

Agua Caliente Band of Cahuilla Indians (ACBCI): At this time ACBCI has no concerns and defers to Torres Martinez. This letter shall conclude our consultation efforts. (received 09/20/2017)

Twenty-Nine Palms Band of Mission Indians: The project is adjacent to the Chemehuevi Traditional Use Area. For this reason, the THPO will request the Cultural Report from the Coachella Valley Water District when it is completed. (received 09/26/2017)

Viejas Band of Kumeyaay Indians: The project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process. (received 09/07/2017)

Morongo Band of Mission Indians indicated that the project is on land sensitive for Cahuilla tribal cultural resources and they normally defer to a nearby tribal government (received 11/29/2018).

Torres-Martinez Desert Cahuilla Indians: We have reviewed the information pertaining to your project and have found it is within an area with known Village sites which makes it a strong possibility to disturb Cremation and Cultural artifacts that are of importance to the Tribe.

The Tribe understands that this is an inquiry to collect information pertaining to the area the project is located on to assess the sensitivity of the area. However the Tribe is only willing to share the details of that information with the project proponents and lead agency. The Tribe is requesting that you list its response in your report so that the wishes of the Tribe are documented.

The Torres Martinez Desert Cahuilla Indians are requesting the following:

1. Conduct a formal consultation with the project proponents and lead agency.

2. Native American Monitor(s) from the Torres Martinez Desert Cahuilla Indians be present during any ground disturbing proceedings. Including surveys and archaeological testing.

3. Copies of all existing cultural studies and related records.
(received 10/27/2017)

On 26 November 2018, Gusick consulted with TM Most Likely Descendant, Gary Resvaloso, on discovery of cremated human remains and associated funerary objects identified near to the proposed alignment. On 07 December 2018, Mr. Resvaloso contacted Gusick to request inclusion that he does not agree with the conclusions in the cultural report. On 26 November 2018, Gusick consulted with Mike Mirelez, the Cultural Resources Coordinator for the Torres Martinez Desert Cahuilla Indians, about some recently identified cultural material also adjacent to the proposed alignment.

Other coordination efforts include a 27 October 2017 phone call and email to Johanna Marty, Associate State Archaeologist at the State Water Resources Board to inform them of the project and to inquire about any concerns. Ms. Marty returned the call on 01 November 2017 and indicated no concern at that time and informed Gusick that the likely reviewer at the State Water Board would be Kevin Marti, Associate State Archaeologist.

5.3 Field Methods

Archaeologist Amy Gusick, along with Boykin Witherspoon of the Water Resources and Policy Initative and Project Engineer Roger Shintaku, and graduate student assistants, conducted a site visit of the planned route and of the Lift Station on 13 July 2017. We met the SMHP manager Daisy Garcia, who took us on a tour of the SMHP and directed us to the current sewer system outputs. After our tour of the SMHP, we continued along the entire route of the proposed sewer pipeline, ending at Lift Station 55-21 for an initial assessment.

On 7 September 2017, Amy Gusick conducted the cultural resource survey for the Sunbird/Martinez Sewer Project, covering the APE with the exception of the Martinez Road portion. On 26 November 2018, Gusick and student project engineer Tamra Fukumoto meet with TM project coordinator Joseph (Nick) Lavergne, TM tribal MLD Gary Resvaloso, and TM Cultural Resources Coordinator Michael Miralez at the TMCC. Lavergne and Resvaloso accompanied Gusick and Fukumoto on a portion of the Martinez Road survey and provided specific information about areas of concern that were near to the project APE. Preliminary efforts consisted of the review of records within the project area, the generation of a map of the recorded cultural resources using a geographic information system (GIS), and review of historic aerials of the project area.

Gusick employed intensive pedestrian and reconnaissance survey methods for the route of the pipeline due to the developed nature of the project area and inspected natural open spaces, buildings, and infrastructure within the linear corridor. Previously recorded cultural resources were relocated using locational data provided in the records search, photographed with a digital camera (included below), and mapped with a sub meter accurate Trimble Geo7X global positioning system (GPS) unit.

An interview was conducted with Daisy Garcia, SMHP manager, to inquire about the use of buildings with the SMHP that were identified on historic topographic maps and aerial images (Photograph 5.1). The SMHP is surrounded on all sides by a chain link fence that separates the SMHP from operational date palm groves (Photograph 5.2).

An intensive pedestrian survey was conducted along Echols Road, a narrow two-lane paved road that leads from Harrison Street to the entrance of the SMHP (Photograph 5.3). This road is bordered on the south and east by date palm groves and on the north by date palm groves and the SMHP. Visibility was excellent (90-100%), however, the entire area is highly disturbed.

An intensive pedestrian survey was conducted along Harrison Road, from Echols Road to 66th Avenue. Harrison Road is a wide two lane road with a wide, partially paved shoulder (Photograph 5.4). This road is bordered on the east by date palm groves on its northern section and vacant lots on the southern section, close to 66th Avenue. The western side of the road is also bordered by date palm groves and vacant lots, but

there is a gas station located on the northwest corner of Harrison Street and 66th Avenue. On the southeast corner of Harrison Street and 66th Avenue is Valerie Jean's Date Shop (discussed below), an Historic Property that has fallen into disrepair. Visibility was excellent (90-100%), however, the entire area is highly disturbed.

A reconnaissance level survey was conducted along 66th Avenue. The developed nature of the areas adjacent to the road and private owned land prevented full-cover of the adjacent areas to the road with an intensive pedestrian survey (Photograph 5.5 and 5.6). 66th Avenue is a two-lane road with a wide dirt shoulder that is bordered in numerous places by a fence or an irrigation ditch (Photograph 5.7). All areas of open and accessible space were inspected with a focus around topographical features most likely to contain cultural resources (e.g., drainages, bedrock outcrops, and building structures). All built environment resources noted adjacent to the APE were re-inspected as was an historic-age levee noted on historic topographic maps. The area around the levee was surveyed using 5 m. transects, but was difficult due to the heavy vegetation both inside of and surrounding the levee (Photograph 5.8).

An intensive pedestrian survey was conducted along Martinez Road and along the access road to the TMCC. This is a two lane road with graded shoulders and residential properties along each side (Photograph 5.9). A portion of this road extends into the boundaries of the Martinez Historic District. This area was surveyed with the TM MLD and he identified areas within the district where cremated remains have been identified and where recent work had recovered pieces of debitage from shovel test pits. The entirely of the APE within Martinez Road and the reservation access road were surveyed, including the shoulders to the extent of the property fences. The shoulders were heavily graded and there were numerous pieces of modern trash scattered along the road.

A reconnaissance level survey was conducted along the dirt access road for the Lift Station. This dirt road is wide and traverses an area of vacant lots. The road is bordered on either side by heavily graded and disturbed land, with areas of dense vegetation and pushed berms (Photograph 5.10).

An intensive pedestrian level survey was conducted at Lift Station 55-21 (Photograph 5.11). Transects spaced 5-m. apart were used to investigate a 10-m. area surrounding the Lift Station. The Lift Station itself was not accessed as it was behind a chain link enclosure. Visibility was excellent (100%), however, the entire area surrounding the Lift Station is highly disturbed (Photograph 5.12).

Copies of the digital photographs, field notes, and GIS data are available at the WRI office at California State University, San Bernardino. California Department of Parks and Recreation (DPR) series 523 forms were completed for any updates required to previously recorded resources and for newly identified resources (Appendix D). Amy Gusick submitted the DPR forms to the EIC in Riverside.

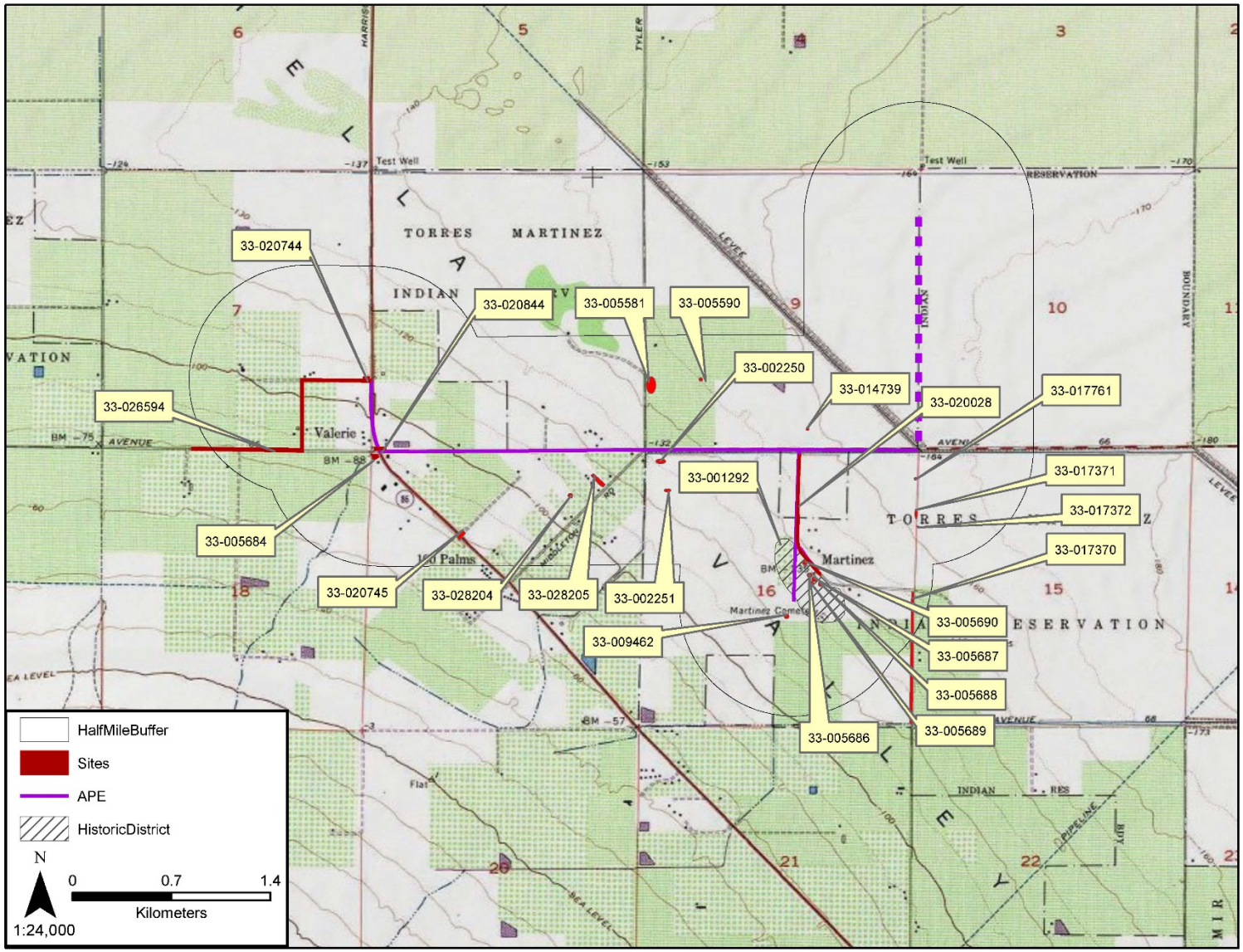


Figure 5-1. Previously recorded resources within one-half mile of project APE

Photograph 5-1. A 1953 aerial image of the land on which SMHP now sits, showing configuration of existing buildings.

Photograph 5-2. Fence separates SMHP and Date Farms, facing north

Photograph 5-3. Echols Road, facing east

Photograph 5-4. Harrison Road, facing south

Photograph 5-5. 66th Avenue, facing west

Photograph 5-6. 66th Avenue, facing east

Photograph 5-7. 66th Avenue showing fence and ditches along road, facing north

Photograph 5-8. Heavy vegetation growing inside of and around the levee

Photograph 5-9. Martinez Road and shoulder, facing north

Photograph 5-10. Dirt access road leading to Lift Station, facing south

Photograph 5-11. Lift Station 55-21, facing north

Photograph 5-12. Disturbed areas surrounding Lift Station 55-21, facing north

6. RESULTS

Within or adjacent to the project APE there are five known cultural resources, four are historic-age built environment sites and one is an Historic District (Figure 6-1). There is also one additional known Historic Property that is adjacent to the APE that will be discussed below. There were three newly recorded resources (AG-1, AG-2, and AG-3) identified during the project survey (see Figure 6-1). Information on site relocation, eligibility, and project effects for each resource are below.

6.1 Previously Record Cultural Resources

6.1.1 33-005684 - Valerie Jean's Date Shop

Although this resource is not within the APE, it is on a southwest corner near to where trenching for the pipeline will occur. Site 33-005684 (Valerie Jean's Date Shop) was nominated for a State Point of Historical Interest in 1983 by Cecelia Foulkes of the Riverside County Historical Commission. This resource has a National Register status code of 4D. It was granted a State Point of Historical Interest (RIV-062) status in 1991. This resource consists of a Mediterranean/Spanish Style brick house, a date shop, and an unusual palm tree. As described in the Historic Resources inventory:

> The house is rectangular in plan with a corner room extension and has a Spanish tile gable roof, multi-paned casement windows, a bay window, a narrow wood plank door, and a long porch with square porch posts. The date shop is irregular in plan and has a Spanish tile and composition hip and gable roof, brick walls, a brick and tile pipe chimney, plate glass windows, exposed eaves, and an open porch area with square posts and picnic tables. The unusual palm tree looks like any other male palm tree, but it is very prolific (Foulkes 1983).

This resource was nominated as a State Point of Historical Interest for its economic/industrial importance to the region. The Coachella Valley region is where date growing within the United States began and this region now dominates worldwide commercial production. A prolific grower of dates in the region, Russ Nicoll, stated to sell dates at a roadside stand located where Valerie Jean's Date shop sits today. By 1943, modification to this location included the expansion of the stand into a shop and building of an associated Spanish-style house. It is assumed that Valerie Jean's Date shop was the originator of the "date shake," a popular drink still served in the region today. Russ Nicholl, the owner of the shop, is also considered the originator of modern packaging technique for dates to be shipped worldwide.

This resource was revisited and the date shop was noted to be in disrepair (Photographs 6-1 and 6-2). The Spanish-style home adjacent to the shop appears to be in good condition as does the "unique" palm tree; however, the plaque that used to sit at the base of the palm tree is missing (Photograph 6-3).

Based on the location of this resource outside of, but near to the direct APE, there will be temporary impacts that will occur during the digging of the trench on the road to the north and west of the resource. These impacts will be resolved once the pipeline trench is in-filled and re-paved and are considered to have No Adverse Effect.

Photograph 6-1. Valerie Jean's Date Shop, facing east

Photograph 6-2. Valerie Jean's Date Shop, facing west

Photograph 6-3. Spanish-style home adjacent to Valerie Jean's, facing north

6.1.2 33-020028 – Martinez Road

Site 33-020028 is within the APE and is referred to as Martinez Road (Photograph 6-4). This two-lane paved road with 15-30 ft. dirt shoulders is seen on the 1941 Coachella 15' quadrangle and was recorded by John Eddy of Applied Earthworks in 2011. This road runs through the Torres Martinez Desert Cahuilla Indian Reservation and is adjacent to the Martinez National Register Historic District (NRD-1292; 33-001292). Along the northern portion of the road that terminates at 66th Avenue are private residential, agricultural, and undeveloped lots.

According to the DPR 523 for this resources, the current alignment of this road is thought to have occurred in the 1910s as a result of a grid of agricultural roads built during that time to replace the wagon roads that were common in the region (Eddy 2011). Martinez Road appears to follow the same alignment as the Bradshaw Trail Loop as it can be seen on the GLO maps surveyed in 1856 and 1909. No evidence of the Bradshaw Trail was identified during the survey. The road has been resurfaced and the shoulder has been graded throughout the years for routine maintenance. Eddy (2011) determined that Martinez Road is ineligible for the NRHP (see Addendix D for DPR form with evaluation). No further cultural resource considerations are necessary for this resource; however, see recommendations for 33-001292.

Photograph 6-4. Overview Martinez Road, facing south

6.1.3 33-020744 – Caltrans right-of way

33-020744 is one of a number of Caltrans right-of-ways (ROW) recorded by Patrick Stanton in 2012. This site is a historic-period asphalt paved road that extends 15-m. from the edge of Highway 86 (Harrison Street) and was likely a farm access road. No cultural material was observed.

The road is visible on the Coachella (1956) 15-minute and the Thermal Canyon (1956) 7.5-minute USGS topographic quadrangles. The resource is recommended ineligible for the NRHP under Criterion A, as it is not associated with events that have made a significant contribution to the broad patterns of our history. The resource is recommended ineligible for the NRHP under Criterion B, as is not associated with the lives of persons significant in our past; the refuse scatter is not linked to specific people. The resource is recommended ineligible for the NRHP under Criterion C, as it does not embody distinctive characteristics of a type, period, or method of construction, does not represent the work of a master, does not possess high artistic value, and does not represent a significant and distinguishable entity whose components may lack individual distinction. The research potential of this site has been exhausted through recordation and is not likely to yield additional information important to the history of the local area, California or the nation and is recommended ineligible for the NRHP under Criterion D. In addition, the road is in poor condition and has likely been patched and resurfaced over the years and the resource does not retain integrity (Photograph 6-5). No further cultural resource considerations are recommended.

Photograph 6-5. Previously recorded resource 33-020744, facing south

6.1.4 33-020844 - Caltrans right-of way

33-020844 is one of a number of Caltrans ROWs recorded by Patrick Stanton in 2012. This site is an historic-period asphalt paved ROW at the northeastern corner of 66th Avenue and Highway 86 (Harrison Street). It extends 15-m. from the edge of Highway 86 (Harrison Street) and is across the street from resource 33-005684, Valerie Jean's Date Shop.

The road is visible on the Coachella (1956) 15-minute and the Thermal Canyon (1956) 7.5-minute USGS topographic quadrangles. The resource is recommended ineligible for the NRHP under Criterion A, as it is not associated with events that have made a significant contribution to the broad patterns of our history. The resource is recommended ineligible for the NRHP under Criterion B, as is not associated with the lives of persons significant in our past; the refuse scatter is not linked to specific people. The resource is recommended ineligible for the NRHP under Criterion C, as it does not embody distinctive characteristics of a type, period, or method of construction, does not represent the work of a master, does not possess high artistic value, and does not represent a significant and distinguishable entity whose components may lack individual distinction. The research potential of this site has been exhausted through recordation and is not likely to yield additional information important to the history of the local area, California or the nation and is recommended ineligible for the NRHP under Criterion D. In addition the ROW is in poor condition and has likely been patched and resurfaced over the years (Photograph 6-6). No further cultural resource considerations are recommended.

Photograph 6-6. Previously recorded resource 33-020844, facing west

6.1.5 33-026594 - Irrigation lateral 123.45-6.0

33-026594 was recorded by Joan George, Applied Earthworks, in 2016. This is a recorded segment of Irrigation lateral 123.45-6.0 and is part of the Coachella Canal (33-005705) constructed between 1949 and 1951. The irrigation lateral that is within the project APE runs along Echols Road (Photograph 6-7). The concrete pipe within this section has a diameter of 14-in. and then tapers to 12-in. at the eastern end of Echols Road where it connects with Harrison Street.

The Coachella Canal was constructed to deliver a reliable water source to Coachella Valley from the All American Canal (Norland 1978), and was integral in the agricultural economic boom in the region after the canal was constructed. The canal has remained relatively unmodified except for additions to ensure clean water. The period of significance for the canal is 1938-1954 and it has been found eligible for the NRHP, with SHPO concurrence, under Criterion A.

A contributing element to this Historic Property is within the direct APE; however, the segment within the APE along Echols Road was replaced with PVC pipe in 2016 by CVWD to protect the pipeline from future flooding (George 2016). The PVC pipe was placed immediately adjacent to the original concrete pipe. George (2016) found that as the concrete pipe along Echols Road retained its integrity and was constructed during the Canal's recognized period of significance from 1938-1954, it was a contributing element to the Coachella Canal as a whole and the PVC replacement would have an effect on the Historic Property, but not an adverse effect, as the pipe replacement amounted to only 0.4 percent of the 485-mile long pipeline distribution network.

For the current project, the sewer pipeline will be placed along the same alignment as the section of the Irrigation lateral 123.45-6.0 previously replaced with PVC pipe. Per health code Section 64630 and 64572 (Title 22 CA Code of Regulations), this sewer pipeline must be a minimum of 10-ft. away from the water pipeline and may not be in the same trench as the water main. Due to the separation requirements and the fact that this section of Irrigation lateral 123.45-6.0 has already been replaced, and that replacement was found to have no adverse effect, the installation of the sewer pipe will also have No Adverse Effect on this section of the Coachella Canal (Irrigation lateral 123.45-6.0).

Photograph 6-7. Overview of previously recorded resource 33-026594 showing area where the water pipeline was replaced along Echols Road, facing west

6.1.6 33-001292

33-001292 is a NRHP-listed Historic District. Called Martinez Historical District (Photograph 6.8), it was recorded and nominated in 1992 by Thomas King, a then member of the Riverside County Historical Commission. This Historic District encompasses the Cahuilla village site of *Pūichekiva* or *wanteauem* and is currently part of the Torres-Martinez Desert Cahuilla Indian Reservation. The District has both prehistoric and historic components, including the five historic-age buildings (33-005686, 33-005687, 33-005688, 33-005689, and 33-005690) near to the APE. There is also a cemetery located within the District boundaries.

During the field survey the District and the contributing elements were surveyed. A portion of the APE runs directly through the District, and is adjacent to an area where cremated remains were previously identified. Although planned impacts to the road that runs through the district will be temporary, the District and its elements should be considered in project planning. No access roads or laydown yards should be placed within the boundaries of the Historic District. Due to the archaeologically sensitive nature of this area, including the presence of a cemetery, both an archaeological and tribal monitor should be present during any ground disturbing activity. Additionally, there is a section of Martinez Road that is particularly sensitive for the presence of cultural material. It lies between two areas where cultural material was identified, including cremated remains. Although the area has been disturbed and the road lies on top of fill, unanticipated discoveries are possible if the trench for the sewer extends beyond the fill underneath the existing paved road. Mr. Resvaloso indicated he believes the fill material for Martinez Road is 2-3 ft. deep, and is concerned that the planned depths for the trench will exceed this depth. It is recommended that for all areas of Martinez Road within the boundaries of the Historic District the entire width of the trench is dug to depth in small 1-2 inch increments using mechanical excavators, if the trench goes beneath fill material. This will enable the monitors to stop the excavation if additional cultural material is encountered. The current project plans will have No Adverse Effect on this Historic District. At the conclusion of the installation of the sewer pipe, the road will be repaved and returned to the current condition and appearance.

Photograph 6-8. Buildings in the Martinez Historic District, facing southeast

6.2 Newly Recorded Cultural Resources

6.2.1 AG-1

Although not within the APE, this adobe house is within the SMHP and is located at 84950 Echols Rd # 52, Thermal, CA. It is a single-family residence built with adobe bricks (Photograph 6-9), but does not conform to the typical abode homes from the Spanish Colonial (AD 1600-1850) or the Pueblo Revival (AD 1910-present) styles. Exact construction date for this home is not available as it is not a separate parcel from APN 751060026 which is the 10-acre lot that is the current SMHP. This adobe residence was identified on a 1953 aerial and the 1957 Valerie topographic quadrangle, but is not apparent on topographic quadrangle maps prior to 1957; however, it was likely built prior to this date and was associated with the small scale farming common in this region since the mid-nineteenth century. Construction on the SMHP began in 1974 (Riverside County Parcel Report), and the abode was kept as part of this parcel. The adobe is irregular in construction with adobe bricks measuring 17.5-in. x 11.5-in. x 3.5-in. separated by 0.75-in. of mortar (Photograph 6-10). It was difficult to determine type of mortar as the entire building has been painted. The residence measures 40-ft. north-south and 25-ft. east-west. The roof is a flat wooden roof with an overhang, constructed with joists laid across the upright walls. The main entrance to the house faces east (Photograph 6-11). An exterior adobe chimney is located on the southern side of the house and pierces the flat roof in this area (Photograph 6.12). On the west side of the house, there is a modern improved window that has been boarded up and has bricks laid along the sill (Photograph 6-13). To the left of this window there is a modern screen door. There is a modern cement block addition on the north side of the house (Photograph 6-14).

The house has not been maintained and has been added to over the years in a manner not consistent with the *Secretary of Interior Standards for Rehabilitation*. In discussions with the SMHP manager, it is currently rented out for housing use. Although the house appears to retain its original purpose, it has not maintained integrity of design, setting, or workmanship and does not appear eligible for the NRHP. Additional research on previous ownership and use may provide additional information on which to evaluate the property, but for the purposes of this project, the property is outside of the APE and will not be impacted by the undertaking.

Photograph 6-9. Overview of Adobe building, facing north

Photograph 6-10. Adobe brick with paint covering.

Photograph 6-11. Main entrance on the east side of the house.

Photograph 6-12. External chimney on the south side of the house

Photograph 6-13. Boarded window with brick sill

Photograph 6-14. Addition on north side of house

6.2.2 AG-2

This resource is an historic to modern period improved paved road (Photograph 6-15) marked as 66th Avenue on maps. The road surface is comprised of asphalt and it runs from Harrison Street to Polk Street within the current project alignment. The road is bordered by commercial, agricultural, and residential parcels, but the majority of the adjacent lands are vacant lots. No newly identified cultural resources were found in association with this road. The road retains its original alignment, but has been impacted by modern improvements.

This road is visible on the 1944 Valerie topographic quadrangle and appears to be a main route through this section of Thermal. The road is not present on the General Land Office Records Plat maps from 1856, 1909, or 1924. The resource is recommended ineligible for the NRHP under Criterion A, as it is not associated with events that have made a significant contribution to the broad patterns of our history. The resource is recommended ineligible for the NRHP under Criterion B, as is not associated with the lives of persons significant in our past; the refuse scatter is not linked to specific people. The resource is recommended ineligible for the NRHP under Criterion C, as it does not embody distinctive characteristics of a type, period, or method of construction, does not represent the work of a master, does not possess high artistic value, and does not represent a significant and distinguishable entity whose components may lack individual distinction. The research potential of this site has been exhausted through recordation and is not likely to yield additional information important to the history of the local area, California or the nation and is recommended ineligible for the NRHP under Criterion D. No further cultural resource considerations are recommended.

Photograph 6-15. 66th Avenue, facing east

6.2.3 AG-3

This resource is an historic-age levee, which is first shown on the 1957 Valerie Topographic Quadrangle, but appears to be no longer in use (Figure 6-2). It was likely used in association with the Kohl Ranch that is currently on the property adjacent to the levee. Evidence of the levee is missing; the area is flat, but there is a concrete-lined canal at the southern terminus of the levee. Field inspection of the levee was difficult due to dense vegetation within and surrounding the feature. The cement is degraded and the entire canal is infilled with vegetation (Photograph 6-16). The cement is degraded and the entire canal is infilled with vegetation.

No major historic event or individual is associated with this feature and it was not a major historic factor in the development of this area. The research potential of this site has likely been exhausted through recordation, but more extensive research may provide information on construction date and use. For the purposes of this project, the property is outside of the APE and will not be impacted by the undertaking and no further cultural resource considerations are recommended.

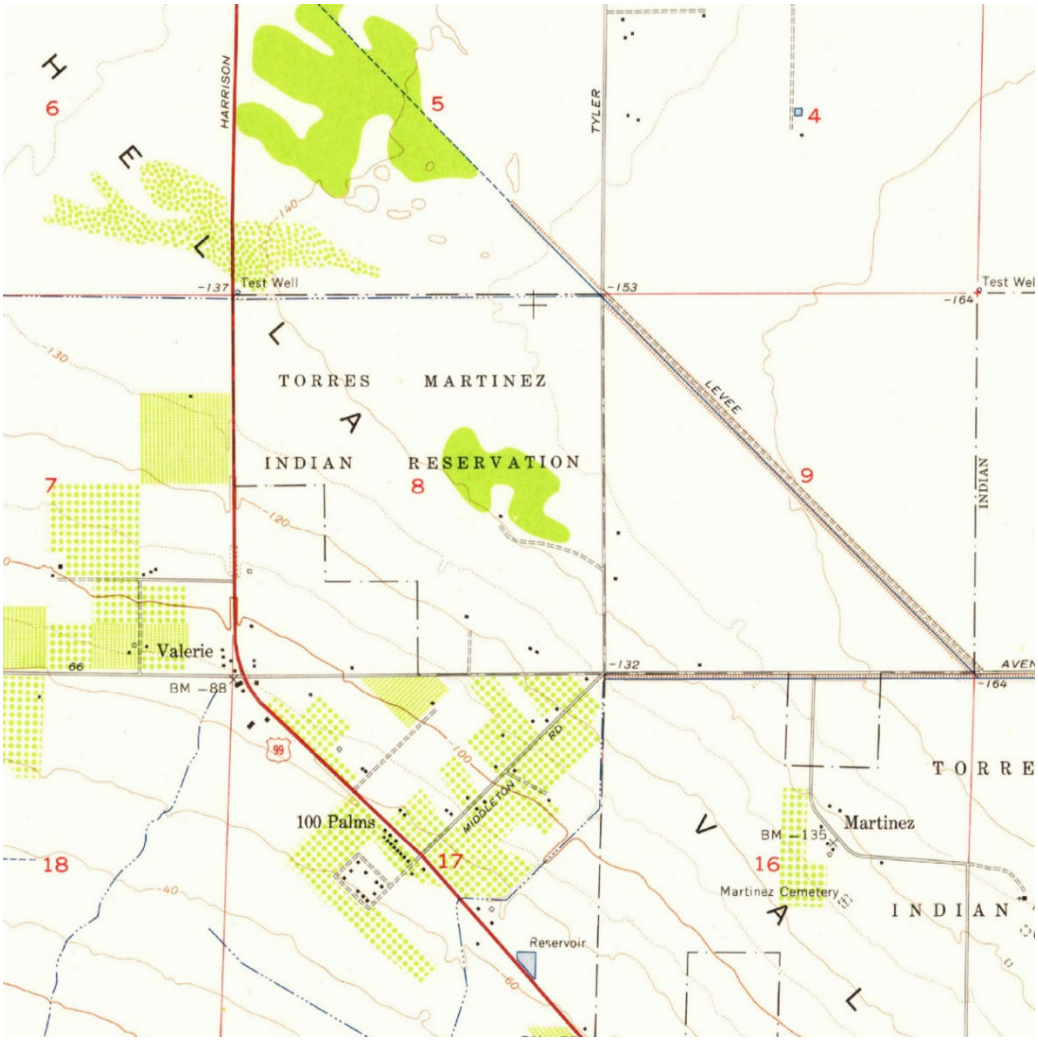


Figure 6-2. 1957 Topo map showing location of levee, in section 9.

Photograph 6-16. Section of levee nearest to 66th Ave, showing degradation and vegetation

7. FINDING OF EFFECT

A project is considered to have significant effect on historic properties if directly or indirectly alters the characteristics that qualify the property for inclusion in the National Register of Historic Places. Examples of adverse effects include:

- Physical destruction of or damage to all or part of the property
- Alteration of a property that is not consistent with the Secretary's Standards for the Treatment of Historic Properties (36 CFR Part 68);
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance (36 CFR Part 800.5(a) (2))

The above criteria of adverse effect are applied to historic properties in the project APE and one of three findings is determined:

1. No Historic Properties Affected
2. No Adverse Affect
3. Adverse Affect

7.1 Effects

Potential effects of the Project on historical resources would generally be related to physical destruction of a resource or changes in the visual setting. While physical destruction can occur to both archaeological and architectural resources, visual impacts are typically only considered for architectural resources.

Both direct and indirect impacts were considered for this project. Direct impacts result from construction related activities such as road grading, vegetation clearing, trenching, and installing structures, among other activities. Indirect impacts can occur as a result of changing the use of the landscape. For example, increased public access to a remote location can result in unauthorized recreational use and vandalism. Indirect effects are not expected with the current project.

Impacts to buried human remains within the APE were considered and determined to be moderately high. There is a recorded cemetery in the Martinez Historic District, which is just south of the APE along 66th Avenue and cremated remains have been previously discovered through excavation. There is a possibility of encountering human remains if trenching below fill material underneath the existing streets.

7.1.1 Pipeline Installation

This APE encompassed paved roads and a 2-m. buffer. Ground inspection focused on the shoulder and on either side of the road. There were five previously recorded sites within the direct APE. Three of these sites

are ineligible for the NRHP, one site is eligible, and one is a Historic District site. There will be No Adverse Effect from this project activity. There is an additional Historic Property adjacent to the APE that needs to be considered in project planning. Recommendations for protection of cultural resources are provided in the "Management Recommendation" section.

7.1.2 New Lift Station Construction

The area on the northeast corner of Harrison and Echols Road was surveyed. No cultural resources were identified along this section of the APE. This project activity will have No Historic Properties Affected.

7.1.3 Lift Station 55-21 Upgrades

A 10-m. buffer around Lift Station 55-21 was surveyed and there were no cultural resources identified. The Lift Station itself was constructed in 1993 and is not considered of historic-age. This project activity will have No Historic Properties Affected.

7.1.4 Access Road

The APE for the access road to the Lift Station encompasses an existing ROW dirt road that will not be altered. No cultural resources were identified along this access road. This project activity will have No Historic Properties Affected.

Table 7-1. Finding of Effects

Primary Number	Description	Eligibility	Project Effects
33-001292	Martinez Historic District	Listed NRHP	No Adverse Affect – recommendations for monitoring and graduated trenching on sections of Martinez Road that are in the District boundaries
33-005684	Valerie Jean's Date Shop	SPHI (RIV-062)	Outside APE, No Affect
33-020028	Martinez Road	Recommended Ineligible	No Affect
33-020744	Historical-period, asphalt-paved road	Recommended Ineligible	No Affect
33-020844	Historical-period, asphalt-paved, two-lane road	Recommended Ineligible	No Affect
33-026594	Contributing element to the Coachella Canal	NRHP Eligible	No Adverse Affect; previously repaired
AG-1	Adobe Structure	N/A	Outside APE; No Affect
AG-2	66th Avenue	Recommended Ineligible	No Affect
AG-3	Historic-age levee	N/A	Outside APE; No Affect

8. RECOMMENDATIONS

Below are management recommendations based on the finding of No Adverse Affect. CVWD recommends that prior to construction activities, construction personnel should be briefed on procedures to follow in the event buried human remains or unanticipated cultural resources are encountered.

8.1 Monitoring

There is an important National Register Historic District within the APE and a State Point of Historical Interest near to the APE at 66th Avenue and Harrison Street. Within the Historical District, there is a known cemetery as well as historic documentation of two Indians Rancherias and a prehistoric Cahuilla Indian village site previously present at that location. Due to the sensitive nature of the landscape surrounding the APE, we recommended full time archaeological and tribal monitoring for any initial ground disturbing activities along the APE, including clearing, grubbing, and excavation.

8.2 Incremental Trenching

The section of the APE that is along Martinez Road and intersects with the boundaries of the Martinez Historical District is particularly sensitive due to the discovery of cremated remains. This section of Martinez Road that lies within the District should have incremental trenching (1-2 inches) conducted if the trenching extends beneath the road fill. This can be conducted with mechanical excavators and should occur for the entire width of the trench until depth needed for the trench is reached.

8.3 Inadvertent Discoveries

In the event of a discovery, work will be stopped within the immediate area of the find until a qualified archaeologist can determine the nature of the resources discovered. As appropriate, the archaeologist will assist Project personnel in avoiding the newly discovered resources or in implementing management measures to evaluate the significance and potential eligibility of the resources for listing on the NRHP, CRHR, or any local registers, as appropriate. Both CVWD and TM will be immediately notified if the discovery is needs a significance evaluation.

If the discovery is determined to be an archaeological site, after securing the work area from additional disturbance, in concert with the Construction Foreman or Field Supervisor, the archaeological monitor will notify the cultural resources project manager. The cultural resources project manager will determine what additional fieldwork is necessary, such as a limited test excavation, to determine the site‘s potential eligibility for the NRHP. It may be determined that a site visit by the PI is necessary to make that determination. If test excavation is required to evaluate a discovery, this will be discussed in consultation with the lead agency. Any excavation will require a curation plan prior to implementation.

8.4 Human Remains

If any previously unrecorded human remains are inadvertently discovered during operation or maintenance all ground-disturbing activities in the vicinity of the discovery must cease immediately and a 50 ft. wide buffer will be established around it. California State law (Health and Safety Code Section 7050.5; Public Resources Code Sections 5097.94, 5097.98 and 5097.99) will be followed on state, county, and private land. This law specifies that work will stop immediately in any areas where human remains or suspected human remains are encountered. The lead agency and the County Coroner will be immediately notified of the discovery. The Coroner has two working days to examine the remains after being notified by the lead

agency. If the remains are determined to be Native American, the Coroner has 24 hours to notify the NAHC who will determine the Most Likely Descendant (MLD).

The NAHC will immediately notify the identified MLD and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the remains and grave goods. If the MLD does not make recommendations within 48 hours, the area of the property must be secured from further disturbance. If no recommendation is given, the lead agency or his or her authorized representative shall re-inter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

9. REFERENCES

Apple, R. M., A. York, A. Pigniolo, J. H. Cleland, and S. Van Wormer.
1997 Archaeological Survey and Evaluation Program for the Salton Sea Test Base, Imperial County, CA. Prepared by KEA Environmental Inc. for the Bureau of Reclamation.

Bean, L. J.
1978 Cahuilla. In *California*, edited by Robert F. Heizer, pp. 575–587. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, L. J., and K. S. Saubel
1972 *Temalpakh: Cahuilla Indian Knowledge and Use of Plants*. Malki Museum Press, Banning, California.

Bean, L. J., S. B. Vane, and J. Young
1991 *The Cahuilla Landscape The Santa Rosa and San Jacinto Mountains*. Ballena Press. Menlo Park, California.

Binford, L. R.
1980 Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45:4-20.

Cleland, J. H.
1998 From Paleo-Indian to Protohistoric: The Chronology if Human Occupation of the Salton Sea Test Base. KEA Environmental, Inc. *Proceedings of the Society for California Archaeology*, Volume 12, pp. 10–14.

Chandler, E. N., C. D. Cotterman, J. K. Sander, And R. D. Mason
2003 Final Cultural Resources Inventory for the Coachella Valley Management Plan Riverside County, California. Prepared for the Bureau of Land Management Palm Springs-South Coast Field Office. Chambers Group, Inc. Redlands, California.

DOI (Department of the Interior)
2006 Coachella Canal Area Resources Management Plan/Environmental Assessment. U.S. Department of the Interior, Yuma.

Eddy, J.
1983 Archaeological Site Record for 33-020028, 13 October 2011. On file, Eastern Information Center, University of California, Riverside.

Foulkes, C.
2011 Archaeological Site Record for P-33-5684, 12 August 1983. On file, Eastern Information Center, University of California, Riverside.

George, J.
2016 Archaeological Site Record for 33-026594, 12 September 2016. On file, Eastern Information Center, University of California, Riverside.

Lawton, H. and L. J. Bean
1968 A Preliminary Reconstruction of Aboriginal Agricultural Technology Among the Cahuilla. The *Indian Historian* 1(5):18-24, 29.

Laylander, D.
1994 Phase III Data Recovery at the Elmore Site (CA-IMP-6427), Imperial County, California, 11-IMP-86, P.M. 33.6/43.2, 11221-100710. Submitted to Caltrans District 11, San Diego.

Lech, S.
2004 *Along the Roads: A History of the Portion of Southern California that Became Riverside County 1772-1893.* Steve Lech, Ca.

Love, B. and M. Dahdul
2002 Desert Chronologies and the Archaic period in the Coachella Valley. Pacific *Coast Archaeological Society Quarterly*, 38(2-3), pp.66-86.

Love, B., K.J.W. Bouscaren, N. L. Johnson, T. A. Wake, H. M. Quinn, and M. Dahdul
2002 Final Testing and Mitigation Report Rancho Fortunado Property Tentative Tract 28964, City of La Quinta, Riverside County, California. Submitted to Wes Oliphant Affiliated Construction by CRM Tech, Riverside, California.

Norland, O. J.
1978 *Coachella Valley's Golden Years*. Revised edition. Desert Printing Co., Inc., Indio, CA.

Mirro, V. and J. George
2011 Phase I Cultural Resources Assessment for the Sunbird Mobile Home Park Water Supply Project, Riverside County, California. On file at the Eastern Information Center.

Moratto, M. J.
1984 *California Archaeology*. Academic Press, San Diego.

Padilla, L.
2017 Groundstone Analysis at the Rock Camp Site. Unpublished M.A. Thesis, Department of Anthropology, California State University, San Bernardino.

Porras, L.
2017 Environmental Diversity and Resource Use in the Salton Basin of the Colorado Desert. Unpublished M.A. Thesis, Department of Anthropology, California State University, San Bernardino.

Rogers, M. J.
1966 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:157-198.

Schaefer, J.
1986 Late Prehistoric Adaptations during the Final Recessions of Lake Cahuilla: Fish Camps and Quarries on West Mesa, Imperial County, California. Mooney-Levine and Associates. Submitted to the Bureau of Land Management, Department of the Interior, El Centro, California.

1994 The Challenge of Archaeological Research in the Colorado River: Recent Approaches and Discoveries. *Journal of California and Great Basin Anthropology* 16 (1):60–80.

Schaefer, J. and D. Laylander
2007 The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands. In *California Prehistory: Colonization, Culture, and Complexity,* edited by Terry L. Jones and Kathryn A. Klar, pp. 247-258. Alta Mira Press. Lanham, Maryland.

Tennyson, M. and R. Apple
2009 Amended Salton Sea Unit 6 Project Cultural Resources Survey Report Imperial County, California. Prepared for AECOM Environment and California Energy Commission by EDAW, Inc. San Diego, California.

United States Department of Agriculture (USDA)
1973 Soil Survey, San Bernardino County Southwestern Part, California. Soil Conservation and Forest Services.

von Till W., E., R. H. Crabtree, C. N. Warren, M. Knack, and R. McCarty
1981 A Cultural Resources Overview of the Colorado Desert Planning Units. U.S. Department of the Interior, Bureau of Land Management, California Desert District, Riverside.

Waters, M. R.
1981 Late Holocene Lacustrine Chronology and Archaeology of Ancient Lake Cahuilla. *Quaternary Research* 19: 373-387.

Wilke, P.J.
1976 Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Riverside.

1978 Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California. *University of California Archaeological Research Facility Contributions* 38. Berkeley

Wilke, P.J. and H.W. Lawton
1975 *The Cahuilla Indians of the Colorado Desert: Ethnohistory and Prehistory*. Ballena Press. Ramona, California.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A

RECORD SEARCH RESULTS

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B

CONSULTATION RESULTS

THIS PAGE INTENTIONALLY LEFT BLANK

Correspondence

Tribal Affiliation	Individual Contacted	Method of Contact	Date of Contact	Response Received
California Native American Heritage Commission	Gayle Totton, Associate Government Program Analyst	1. Email	1. 07/27/2017	Yes (08/23/2017): Torres Martinez may have knowledge about sites in the area. Recommends contacting local tribal entities as well.
State Water Resources Control Board	Johanna Marty, Cultural Resources Officer (Associate State Archaeologist)	1. Phone 2. Email	1. 10/27/2017 2. 10/27/2017	1. Left voicemail 2. No concerns at this time.
Agua Caliente Band of Cahuilla Indians	Patricia Garcia, THPO Jeff Grubbe, Chairperson	1. USPS	1. 08/29/2017	At this time ACBCI has no concerns and defers to Torres Martinez. This letter shall conclude our consultation efforts. (received 09/20/2017)
Augustine Band of Cahuilla Mission Indians	Amanda Vance, Chairperson	1. USPS 2. Phone	1. 08/29/2017 2. 10/27/2017	1. No response 2. Left message with receptionist
Cabazon Band of Mission Indians	Doug Welmas, Chairperson	1. USPS 2. Phone	1. 08/29/2017 2. 10/27/2017	1. No response 2. Left message on voicemail, Jackeline Barnham
Cahuilla Band of Indians	Daniel Salgado, Chairperson	1. USPS 2. Phone 3. Email	1. 08/29/2017 2. 10/27/2017 3. 10/27/2017	1. No response 2. Left message with receptionist. She suggested email as well. 3. No Response
Campo Band of Mission Indians	Ralph Goff, Chairperson	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Ewiaapaayp Tribal Office	Robert Pinto, Chairperson Michael Garcia, Vice Chairperson	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Jamul Indian Village	Erica Pinto	1. USPS 2. Phone	1. 08/29/2017 2. 10/27/2017	1. No response 2. Left voicemail

Tribal Affiliation	Individual Contacted	Method of Contact	Date of Contact	Response Received
La Posta Band of Mission Indians	Javaughn Miller Gwendolyn Parada, Chairperson	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Los Coyotes Band of Cahuilla and Cupeno Indians	John Perada, Environmental Director Shane Chapparosa, Chairman	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Manzanita Band of Kumeyaay Nation	Nick Elliot, Cultural Resources Coordinator	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Morongo Band of Mission Indians	Robert Martin, Chairperson Denisa Torres, Cultural Resources Manager	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Ramona Band of Cahuilla Mission Indians	John Gomez, Environmental Coordinator Joseph Hamilton, Chairman	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
San Pasqual Band of Indians	John Flores, Environmental Coordinator	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
San Pasqual Band of Mission Indians	Allen E. Lawson, Chairperson	1. USPS 2. Email 3. Phone	1. 08/29/2017 2. 10/27/2017 3. 10/27/2017	1. No response 2. Incorrect email 3. Left voicemail
Santa Rosa Band of Mission Indians	Steven Estrada, Chairperson	1. USPS 2. Phone	1. 08/29/2017 2. 10/27/2017	1. No response 2. Left voicemail

Tribal Affiliation	Individual Contacted	Method of Contact	Date of Contact	Response Received
Soboba Band of Luiseno Indians	Carrie Garcia, Cultural Resources Manager Joseph Ontivero, Cultural Resources Department	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response
Sycuan Band of the Kumeyaay Nation	Lisa Haws, Cultural Resources Manager Cody Martinez, Chairperson	1. USPS 2. Email	1. 08/29/2017 2. 10/27/2017	1. No response 2. No Response

Tribal Affiliation	Individual Contacted	Method of Contact	Date of Contact	Response Received
Torres-Martinez Desert Cahuilla Indians	Michael Mirelez, Cultural Resources Chairperson	1. USPS 2. Phone 3. Email	1. 08/29/2017 2. 10/27/2017 3. 10/27/2017	1. No Response 2. Requested to send letter via email. 3. We have reviewed the information pertaining to your project and have found it is within an area with known Village sites which makes it a strong possibility to disturb Cremation and Cultural artifacts that are of importance to the Tribe. The Tribe understands that this is an inquiry to collect information pertaining to the area the project is located on to assess the sensitivity of the area. However the Tribe is only willing to share the details of that information with the project proponents and lead agency. The Tribe is requesting that you list its response in your report so that the wishes of the Tribe are documented. The Torres Martinez Desert Cahuilla Indians are requesting the following: 1. Conduct a formal consultation with the project proponents and lead agency. 2. Native American Monitor(s) from the Torres Martinez Desert Cahuilla Indians be present during any ground disturbing proceedings. Including surveys and archaeological testing. 3. Copies of all existing cultural studies and related records. (received 10/27/2017)

Tribal Affiliation	Individual Contacted	Method of Contact	Date of Contact	Response Received
Twenty-Nine Palms Band of Mission Indians	Anthony Madrigal, THPO Darrell Mike, Chairperson	1. USPS	1. 08/29/2017	The project is adjacent to the Chemehuevi Traditional Use Area. For this reason, the THPO will request the Cultural Report from the Coachella Valley Water District when it is completed. (received 09/26/2017)
Viejas Band of Kumeyaay Indians	Julie Hagen, Cultural Resources Robert J. Welch, Jr., Chairperson	1. USPS	1. 08/29/2017	The project site has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process. (received 09/07/2017)

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710

August ~~22~~ 23, 2017

Amy Gusick
California State University at San Bernardino

Sent by E-mail: amy.gusick@csusb.edu

RE: Proposed Sunbird Mobile Home Park Sewer System Project, Community of Valerie; Valerie USGS Quadrangle, Riverside County, California

Dear Ms. Gusick:

Attached is a list of tribes that have cultural and traditional affiliation to the areas of potential project effect (APE) referenced above. I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult, as may be required under particular state statutes. If a response has not been received within two weeks of notification, the Native American Heritage Commission (NAHC) requests that you follow-up with a telephone call to ensure that the project information has been received.

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* (SLF) was completed for the area of potential project effect (APE) for the above referenced project. Sites have been located within the APE you provided that may be impacted by the project. Please immediately contact the Torres-Martinez Desert Cahuilla Indians at (760) 397-0300 for more information about these sites.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contact List
Riverside County
8/23/2017

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Augustine Band of Cahuilla Mission Indians
Amanda Vance, Chairperson
P.O. Box 846 — Cahuilla
Coachella, CA, 92236
Phone: (760) 398 - 4722
Fax: (760) 369-7161

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway — Cahuilla
Indio, CA, 92203
Phone: (760) 342 - 2593
Fax: (760) 347-7880

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U.S. Highway 371 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 5549
Fax: (951) 763-2808
Chairman@cahuilla.net

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 6315
Fax: (619) 445-9126
michaelg@leaningrock.net

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Sunbird Mobile Home Park Sewer System Project, Riverside County.

Los Coyotes Band of Mission Indians
John Perada, Environmental Director
P. O. Box 189 — Cahuilla
Warner Springs, CA, 92086
Phone: (760) 782 - 0712
Fax: (760) 782-2730

Los Coyotes Band of Mission Indians
Shane Chapparosa, Chairperson
P.O. Box 189 — Cahuilla
Warner Springs, CA, 92086-0189
Phone: (760) 782 - 0711
Fax: (760) 782-0712
Chapparosa@msn.com

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Manzanita Band of Kumeyaay Nation
Nick Elliott, Cultural Resources Coordinator
P. O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957
nickmepa@yahoo.com

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Rroad — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 849 - 8807
Fax: (951) 922-8146

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Rroad — Cahuilla, Serrano
Banning, CA, 92220
Phone: (951) 849 - 8807
Fax: (951) 922-8146
dtorres@morongo-nsn.gov

Ramona Band of Cahuilla Mission Indians
Joseph Hamilton, Chairperson
P.O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
admin@ramonatribe.com

Ramona Band of Cahuilla Mission Indians
John Gomez, Environmental Coordinator
P. O. Box 391670 — Cahuilla
Anza, CA, 92539
Phone: (951) 763 - 4105
Fax: (951) 763-4325
jgomez@ramonatribe.com

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Sunbird Mobile Home Park Sewer System Project, Riverside County.

Santa Rosa Band of Mission Indians
(951) 659-2700Steven Estrada, Chairperson
P.O. Box 391820 — Cahuilla
Anza, CA, 92539
Phone: (951) 659 - 2700
Fax: (951) 659-2228

Soboba Band of Luiseno Indians
Scott Cozart, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951) 654 - 2765
Fax: (951) 654-4198
carrieg@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 312 - 1935
lhaws@sycuan-nsn.gov

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 — Cahuilla
Thermal, CA, 92274
Phone: (760) 399 - 0022
Fax: (760) 397-8146
mmirelez@tmdci.org

Twenty-Nine Palms Band of Mission Indians
Anthony Madrigal, Tribal Historic Preservation Officer
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 775 - 3259
amadrigal@29palmsbomi-nsn.gov

Twenty-Nine Palms Band of Mission Indians
Darrell Mike, Chairperson
46-200 Harrison Place — Chemehuevi
Coachella, CA, 92236
Phone: (760) 863 - 2444
Fax: (760) 863-2449
29chairman@29palmsbomi-nsn.gov

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Sunbird Mobile Home Park Sewer System Project, Riverside County.

Viejas Band of Kumeyaay Indians
Robert Welch, Chairperson
1 Viejas Grade Road
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

Kumeyaay

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Sunbird Mobile Home Park Sewer System Project, Riverside County.

STATE OF CALIFORNIA **Edmund G. Brown, Jr., Governor**

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100 West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

October 29, 2018

Amy Gusick

California state University of San Bernardino, Dept Anthropolgy

VIA Email to: agusick@gmail.com

RE: Addendum to Sunbird Mobile Home Park Sewer Project,
Riverside County.

Dear Ms. Gusick::
A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the Torres-Martinez Desert Cahuilla Indians on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: katy.sanchez@nahc.ca.gov.
Sincerely,

Katy Sanchez

Katy Sanchez
Associate Environmental Planner

Attachment

Native American Heritage Commission
Native American Contacts List
10/29/2018

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive Cahuilla
Palm Springs ,CA 92264
(760) 699-6800
(760) 699-6919 Fax

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director, THPO
5401 Dinah Shore Drive Cahuilla
Palm Springs ,CA 92264
ACBCI-THPO@aguacaliente.net
(760) 699-6907
(760) 699-6924 Fax

Augustine Band of Cahuilla Indians
Amanda Vance, Chairperson
P.O. Box 846 Cahuilla
Coachella ,CA 92236
(760) 398-4722

Augustine Band of Cahuilla Indians
Karen Kupcha
P.O. Box 849 Cahuilla
Coachella ,CA 92236
(760) 398-4722

Cabazon Band of Mission Indians
Doug Welmas, Chairperson
84-245 Indio Springs Parkway Cahuilla
Indio ,CA 92203
(760) 342-2593
(760) 347-7880 Fax

Cabazon Band of Mission Indians
Judy Stapp, Director of Cultural Affairs
84-245 Indio Springs Parkway Cahuilla
Indio ,CA 92203
jstapp@cabazonindians-nsn.gov
(760) 342-2593
(760) 347-7880 Fax

Cahuilla Band of Indians
Daniel Salgado, Chairperson
52701 U. S. Highway 371 Cahuilla
Anza ,CA 92539
Chairman@cahuilla.net
(951) 763-5549
(951) 763-2808

Ernest H. Siva
Morongo Band of Mission Indians Tribal Elder
9570 Mias Canyon Road Serrano
Banning ,CA 92220 Cahuilla
siva@dishmail.net
(951) 849-4676

Los Coyotes Band of Cahuilla and Cupeno Indians
Shane Chapparosa, Chairman
P.O. Box 189 Cahuilla
Warner Springs ,CA 92086-018
Chapparosa@msn.com
(760) 782-0711
(760) 782-0712 Fax

Los Coyotes Band of Cahuilla and Cupeno Indians
Janice Elzendnga, Tribal Administrator
P.O. Box 189 Cahuilla
Warner Springs ,CA 92086-018
(760) 782-0711
(760) 782-2701 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Addendum to Sunbird Mobile Home Park Sewer Project, Riverside County.

Native American Heritage Commission
Native American Contacts List
10/29/2018

Los Coyotes Band of Cahuilla and Cupeno Indians
John, Perada, Environmental Director
P.O. Box 189 Cahuilla
Warner Springs ,CA 92086-018
(760) 782-0712
(760) 782-2730 Fax

Morongo Band of Mission Indians
Denisa Torres, Cultural Resources Manager
12700 Pumarra Road Cahuilla
Banning ,CA 92220 Serrano
dtorres@morongo-nsn.gov
(951) 849-8807

Morongo Band of Mission Indians
Robert Martin, Chairperson
12700 Pumarra Road Cahuilla
Banning ,CA 92220 Serrano
(951) 849-8807
(951) 922-8146 Fax

Ramona Band of Cahuilla
Joseph Hamilton, Chairman
P.O. Box 391670 Cahuilla
Anza ,CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Ramona Band of Cahuilla
Manuel Hamilton, Vice Chairperson
P.O. Box 391670 Cahuilla
Anza ,CA 92539
admin@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Ramona Band of Cahuilla
John Gomez, Environmental Coordinator
P.O. Box 391670 Cahuilla
Anza ,CA 92539
Jgomez@ramonatribe.com
(951) 763-4105
(951) 763-4325 Fax

Santa Rosa Band of Cahuilla Indians
Steven Estrada, Chairman
P.O. Box 391820 Cahuilla
Anza ,CA 92539
(951) 659-2700
(951) 659-2228 Fax

Santa Rosa Band of Cahuilla Indians
Terry Hughes, Tribal Administrator
P.O. Box 391820 Cahuilla
Anza ,CA 92539
thughes@santarosacahuilla-nsn.gov
(951) 659-2700
(951) 659-2228 Fax

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P.O. Box 487 Luiseno
San Jacinto ,CA 92581 Cahuilla
carrieg@soboba-nsn.gov
(951) 654-2765
(951) 654-4198 Fax

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 Luiseno
San Jacinto ,CA 92581 Cahuilla
jontiveros@soboba-nsn.gov
(951) 663-5279
(951) 654-4198 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Addendum to Sunbird Mobile Home Park Sewer Project, Riverside County.

Native American Heritage Commission
Native American Contacts List
10/29/2018

Soboba Band of Luiseno Indians
Scott Cozart, Chairman
P. O. Box 487 Luiseno
San Jacinto ,CA 92583 Cahuilla
(951) 654-2765
(951) 654-4198

Torres-Martinez Desert Cahuilla Indians
Thomas Tortez, Chairperson
P.O. Box 1160 Cahuilla
Thermal ,CA 92274
tmchair@torresmartinez.org
(760) 397-0300
(760) 397-8146 Fax

Torres-Martinez Desert Cahuilla Indians
Michael Mirelez, Cultural Resource Coordinator
P.O. Box 1160 Cahuilla
Thermal ,CA 92274
mmirelez@tmdci.org
(760) 399-0022, Ext. 1213
(760) 397-8146 Fax

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes for the proposed:
Addendum to Sunbird Mobile Home Park Sewer Project, Riverside County.

From:	Sarah Bliss
To:	Amy Gusick
Cc:	TNP Consultation
Subject:	Sunbird Mobile Home Park Sewer System (29 Palms BOMI)
Date:	Tuesday, September 26, 2017 3:34:44 PM
Attachments:	image001.png

Hello Dr. Gusick,

In regards to the Sunbird Mobile Home Park Sewer System, The Tribal Historic Preservation Office (THPO) is not aware of any additional cultural resources or any Tribal Cultural Resources, as defined California Public Resources Code § 21074 (a) (1) (A)-(B), within the project area. However, the project is adjacent to the Chemehuevi Traditional Use Area. For this reason, the THPO will request the Cultural Report from the Coachella Valley Water District when it is completed.

If you have any questions, please do not hesitate to contact the Tribal Historic Preservation Office at (760) 775-3259 or by email: TNPConsultation@29palmsbomi-nsn.gov.

Thank you,

Sarah Bliss
Twenty-Nine Palms Band of Mission Indians
Tribal Cultural Specialist
46-200 Harrison Place, Coachella, CA 92236
Ofc: (760) 863-2489
E-mail: sbliss@29palmsbomi-nsn.gov

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-011-2017-004

September 20, 2017

[VIA EMAIL TO:amy.gusick@csusb.edu]
California State University, San Bernardino
Ms. Amy Gusick
5500 University Parkway
San Bernardino, CA 92407

Re: Sunbird Mobile Home Park Sewer System

Dear Ms. Amy Gusick,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Sunbird Mobil Home Park Sewer System project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

> *At this time ACBCI has no concerns and defers to Torres Martinez. This letter shall conclude our consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6829. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Katie Croft

Katie Croft
Archaeologist
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-011-2017-004

November 30, 2018

[VIA EMAIL TO:amy.gusick@csusb.edu]
California State University, San Bernardino
Ms. Amy Gusick
5500 University Parkway
San Bernardino, CA 92407

Re: Sunbird/Martinez Road Septic to Sewer Conversion

Dear Ms. Amy Gusick,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Sunbird Mobile Home Park Sewer System project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*At this time ACBCI defers to Torres Martinez. This letter shall conclude our consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Archaeological Technician
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

MORONGO BAND OF MISSION INDIANS
TRIBAL HISTORIC PRESERVATION OFFICE
12700 PUMARRA RD BANNING, CA 92220
OFFICE 951-755-5259 FAX 951-572-6004

11/27/2018

Re: Sunbird Mobile Home Park Sewer System Project

Amy Gusick, Ph.D,
Archaeologist

The Tribal Historic Preservation Office of the Morongo Band of Mission Indians acknowledges your letter on the above project. We appreciate efforts to safeguard tribal cultural resources through decisions informed by tradition, custom and knowledge of individual federally recognized tribal governments that are the subject-matter experts involving the significance and integrity of these resources.

The proposed project is within an area very sensitive to Cahuilla tribal cultural resources. The project is in an area that our office normally would defer to nearby tribal governments if they are engaged in government-to-government consultation with the lead agency. Our office has no record of the Coachella Valley Water District contacting us for AB 52 consultation. Please include our letter in your final report to your client and lead agency.

Tribal cultural resources are non-renewable resources that too often are disappearing from the Southern California landscape. Avoidance is the preferred alternative over removal, reburial or tribal monitoring. We look forward to working with you to protect these precious resources out of respect for those who left them, and for the people of today and for generations to come.

Sincerely,

Travis Armstrong, JD, MA
Tribal Historic Preservation Officer
Morongo Band of Mission Indians
Email: thpo@morongo-nsn.gov
Phone: (951) 755-5259

VIEJAS
TRIBAL GOVERNMENT

P.O. Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 619.445.3810
Fax: 619.445.5337
viejas.com

September 7, 2017

Amy Gusick
Archaeologist
CSU San Bernardino
55000 University Parkway
San Bernardino, CA 92407

Re: Sunbird Mobile Home Park Sewer System Project

Dear Ms. Gusick,

The Viejas Band of Kumeyaay Indians ("Viejas") has reviewed the proposed project and at this time we have determined that the project site is has little cultural significance or ties to Viejas. We further recommend that you contact the tribe(s) closest to the cultural resources. We, however, request to be informed of any new developments such as inadvertent discovery of cultural artifacts, cremation sites, or human remains in order for us to reevaluate our participation in the government-to-government consultation process.

Please do not hesitate to contact me if you have further questions. Please call Ernest Pingleton at 619-659-2314 or me at 619-659-2312, or email, epingleton@viejas-nsn.gov or rteran@viejas-nsn.gov. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

RE: Sunbird Mobile Home Park Sewer Project

Michael Mirelez <mmirelez@tmdci.org>

Fri 10/27/2017 10:07 AM

To: Amy Gusick <Amy.Gusick@csusb.edu>;

Cc: Joseph Lavergne <Jlavergne@tmtanf.org>;

Ms. Gusick –

Thank you for providing the Torres Martinez Desert Cahuilla Indians with notification of your project. We have reviewed the information pertaining to your project and have found it is within an area with known Village sites which makes it a strong possibility to disturb Cremation and Cultural artifacts that are of importance to the Tribe.

The Tribe understands that this is an inquiry to collect information pertaining to the area the project is located on to assess the sensitivity of the area. However the Tribe is only willing to share the details of that information with the project proponents and lead agency. The Tribe is requesting that you list its response in your report so that the wishes of the Tribe are documented.

The Torres Martinez Desert Cahuilla Indians are requesting the following:

1. Conduct a formal consultation with the project proponents and lead agency.

2. Native American Monitor(s) from the Torres Martinez Desert Cahuilla Indians be present during any ground disturbing proceedings. Including surveys and archaeological testing.

3. Copies of all existing cultural studies and related records

Respectfully,
Michael Mirelez
Cultural Resource Coordinator
Torres-Martinez DCI
Office: 760-397-0300 Ext:1213
Cell: 760-399-0022
Email:mmirelez@tmdci.org

From: Amy Gusick [mailto:Amy.Gusick@csusb.edu]
Sent: Friday, October 27, 2017 9:43 AM
To: Michael Mirelez
Subject: Sunbird Mobile Home Park Sewer Project

Hi Michael,
Thank you for taking the time to chat with me today. As we discussed, the Water Resources and Policy Initiative, a California State University entity, is proposing to bring a sewer system hook up to the Sunbird Mobile Home park located in Thermal, CA. Attached is the project scoping letter that was previously sent that describes the project and shows the location of where the sewer pipe would be installed. The Coachella Valley Water District is the permitting agency and I will contact them to let them know you would like to discuss the project with them.

If you have any question or concerns, please feel free to contact me via my cell phone: 415.828.6964

Thank you,
Amy

Amy E. Gusick
Assistant Professor
Director, Graduate Program in Applied Archaeology
Department of Anthropology
California State University, San Bernardino
5500 University Parkway
San Bernardino, CA 92407-2397
Phone: 909.537.5520
Fax: 909.537.7645

The information transmitted is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If the reader of this message is not the intended recipient, you are hereby notified that you have received this message in error and that any review, dissemination, distribution or copying of this message including any attachments is strictly prohibited. If you received this in error, please contact the sender and delete the material.

Gmail

Amy Gusick <agusick@gmail.com>

Sewer line

GW Res <grestmtm@gmail.com> Fri, Dec 7, 2018 at 2:34 PM
To: Amy Gusick <agusick@gmail.com>
Cc: jlavergne@tmdci.org, Robert Powell <rpowell@tmtanf.org>

I understand disturbing through paving. Can you please add These old road have 2ft to 3ft of disturbance and that's stretching it most of disturbance is surface grading and laying minimum fill or gravel.
The trenching here is going to maybe 8ft or a maybe 10ft of undisturbed subsurface. We're going to have to agree to disagree because this here is common practice to come to our reservation and tell us there is nothing here when we know our history we understand our past. This is way it would be easier to take my name out of their report.
Respectfully,

Gary Wayne Resvaloso Jr.
Torres Martinez Tribal MLD

70-555 Pierce St
Thermal, Ca , 92274
(442) 256-2964
grestmtm@gmail.com

On Dec 7, 2018 1:39 PM, "Amy Gusick" <agusick@gmail.com> wrote:

> Thank you, Gary. I will definitely add in your concerns. Under the section of the report that discusses Martinez Road, I do talk about the fact that it follows the same alignment as the Bradshaw Trail. The no adverse effect comes from the fact that this section of the Martinez Historic District has already been impacted through paving, which required grading and fill material. Trenching back through that will not cause additional impacts to the resource, but caution should be taken if trenching goes below the fill.
>
> Thank you for pointing out that I did not include the need for a curation plan. Under the inadvertent discoveries section, I will include the need for a curation plan in the event of discoveries in the field.
>
> Thank you again for sharing your concerns and I will be sure to include them in the report.
>
> Again, if you would like to talk on the phone or meet in person, I would be more than happy to arrange that.
>
> Regards,
> Amy
>
> On Fri, Dec 7, 2018 at 1:14 PM GW Res <grestmtm@gmail.com> wrote:
>
>> Yes i understand communication yes if you want to keep my name in this report please state I do not agree also let them know that Martinez road is part of the Old Wagon Trail the original Bradshaw Trail so I do not understand how you can come to that conclusion without testing. I understand the sewer project. Is located in the middle of the road and testing maybe impossible but to say no adverse effect would be wrong also this sit in the middel of the Martinez historical district which is section 15 and 16 know the reason it is 2 square miles is because it is part of our Traditional landscape which stretches from Avenue 74 to and 56 ave. From from La Mesa all the way down I I Auga Dulce. Also I understand it to rent and buy our tribes Administration and I don't agree with the conclusions Also I don't agree no mitigated plan or curation plan.
>>
>> Respectfully,
>>
>> Gary Wayne Resvaloso Jr.
>> Torres Martinez Tribal MLD
>>
>> 70-555 Pierce St
>> Thermal, Ca , 92274
>> (442) 256-2964
>> grestmtm@gmail.com
>>
>> On Dec 7, 2018 12:36 PM, "Gmail" <agusick@gmail.com> wrote:

Hi Gary,
Thank you for your message and for meeting with me on Nov. 26 to discuss the important resources in the vicinity of the project APE.

Your inclusion in the report is strictly to record communication efforts and any information provided to me. It, in no way, is meant to suggest that you concur with the results of the report. Per 106 regulations, I am required to report any communication efforts, but I will include in the report that you do not agree with the findings.

I share your concern for the resources and the management recommendations that I proposed are actually more stringent than the recommendations proposed the last time that there was a pipeline installed along this section of road (Eddy and Smallwood 2011). There is a possibility for encountering cultural material if the excavations extend below the fill material that exists in this road section, and I am recommending incremental trenching and full time archaeological and tribal monitoring. If material is encountered, the monitors can immediately stop the excavations and an evaluation can be completed at that time. I discussed this approach with Mike Mirelez on Nov 26.

I am happy to discuss this further with you at any time. Please let me know if you would like to arrange a phone call or meeting.

Regards,
Amy Gusick

On Dec 7, 2018, at 11:03 AM, GW Res <grestmtm@gmail.com> wrote:

Can you please take me name out of this report. The Martinez Road it part of the old Wagon Trail, Bradshaw Trail I don't agree with no adverse no adverse effects. There for i do not want my name associated with this document whatsoever so if you could please comply and take my name and MLD out of this document thank you.
Respectfully,

Gary Wayne Resvaloso Jr.
Torres Martinez Tribal MLD

70-555 Pierce St
Thermal, Ca , 92274
(442) 256-2964
grestmtm@gmail.com

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C

RESUMES OF KEY PERSONNEL

Amy E. Gusick
Department of Anthropology
Natural History Museum of Los Angeles County
900 Exposition Parkway
Los Angeles, CA 90007
E-mail: agusick@nhm.org

CURRENT POSITIONS

Associate Curator of Anthropology, Natural History Museum of Los Angeles County
NAGPRA Officer, Natural History Museum of Los Angeles County
Visiting Scholar, University of Southern California
Research Fellow, Pacific Slope Archaeological Laboratory**,** Oregon State University

DEGREES AWARDED

Ph.D. 2012 University of California, Santa Barbara, Department of Anthropology (Archaeology)
Dissertation: *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers, Santa Cruz Island, California*

M.A. 2007 University of California, Santa Barbara, Department of Anthropology (Archaeology)
Data Paper: *Prehistoric Fishing Practices on Santa Cruz Island: Evidence from CA-SCRI-195*

B.A. 1997 Seton Hall University, South Orange, Department of Communications (Journalism)

ACADEMIC AND PROFESSIONAL HONORS

Keynote Speaker, Society for California Archaeology Annual Meeting (2019)
Excellence in Leadership, HDR Pathfinder Award (2015)
Albert Spaulding/Elman Service Fellowship, University of California, Santa Barbara (2010 & 2011)
UC President's Dissertation Fellowship, Fletcher Jones Fellowship (2010)

PRIMARY RESEARCH INTERESTS

Pacific Rim Archaeology
Environmental Archaeology
California Archaeology
Archaeology of Maritime Societies
Zooarchaeology
Submerged Prehistoric Archaeology
Human Migration and Mobility
Peopling of the Americas
Paleogeography
Cultural Ecology
Human Behavioral Ecology
Geographic Information Systems (GIS)

GRANTS

2016 *The Eel Point Project: Re-evaluating a Trans-Holocene Record of Human-Coastal Interactions*. Council on Ocean Affairs, Science, and Technology ($19,838), PI

2016 *The Development of Socio-Political Complexity Among the Island Chumash*. College of Social and Behavioral Sciences, CSUSB ($4,500), PI

2016 *Discovering Oregon's Lost Coast: Finding and Studying Submerged Archaeological Sites and Landscapes on the Pacific Continental Shelf.* National Oceanic and Atmospheric Administration, Office of Ocean Exploration and Research Program ($350,000), Collaborator

2016 *Coastal and Desert Innovation within California.* Council on Ocean Affairs, Science, and Technology, Undergraduate Student Research Award ($1,500), Alexandra Bulato PI, Gusick Faculty Mentor

2015 *Archaeological and Biological Assessment of Submerged Landforms off the Pacific Coast*. Bureau of Ocean Energy Management ($1,099,659), Co-PI with Todd Braje, Jon Erlandson, and Loren Davis

2011 *The State of Underwater Archaeology for CRMs and Industry in Northern America: A View from the Pacific Coast.* Academic Senate Travel Grant, University of California ($1,030), PI

2011 *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers Santa Cruz Island*. Peter F. Paige Memorial Fund Grant ($1,920), PI

2009 *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers Santa Cruz Island*. National Science Foundation (NSF) Dissertation Improvement Grant ($14,680), PI

2009 *Mal de Mer no Mas: Searching for Early Underwater Sites in the Sea of Cortez*. National Oceanic and Atmospheric Administration, Office of Ocean Exploration and Research Program ($100,000), PI

2009 *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers, Santa Cruz Island, California*. American Philosophical Society Lewis and Clark Fund for Exploration and Research ($1,000), PI

2009 *Behavioral Adaptations and Variability of Early Holocene Hunter-Gatherers*. Humanities and Social Science Research Grant Program ($1,756), PI

2008 *Mal de Mer no Mas: Searching for Early Underwater Sites in the Sea of Cortez***.** National Geographic Society/Waitt Institute for Discovery Grant ($11,143), PI

2008 *Early Maritime Hunter-Gatherer Occupation and the Initial Human Migration into the New World, Santa Cruz Island, California*. Peter F. Paige Memorial Fund Grant ($2,264), PI

2007 *Early Maritime Hunter-Gatherer Occupation and the Initial Human Migration into the New World, Santa Cruz Island, California.* Mildred E. Mathias Grant ($2,500), PI

2007 *Radiocarbon Dating in Support of Early Holocene Research on Santa Cruz Island, California*. Peter F. Paige Memorial Fund Grant ($2,250), PI

2007 *Exploring Isla Espiritu Santo.* University of California, Santa Barbara, Pre-Dissertation Research Grant ($1,700), PI

TEACHING AND PROFESSIONAL EXPERIENCE

Associate Curator of California Archaeology, Natural History Museum of Los Angeles County (2018-present)

NAGPRA Officer, Natural History Museum of Los Angeles County (2018-present)

Assistant Professor, Anthropology Department, California State University, San Bernardino (2015-Dec. 2017). Courses Taught: *Archaeology of California; Archaeological Laboratory Analysis; Cultural Resource Management: Laws, Regulations, and Procedures; Cultural Resource Management in Practice*

Director, Graduate Program in Applied Archaeology, California State University, San Bernardino (2015-Dec. 2017)

Consultant, Pechanga Band of Luiseño Indians, Temecula (2015-Present)

Cultural Resources Program Manager, HDR, San Diego, California (2012-2015).

Teaching Associate, Anthropology Department, University of California, Santa Barbara (2011-2012). Courses Taught: *Introduction to Archaeology, Seacoast in Prehistory*

Teaching Assistant, Anthropology Department, University of California, Santa Barbara (2012). Course: *Field Methods in Archaeology*

Archaeological Technician (GS-7): National Park Service, Channel Islands National Park, California (2009-2012)

Supervisor, Archaeological Field School, *Living with War - Eveland & CW Cooper Sites*, *Illinois*, University of California, Santa Barbara (2011)

Instructor, California Archaeology Lab, University of California, Santa Barbara (2009-2012). Taught: Faunal analysis, lithic analysis

Assistant Coordinator, Central Coast Information Center, University of California, Santa Barbara (2007-2010)

Teaching Assistant, Anthropology Department, University of California, Santa Barbara (2006). Course: Cultural Anthropology

Teaching Assistant, Film and Media Studies Department, University of California, Santa Barbara (2006). Course: Introduction to Film

BOOKS

Gusick, Amy E.

(n.d) Working Title: *Early Maritime Hunter-Gatherers on Santa Cruz Island, California*. University of Utah Press. Book manuscript in preparation.

PEER-REVIEWED JOURNAL ARTICLES AND BOOK CHAPTERS

Gusick, Amy E., J. Maloney, R. King T. Braje

2019 Emerging Technologies in the Search for Submerged Cultural Landscapes of the Pacific Continental Shelf. In, Proceedings of the 50th Annual Offshore Technology Conference. Submitted.

Laws, A., J. Maloney, S. Klotsko, **A. E. Gusick**, T. Braje, D. Ball
2019 Submerged Marine Terraces Offshore the Northern Channel Islands, submitted to *Quaternary Research*.

Gusick, Amy E., J. Maloney, T. Braje, and J.M. Erlandson
2019 Above and Below the Waves: Advances in the Search for a Late Pleistocene Colonization of California's Islands. In, *The Archaeology of Island Colonization*, edited by M. Napolitano, J. Stone, B. Dinapoli. University Press of Florida, Gainesville. Submitted.

Gusick, A.E. and J.M. Erlandson
2019 Paleocoastal Landscapes, Marginality, and Initial Settlement of California's Islands. In, An *Archaeology of Abundance: Re-evaluating the Marginality of California's Islands*, edited by K. Gill, J. Erlandson, and M. Fauvelle, pp. 59-97. University of Florida Press, Gainesville.

Gusick, Amy E., T. Joslin, K. Braskett, and K. Tennessen
2018 An Analysis of Bias in Fish Bone Recovery from Differential Collection Techniques: A Case Study from Southern California. *Journal of Field Archaeology* 43(7): 1-15.

Jazwa, Christopher, **A.E. Gusick**, D.K. McKenzie, and K.M. Hoppa
2017 Low Density Lithic Scatter and the Distribution of Toolstone on Santa Rosa Island. *California Archeology* 9(2): 1-36.

Gusick, A.E and P. Robertshaw
2017 Internships in a New MA in Applied Archaeology Program. SAA Archaeological Record, 17(2): 17-18.

Erlandson, Jon M., K. Gill, **A.E. Gusick**, and A. Dorrler
2017 Historic Aerials and Their Use in Archaeological Site Identification: A Case Study from the Northern Channel Islands. *Journal of Island and Coastal Archeology*.

Erlandson, Jon M., K. Gill, M.A. Glassow, and **A.E. Gusick**
2016 Three Paleocoastal Lithic Sites on Santa Cruz Island, California. *PaleoAmerica*, 2(1): 1-4.

Gusick, A.E., M.A. Glassow, and P. Paige
2015 Fish Remains as Indicators of Changes in Environment, Technology, and Sociopolitical Organization on Santa Cruz Island. *Journal of California and Great Basin Anthropology,* 35(2): 217-236.

Mackie, Quentin, L.G. Davis, D. Fedje, D. McLaren, and **A.E. Gusick**
2013 Locating Pleistocene-age Submerged Archaeological Sites on the Northwest Coast: Current Status of Research and Future Directions. In *Paleoamerican Odyssey Conference Companion*, edited by M. Waters and K. Graff. Center for the Study of the First Americans, College Station.

Gusick, A.E.
2013 Early Maritime Hunter-Gatherer Occupation, Santa Cruz Island. In, *Small Islands, Big Implications: The California Channel Islands and their Archaeological Contribution*, edited by J. Perry and C. Jazwa, pp. 40-59. University of Utah Press, Salt Lake City.

Gusick, A.E. and L. Gamble
2013 The Original Santa Barbara: Syuxtun. *California Archaeology: News and Notes*, 5(1): 1-7.

Faught, Michael K. and **A.E. Gusick**
2011 Submerged Prehistory in the Americas. In, *Submerged Prehistory: the Underwater Archaeology of Ancient Sites and Landscapes*, edited by J. Benjamin, C. Bonsall, and C. Pickard, pp. 145-157. Oxbow Books, Oxford.

Gusick, A.E. and M.K. Faught
2011 Prehistoric Underwater Archaeology: A Nascent Subdiscipline Critical to Understanding Early Coastal Occupations and Migration Routes. In, *Trekking the Shore: Changing Coastlines and the Antiquity of Coastal Settlement,* edited by N. Bicho, J. Haws, L.G. Davis, pp. 27-50. Springer, New York.

Gusick, A.E.
2010 Contextualizing Baja California*. Journal of California and Great Basin Anthropology.* 30(1):1-4.

Gusick, Amy E. and L.G. Davis
2010 Exploring Baja California's Submerged Landscapes*. Journal of California and Great Basin Anthropology.* 30(1):35-50.

Todd J. Braje, Jon M. Erlandson, Torben C. Rick, Loren Davis, Tom Dillehay, Daryl W. Fedje, Duane Froese, **Amy Gusick**, Quentin Mackie, Duncan McLaren, Bonnie Pitblado, Jennifer Raff, Leslie Reeder-Myers, and Michael Waters
(n.d.) Fladmark +40: What Have We Learned About a Potential Pacific Coast Colonization of the Americas? *American Antiquity*. In preparation.

Flores, Carola, **A.E. Gusick,** and H.B. Thakar
(n.d.) Past Sea Surface Temperature and Human Intertidal Gathering during the Holocene on Santa Cruz Island: Evidence from Oxygen Isotope (δO^{18}) and Archaeomalacological Data. *Journal of Archaeological Science.* In preparation.

Gusick, Amy E. and A. Bulato
(n.d.) Old Collections and New Fieldwork: Understanding Development of Socio-Political Complexity at the Agua Santa Site, Santa Cruz Island. *California Archaeology*. In preparation.

EDITORIAL SERVICE

Gusick, A.E. (Guest Editor)
2010 *Journal of California and Great Basin Anthropology: Special Baja California Issue.* 30 (1).

SELECTED PROJECT AND FIELD EXPERIENCE

Co-Principal Investigator, *Rising Seas and Cultural Preservation on Yap, Micronesia* (2018-Present). Project focused on sea level rise histories for the island of Yap, Micronesia and the relation to initial colonization efforts and current impacts to the island's rich cultural resources.

Co-Principal Investigator, *The Changing Role of Women in Archaeology* (2017-Present). Project focused on the national trends in female professional archaeologists and the on the role of and attitude towards women in the industry.

Principal Investigator, *Re-Evaluating a Trans-Holocene Record of Human-Coastal Interactions* (2016-Present). Project focused on the Channel Islands of California to explore initial human colonization and the dynamic relationships between people, island environments, and climate change through time.

Principal Investigator, *The Agua Santa Project: Socio-Political Development on the California Channel Islands* (2015-Present). Project focused on the development of socio-political complexity among the Island Chumash who lived on the Northern Channel Islands of the southern California Bight.

Co-Principal Investigator, *Archaeological and Biological Assessment of Submerged Landforms in the Pacific Coast* (2015-Present). Interdisciplinary BOEM research concerned with mapping the sea floor to identify archaeological and biologically sensitive locations and to identify submerged archaeological deposits.

Principal Investigator, *Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers on Santa Cruz Island, California* (2007-Present). Project concerned with identifying local ecological variation and adaptive behavior and how these affect mobility, settlement, and foraging organization.

Principal Investigator, *Mal de Mer no Mas: Exploring Baja California's Submerged Landscapes. Isla Espíritu Santo, Baja California Sur, Mexico* (2006-2012). Researching eustatic sea level rise, ecological changes, and the inundation of late Pleistocene habitation sites using GIS modeling, underwater archaeological methods, and remote sensing equipment.

PROFESSIONAL SYMPOSIA ORGANIZED AND CHAIRED

2019 *Advances in Maritime Archaeology*. Society for California Archaeology 52nd Annual Meeting, co-organizer and co-chair

2018 *Maritime Archaeology in the 21st Century*. Society for California Archaeology 52nd Annual Meeting, co-organizer and co-chair

2017 *Technology, Travel Routes, and an Asistencia: Recent Graduate Student Research from California State University, San Bernardino*. Society of California Archaeology, organizer and chair

2012 *Site-Specific Perspectives on the Trans-Holocene Record in California*. Society for American Archaeology 77th Annual Meeting, organizer and chair

2011 *Dynamics.* 1st Annual Graduate Symposium, Department of Anthropology, University of California, Santa Barbara, co-organizer and co-chair

2009 *The Emerging Archaeology of Baja California: Challenging Paradigms of Isolation and Marginality*. Society for American Archaeology 74th Annual Meeting (with Loren Davis and Matthew des Lauriers), co-organizer and chair

2008 *New Directions in California Archaeology*. Society for American Archaeology 73rd Annual Meeting (with Elizabeth Sutton), co-organizer and co-chair

WORKSHOPS ORGANIZED/INSTRUCTED

2019 Instructor, Underwater Cultural Heritage Resources Awareness, Presented by the Advisory Council on Underwater Archaeology, Society for California Archaeology Annual Meeting, Sacramento

2018 Instructor, Underwater Cultural Heritage Resources Awareness, Presented by the Advisory Council on Underwater Archaeology, Society for California Archaeology Annual Meeting, San Diego

INVITED LECTURES AND ABSTRACTS PRESENTED

2019 Keynote Speaker. Defining a Maritime Cultural Landscape on the Northern Channel Islands, California. In the *53nd Annual Meeting of the Society for California Archaeology*, Sacramento, California. Meeting Theme: Women in Archaeology.

2019 Panelist. Curation in Crisis: Knowing the Unknown Through Potential Solutions. In the *53nd Annual Meeting of the Society for California Archaeology*, Sacramento, California.

2019 Discussant. Forum on Paleoethnobotanical Research Issues in California. In the *53nd Annual Meeting of the Society for California Archaeology*, Sacramento, California.

Gusick, Amy E., Maloney, J., King, R., Braje, T.
2019 Emerging Technologies in the Search for Submerged Cultural Landscapes of the Pacific Continental Shelf. In the *50th Annual Offshore Technology Conference*, Houston.

Gusick, Amy E., Perry, J., Teeter, W., Martinez, D., and Kennedy-Richardson, K.
2019 The Benefit of Inter island Studies for Trans Holocene Research: A Case Study from the Channel Islands of California. In the *Archaeological Institute of America 2019 Annual Meeting*, San Diego.

Gusick, Amy E., Perry, J., Teeter, W., Martinez, D., and Kennedy-Richardson, K.
2018 Trans-Holocene and Inter-Island Approaches to Human-Coastal Interactions: A Case Study from the Channel Islands of California. In the *117th Annual Meeting of the American Anthropological Association*, San Jose.

Gusick, Amy E.
2018 Santarosae and the Search for the First Americans. *National Geographic Explorer Lightning Talks*, Washington DC.

Gusick, Amy E.
2018 Lessons from the Past: The Grand Human Journey to the New World. Symposium sponsored by National Geographic. In the *83rd Annual Meeting of the Society for American Archaeology*, Washington D.C.

Gusick, Amy E., T. Joslin, K. Brasket, and K. Tennesen
2018 Analysis of Bias in Fish Bone Recovery from Differential Collection and Processing Techniques: a Case Study from Southern California. In the *52nd Annual Meeting of the Society for California Archaeology*, San Diego, California.

Dodds, Tricia and **Gusick, Amy E.**
2018 Maritime Archaeology: A Bright Future Lies Ahead. In the *52nd Annual Meeting of the Society for California Archaeology*, San Diego, California.

Tahiry, H., Maloney, J., Klotsko, S., **Gusick, Amy E.**, Braje, T., and D. Ball
2018 Examining Paleodrainage Evolution since the Last Glacial Maximum, Northern Channel Islands, California, USA. In the *Geological Society of American 2018 Annual Meeting,* Indianapolis, Indiana.

Laws, A., Maloney, J., Klotsko, S., **Gusick, Amy E.**, Braje, T., and D. Ball
2018 Using high-resolution Chirp subbottom data to map submerged paleoshorelines: Implications for uplift rates and archaeological sites, Northern Channel Islands, California, USA. Poster presented at the *Geological Society of American 2018 Annual Meeting*, Indianapolis, Indiana.

Skakun, M., Maloney, J., Klotsko, S., **Gusick, Amy E.**, Davis, L., Nyers, A., Braje, T., and D. Ball
2018 Assessing Controls on Paleodrainage Morphology on eh Continental Shelf Offshore Central Oregon. Poster presented at the *Geological Society of American 2018 Annual Meeting*, Indianapolis, Indiana.

King, R., Maloney, J., Constable, S., **Gusick, Amy E.**, Braje, T., and D. Ball
2018 Feasibility of Detecting submerged landforms and archaeological resources using controlled source electromagnetic methods. Poster presented at the *American Geophysical Union Fall 2018 Annual Meetin*g, Washington D.C.

Maloney, J., Klotsko, S., Tahiry, H., Nyers, A., **Gusick, Amy E.**, Braje, T., and D. Ball
2018 Shelf Stratigraphy on the northern Channel Islands platform, Offshore southern California. Poster presented at the *American Geophysical Union Fall 2018 Annual Meeting*, Washington D.C.

Gusick, Amy E.
2017 Small Islands, Big Impact: The Channel Islands National Park and its Contribution to Understanding Initial Human Occupation of the New World. In the *23rd Annual Meeting of the Pre-Columbian Society of Washington D.C.*, Washington D.C.

Gusick, Amy E., J. Maloney, T. Braje, and J.M. Erlandson
2017 Above and Below the Waves: Advances in the Search for a Late Pleistocene Colonization of California's Islands. In the *82nd Annual Meeting of the Society for American Archaeology*, Vancouver, British Colombia.

Gusick, Amy E.
2017 The Changing Role of Women in Applied Archaeology? In the *51st Annual Meeting of the Society for California Archaeology*, Yosemite, California.

Gusick, Amy E. and A. Bulato
2016 Old Collections and New Fieldwork: Understanding Development of Socio-Political Complexity at the Agua Santa Site, Santa Cruz Island. In the *9th Annual Channel Island Symposium*, Ventura, California.

Flores, Carola, **A.E. Gusick,** and H.B. Thakar
2016 Past Sea Surface Temperature and Human Intertidal Gathering during the Holocene on Santa Cruz Island: Evidence from Oxygen Isotope (δO^{18}) and Archaeomalacological Data. In the *9th Annual Channel Island Symposium*, Ventura, California.

Braje, Todd J., J. Maloney, D. Ball, L.G. Davis, N. Driscoll, J. Dugan, J. M. Erlandson, **A.E. Gusick**, M. Page, R. Miller, L. Reeder-Myers, A. Nyers, and D. Schroeder
2016 Mapping the Submerged Landscapes of Southern California and Oregon: Archaeological, Biological, and Geological Implications. In the *9th Annual Channel Island Symposium*, Ventura, California.

Jon M. Erlandson, D. Ball, T. Braje, L.G. Davis, K. Gill, **A.E. Gusick,** J. Maloney, A. Nyers, L. Reeder-Myers, and D. Schroeder
2016 Crescent Bay: Reconstructing the Geography and Human Use of a Paleo-Landscape on the South Shore of Santarosae Island. In the *9th Annual Channel Island Symposium*, Ventura, California.

2016 Panelist. CRM and the Academy: Crafting the Dialog for Facing Educational and Industry Challenges. In the *22nd Annual Meeting of the American Cultural Resources Association*, Palm Springs, California.

2015 Discussant. Issues in Submerged Prehistoric Archaeology in the Americas. In the *81st Annual Meeting of the Society for American Archaeology*, Orlando, Florida.

Gusick, Amy E. and J.M. Erlandson
2015 Why Did Paleocoastal People Settle California's Islands? In the *80th Annual Meeting of the Society for American Archaeology*, San Francisco, California.

Gusick, Amy E.
2014 A Balancing Act: Energetic Yield Objectives and Non-Food Resources during the Early Holocene on Santa Cruz Island. In the *79th Annual Meeting of the Society for American Archaeology*, Austin, Texas.

Mackie, Quentin, L.G. Davis, D. Fedje, D. McLaren, **Amy E. Gusick**
2013 Locating Pleistocene-age Submerged Archaeological Sites on the Northwest Coast: Current Status of Research and Future Directions. In the *Paleoamerican Odyssey Conference,* Center for the Study of the First Americans, College Station, Texas.

Gusick, Amy E.
2013 Patterns of lithic reduction and mobility during the Early Holocene on Santa Cruz Island. In the *78th Annual Meeting of the Society for American Archaeology*, Honolulu, Hawaii.

Gusick, Amy E. and C. Jazwa
2012 Inland Archaeological Survey of Northern Santa Rosa Island. In the *4th Annual Channel Island Symposium*, Ventura, California.

Gusick, Amy E.
2012 A 10,000-year-old Site on Santa Cruz Island. In the *77th Annual Meeting of the Society for American Archaeology*, Saint Louis, Missouri.

Vanderwarker, Amber, G. Wilson, K. Hoppa, and **Amy E. Gusick**
2012 Culture Contact, Earth Ovens, and Persistent Foodways: Archaeobotanical Analysis of a Failed Corn Roast from the C.W. Cooper Site in the Central Illinois Valley. In the *77th Annual Meeting of the Society for American Archaeology*, Saint Louis, Missouri.

Gusick, Amy E., M.A. Glassow, and P. Paige
2012 Let Them Eat Fish!: Fishing Intensification During the Middle and Late Periods on Santa Cruz Island. In the *46th Annual Society for California Archaeology* Meeting, San Diego, California.

Gusick, Amy E., K. Hoppa, G.W. Wilson and A.M. VanDerwarker
2011 The Form and Function of Early Mississippian Earth Ovens in the Central Illinois River Valley. In the *68th Annual Meeting for the Southeastern Archaeological Conference,* Jacksonville, Florida.

Gusick, Amy E. and M. K. Faught
2011 The State of Underwater Archaeology for CRMs and Industry in Northern America: A View from the Pacific Coast. In the *IKUWA 4 Conference*, Zadar, Croatia.

Gusick, Amy E.
2011 Behavioral Adaptations and Mobility of Early Holocene Hunter-Gatherers, Santa Cruz Island, California. In the *76th Annual Meeting of the Society for American Archaeolog*y, Sacramento, California.

2010 Exploring Mexico's Submerged Coast. Invited speaking event, *Fourth Annual Explorers Symposium* at National Geographic Society, Washington DC.

Gusick, Amy E
2010 Punta Arena: The Early Years. In the *75th Annual Meeting of the Society for American Archaeology*, St. Louis, Missouri.

Gusick, Amy E. and L.G. Davis
2010 Mal de Mer no Mas: Discovery of an Underwater Site in the Sea of Cortez. In the *Annual Meeting of the Society for Underwater and Historic Archaeology*, Amelia Island, Florida.

Gusick, Amy E. and L.G. Davis
2009 Mal de Mer no Mas: Discovery of an Underwater Site in the Sea of Cortez. In the *74th Annual Meeting of the Society for American Archaeology*, Atlanta, Georgia.

Gusick, Amy E.
2008 Early Maritime Hunter-Gatherer Occupation, Santa Cruz Island, California. In the *Southern Data Sharing Meeting of the Society for California Archaeology*, Camarillo, California.

Gusick, Amy E.
2008 Prehistoric Fishing Practices on Santa Cruz Island. In the *73rd Annual Meeting of the Society for American Archaeology*, Vancouver, British Columbia.

Voorhies, Barbara, **Amy E. Gusick**, T.A. Wake and D.J. Kennett
2007 Subsistence Practices at Puerto Marqués Guerrero, Mexico During the Late Archaic Period. In the *72nd Annual Meeting of the Society for American Archaeology,* Vancouver, British Columbia.

Gusick, Amy E.
2007 *Early Maritime Hunter-Gatherer Occupation and the Initial Human Migration into the New World, Santa Cruz Island, California.* In the *4th Annual Mathias Symposium*, Bodega Bay.

Gusick, Amy E. and L.G. Davis
2007 Mal De Mar No Mas: Searching for Early Underwater Sites in the Sea of Cortez. In the *72nd Annual Meeting of the Society for American Archaeology*, Austin Texas.

Gusick, Amy E., S. Delane and A. Jensen
2004 Correlation Between Beach Ridges and Sea Level Changes, St. Vincent Island. In the *Geological Society of America Southeastern Section Annual Conference*, Biloxi, Mississippi.

POPULAR MEDIA HIGHLIGHTING RESEARCH

History Channel (Television)
2018 America's Lost Civilization. *Legends of the Lost with Meghan Fox*, December 18, 2018.

Wade, L. (Article)
2017 On the Trail of Ancient Mariners. *Science Magazine*, August 10, 2017

Tonelli, M. (Article)
2017 Job-Market Diaries: An Archaeology Professor. *Chronical of Higher Education-Vitae*. https://chroniclevitae.com/news/1710-job-market-diaries-an-archaeology-professor

Center for the Study of First Americans (Article)
2015 Looking for Sites at the Water's Edge. *Mammoth Trumpet* 30:4, pp. 1-7. http://csfa.tamu.edu/wp-content/uploads/2016/10/mt30-4c.pdf

Voice America Internet Radio (Podcast)
2011 Indiana Jones: Myth, Reality, and 21st Century Archaeology (Guest) http://www.voiceamerica.com/episode/58312/indiana-jones-myths-realities-and-21st-century-

National Oceanic and Atmospheric Association (Website)
2010 Exploring Baja California's Submerged Landscapes Website http://oceanexplorer.noaa.gov/explorations/10cortez/welcome.html

National Geographic Society (Website)
2010 Exploring Baja California's Submerged Landscapes Website http://www.nationalgeographic.com/field/projects/cortez-waitt-project

Morton, M.C (Article)
2010 Archaeologists Head Out to Sea: New Technologies Aid in the Offshore Search for the First American*s. Earth Magazine*, February 2010, pp. 28-33.

Center for the Study of First Americans (Article)
2009 Putting Muscle into Coastal-Entry Research. *Mammoth Trumpet* 24:3, pp. 8-11. http://csfa.tamu.edu/wp-content/uploads/2015/12/Vol24_num3.pdf

STUDENT ADVISING

Thesis Chair
Armstrong, Travis, Anthropology, expected graduation June 2019
Chatterton, Laura, Anthropology, expected graduation Dec. 2019
Earp, Molly, Anthropology, expected graduation June 2019
Lewis, Sarah, Anthropology, expected graduation June 2019
Marshall, Jay, Anthropology, expected graduation Dec. 2019
Vadar, Michael, Anthropology, expected graduation Dec. 2019
Hildebrand, Evelyn, Anthropology, expected graduation Dec. 2019

Committee Member
Gray, Diana, Anthropology, California State University, Los Angeles, expected graduation June 2020
Pham, Peter, Anthropology, California State University, Northridge, expected graduation June 2020

Thesis Chair: Completed Master Theses
2018 Mills, Evan. Seasonal Round Travel Routes and the Cost of Mobility. (Anthropology)
2017 Clarendon, Shannon. Fire Affected Rock in Inland Southern Californian Archaeology: An Investigation into Diagnostic Utility. (Anthropology)
2017 Padilla, Lacy. Ground Stone Analysis at the Rock Camp Site. (Anthropology)
2017 Bark, Richard. Investigation into the Suspected Late-Holocene Decline in Obsidian Use at Sites in Edwards Air Force Base. (Anthropology)
2017 Grenda, Robert. Characterizing *Muscupiabit* (CA-SBR-425/H) and its Pace in the Greater Serrano Settlement System. (Anthropology)
2017 Porras, Lindsay. Environmental Diversity and Resource Use in the Salton Basin of the Colorado Desert. (Anthropology)
2017 Porter, Jessica. The Impact of the Medieval Climactic Anomaly on the Archaeology at Edwards Air force Base. (Anthropology)
2017 Stever, Matthew. Correlating Ethnographic Data with Spatial Analysis of Archaeological Sites: A Case Study from CA-ORA-507 and the Aliso Creek Region. (Anthropology)

PROFESSIONAL SERVICE

University Service, *California State University, San Bernardino*
2017 Member, Review Committee, Council on Ocean Affairs, Science, and Technology Graduate Student Research Award
2016-Present Campus Representative, Council on Ocean Affairs, Science, and Technology,
2016-Present Member, Faculty Advisory Committee, Water Resources Institute

College Service, Social and Behavioral Sciences, California State University, San Bernardino
2017 Member, Scholarship Committee
2016-2017 Member, Outstanding Honors and Master's Thesis Award Committee
2015-2017 Member, Social Science BA Committee

Department Service, Anthropology, California State University, San Bernardino
2016-Present Faculty Advisor, ALPACA Anthropological Society
2016 Member, Faculty Search Committee

Disciplinary Service

2019-Present	Appointed Member, Nominating Committee, Register for Professional Archaeologists
2016-Present	Appointed Member, Government Affairs Committee, Society for American Archaeology
2016-Present	Founder and Co-Chair, California Maritime Archaeology Committee, Society for California Archaeology
2014-2016	Secretary, Society for California Archaeology Executive Board

Reviewer, Books
University of Utah Press

Reviewer, Journal Articles
Advances in Archaeological Practice, California Archaeology, Journal of California and Great Basin Anthropology, Journal of Island and Coastal Archaeology, North American Archaeologist, Western North American Naturalist

Reviewer, Grants
National Oceanic and Atmospheric Administration, Office of Exploration and Research, Council on Ocean Affairs, Science, and Technology

PUBLIC SERVICE

2017	Volunteer with GEAR UP, Office of Pre-College Program, California State University, San Bernardino
2015-2017	Archaeology presentations to K-8 classes in various Inland Empire schools.
2012- 2011	Tutor to Special Education students in Science and Social Science at La Colina Junior High School, part of the Partners in Education program
2011	Careers in Archaeology. Presentation as part of "Jumpstart to Pathways" at Isla Vista Elementary School (03/03/2011)
2011	The Early Holocene on Santa Cruz Island: A Site Visit to CA-SCRI-691. Student visit from the Santa Ynez Band of Chumash to excavation site (01/29/2011)
2010	Understanding Early Maritime Hunter-Gatherer Land and Resource Use: First Steps in Developing a Conservation Strategy. Project Presentation, Santa Ynez Chumash Tribal Elder's Council, Santa Ynez (07/19/2010)
2010	Careers in Archaeology. Advancement Via Individual Determination (AVID) Lecture, La Colina Junior High School, Santa Barbara (05/28/2010)
2010	Careers in Archaeology. Special Education Lecture, La Colina Junior High School, Santa Barbara (03/19/2010)
2009	The Science of Archaeology. Student Lecture, La Colina Junior High School, Santa Barbara (10/16/2009)

2008 Archaeology and the Scientific Method. Student Lecture, La Colina Junior High School, Santa Barbara (10/03/2008)

2007 From Then to Now: The History of California - The Early Years. Public lecture, Santa Barbara Museum of Natural History, Santa Barbara (10/16/2007)

2007 Mal De Mar No Mas: Searching for Early Underwater Sites in the Sea of Cortez. Public lecture, Santa Barbara Museum of Natural History, Santa Barbara (05/31/2007)

PROFESSIONAL MEMBERSHIPS

Society for American Archaeology (SAA)
Society for California Archaeology (SCA)
Archaeological Institute of American (AIA)
American Anthropological Association (AAA)
Register of Professional Archaeologists (RPA)

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX D

DPR FORMS

Site within APE and Newly Recorded Sites

APPENDIX E: AREA OF POTENTIAL EFFECTS MAP

Rincon Consultants, Inc.

1980 Orange Tree Lane
Suite 105
Redlands, California 92374

909 253 0705 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

July 2, 2021
Project No: 20-10778

Elizabeth Meyerhoff, Environmental Specialist
Environmental Services Department
Coachella Valley Water District
75-519 Hovley Lane East
Palm Desert, California 92211
Via email: emeyerhoff@cvwd.org

Subject: Area of Potential Effects Map for the Coachella Valley Water District's Avenue 66 Trunk Sewer Project in Riverside County, California

Dear Ms. Meyerhoff:

The Coachella Valley Water District (CVWD) via Woodard and Curran retained Rincon Consultants, Inc. (Rincon) to conduct consultation with the Eastern Information Center and create new Area Of Potential Effects (APE) and Area of Direct Impacts (ADI) maps for the Avenue 66 Trunk Sewer Project (Project) in the unincorporated community of Thermal, Riverside County, California. Rincon understands that Amy Guisck, Ph.D., Registered Professional Archaeologist (RPA) conducted a cultural resources assessment for the project in 2018, which was revised in 2020, in support of the Initial Study and Mitigated Negative Declaration (IS-MND) for the Project, which was prepared for compliance with the California Environmental Quality Act (CEQA). This memorandum documents Rincon's efforts for the Project and provides updated maps, identifying the APE and ADI respectfully.

Project Location and Description

Under the proposed Project, CWVD proposes a septic-to-sewer conversion within the unincorporated community of Thermal, in Riverside County, California. Proposed Project improvements would be constructed within the current CVWD service area boundaries. The Project lies within the *Valerie* topographic quadrangle, Township 7 South, Range 8 East, and Section 7, 8, 9, 10, 17, and 16. Portions of the Project occur within the Torres-Martinez Desert Cahuilla Indians Tribal lands.

Project components include the installation of a gravity sewer pipeline extensions within the existing roadways and construction of a lift station. The proposed Project will service approximately 500 residents of the Torrez-Martinez Community Center and the Sunbird Mobile Home Park. The Project proposes an annual flow of 42,200 gallons per day to accommodate the 40-year growth projections. The sewer system infrastructure would be designed to accommodate the peak hour flow for full system build-out based on CVWD's standards. A full Project description is found in the IS-MND for the Avenue 66 Trunk Sewer Project (Coachella Valley Water District 2020)

Eastern Information Center Consultation

As part of the scope for this Memo, Rincon will engage with the EIC to obtain information for a primary number for the recorded site AG-2. Due to COVID-19 precautions, the EIC is only available by email. Rincon contacted the EIC at the California Historical Resources Information System (CHRIS) located at the University of California, Riverside on March 1, 2021, to begin consultation for obtaining a primary number designation for newly recorded site AG-2. Rincon received an automatic response stating that due to the ongoing COVID-19 pandemic, the EIC has modified its requests criteria, and it was extremely delayed and processing requests received in August and September of 2020 and didn't not offer any answer to our question or method of further contact (Attachment A). No further consultation with the EIC has taken place due to this delay.

Area of Potential Effects and Area of Direct Impact

The Project APE was developed by Gusick (2018, revised 2020). It included the pipeline route within the existing streets, an existing unpaved access road, a proposed lift station, as well as a 2-meter buffer. For purposes of this reporting, the APE developed by Gusick is now defined as the Project ADI. A new APE has been created.

The Project ADI originates along the southern portion of Assessor Parcel Number (APN) 751-060-026, Sunbird Mobile Home Park, traveling east along Echols Road, and turning right at Harrison Street, heading south to Avenue 66. Along Avenue 66 the alignment turns right onto Martinez Road and trends south to the Torres-Martinez Desert Cahuilla Indians Tribal office complex where it terminates. The ADI includes all rights-of-way on the roads for staging and construction use (Attachment A, Figure 1).

The redefined APE for this Project, as established by Rincon, defines the limits of Project-related disturbances, the boundaries of all cultural resources and the historic district, and a 1-meter buffer of the resources (Attachment A, Figure 1). The resources are included in the APE due to direct or indirect impacts created by the Project. Rincon defines the APE as originating at approximately 0.5 mile east of the Avenue 66 and Van Buren Street intersection (33.596158479931 N, -116.190002 W), continuing east on Avenue 66 and turning north on an unnamed dirt road at approximately 0.3 mile from the Harrison Street and Avenue 66 intersection (33.5691309671022 N, -116.185350192142 W). The APE alignment continues along the dirt road to Echols Road where it turns east and intersects with Harrison Street. The APE then turns south at Harrison and continues to Avenue 66, turning east and continuing along Avenue 66, terminating at Pierce Street (33.56933975 N, -116.1126378 W) where it turns into Highway 195. The revised APE includes Martinez Road and the all of Martinez Historical District within the Torres-Martinez Desert Cahuilla Indians Reservation. The below-ground vertical APE is assumed to be a maximum of 20 feet below ground surface for pipeline trenching and wet well excavation for the list station.

The APE is considered a three-dimensional space that includes any horizontal and vertical ground disturbance associated with the project. Rincon developed the updated APE map to identify historic-era properties that may be directly or indirectly affected by the proposed Project, in compliance with 36 CFR 800.16(d). The APE depicts all areas that are expected to be affected by the proposed Project, including staging and construction access areas.

Resources within the Area of Potential Effects

There are five previously recorded cultural resources within the project APE, four of which are historic-era archaeological resources. Three resources are historic-aged roads, one is a historic irrigation pipeline, and one is a NRHP listed Historic District. Table 1 provides and overview of the five resources within the project APE. Each of the resources is discussed in more detail below.

Table 1 Previously Recorded Cultural Resources within the Project APE

Primary Number	Trinomial	Resource Type	Description	Recorder(s) and Year(s)	NRHP Status
P-33-001292	CA-RIV-1292/H	Historic, Prehistoric District	Martinez Historical District, Martinez Indian Agency	1972 (T. F. King); 1973 (J. H. Michael); 1999 (A. R. Pigniolo); 2018, 2020 (A. Gusick)	Listed on the NRHP
P-33-020028	CA-RIV-10172	Historic-Era Road	Martinez Road	2011 (J. Eddy); 2018, 2020 (A. Gusick)	Recommended ineligible for listing on the NRHP.
P-33-020744	CA-RIV-10666	Historic-Era Road	Historic Asphalt Road Segment	2012 (S. Stanton); 2018, 2020 (A. Gusick)	Not evaluated
P-33-020844*	CA-RIV-10768	Historic-Era Road	Avenue 66	2012 (P. Stanton); 2018, 2020 (A. Gusick)	Not evaluated
P-33-026549	–	Historic-Era Structure	Irrigation Lateral 123.45-6.0	2016 (J. George); 2018, 2020 (A. Gusick)	3D: Appears eligible as contributor to a fully documented district

Source: SCCIC 2018 via Gusick 2018, 2020

*P-33-020844 recorded by Gusick in 2018, 2020 as AG-2

P-33-001292 and CA-RIV-1292/H

Thomas F. King originally recorded resource P-33-001292 as a multicomponent site (historic-era and prehistoric site) in 1972. King identified the resource as the Martinez Reservation Agency buildings with a prehistoric occupation site and prehistoric wells. In addition to the prehistoric use, King identified the schoolhouse, agent's quarters, and agency building within the resource boundaries. In September of 1972, King submitted the resource as district, the Martinez Historical District, for inclusion in the National Register of Historic Places (NRHP). The State Liaison officer nominated the resource for inclusion on November 8, 1972. John Michael of the Historic Preservation Section of the Department of Parks and Recreation notified the Torres-Martinez Band of Cahuilla Indians that the Martinez Historical District was officially listed on the NRHP on May 17, 1973 (Michael 1973).

In 1999, Andrew Pigniolo updated the records of a distinct archaeological site, CA-RIV-1292/H, within the Martinez Historical District boundaries. He noted 20 features including Tribal office buildings, a health clinic, playground, pool, classrooms, residences, a water tower, an adobe, a well, Quonset hut, a milling feature, sparce scatter of prehistoric and historic trash, and a cemetery. The site boundary was updated to record the new boundaries. Five of the features, P-33-005686, P-33-005687, P-33-005688, P-33-005689, and P-33-005690 had been previously recorded by King (1972). The archaeological site is recorded along the western edge of Martinez Road at the Torres-Martinez Desert Cahuilla Indians Tribal office complex.

The current Project includes portions of the Martinez Historical District, including Martinez Road (as described below) and archaeological site CA-RIV-1292/H. In 2018, Amy Gusick, PhD. revisited the Historic District, noting that the Project APE would run through the District. However, she recommended that the resource would not be adversely impacted by the Project with mitigation measures. Gusick (2018, revised 2020) recommend Tribal and archaeological monitoring of this portion of the Project due to the sensitivity of the District and an adjacent cemetery.

P-33-020028/ CA-RIV-10172

In 2011, J. Eddy of Applied EarthWorks recorded the linear resource named Martinez Road, resource P-33-020028. Martinez Road is recorded as a two-lane striped, paved road with wide dirt shoulders generally trending north-south. Eddy suggests that the road was originally a dirt road that evolved into a paved road by 1941, with routine maintenance (resurfacing and shoulder grading) occurring every ten to 20 years. At the time of the recording, the resource terminated near the Torres-Martinez Desert Cahuilla Indian Agency buildings to the south and Avenue 66 to the north.. However, it is unlikely that portions of the trail are present beneath the pavement. Although the Martinez Road lies within the Martinez Historical District, the road is not a contributing resource to the District. Eddy recommended that the resource was not eligible for inclusion on the NRHP under all four criteria. The road is considered sensitive for cultural materials as cremated remains were previously identified near the road. Gusick (2018, revised 2020) concurred with Eddy's findings that the resource was not eligible for inclusion on the NRHP and recommended no further cultural resources considerations for the resource as the current Project will not adversely impact the resource. The resource is currently recorded from the intersection of Avenue and Martinez Road (33.56912625 N, -116.1544345 W) trending south-southeast and terminating at the Torres-Martinez Desert Cahuilla Indians agency buildings (33.56237509 N, -116.1529297 W) and includes the right-of-way on either side of the road.

P-33-020744/ CA-RIV-10666

In 2012, Patrick Stanton of Statistical Research, Inc. recorded the linear resource P-33-020744 as a historic-period, asphalt-paved road and the associated right-of-way on either side of the road. Stanton recorded a 15-meter segment of the historic-period road as generally trending east-west and originating on the west of Highway 86 and continuing through to a date farm. Gusick (2018, revised 2020) revisited the site and noted that no cultural materials were observed, and the road is ineligible for listing on the NRHP under all four criteria. Gusick (2018, revised 2020) recommended no further cultural resources considerations for the resource. The current Project will not adversely impact the resource. The resource is currently recorded from the intersection of Echols Road and Harrison Street (33.57273586 N, -116.1815638 W) trending west and terminating along Echols Road (33.57278334 N, -116.1855698 W).

P-33-020844/ CA-RIV-10768/ AG-2

In 2012, Patrick Stanton of Statistical Research, Inc. recorded the linear resource P-33-020844 as Avenue 66, a historic-period, asphalt-paved, two-lane road and its associated right-of-way on either side of the road. Stanton recorded the historic-period road as generally trending east-west and intersecting with Highway 86. Stanton recorded the road feature as a 15-meter segment with the edges of the highway completing the resource, noting that the resource continued outside of the recorded segment boundaries. Avenue 66 is oriented east and west of the intersection of Avenue 66 and Highway 86.

In 2018, Gusick (2018, revised 2020) recorded the resource outside of Stanton's (2012) survey boundaries as AG-2. The road is described as an improved paved road orientated east-west from Harrison Street (Highway 86) and Polk Street, terminating at Indian Wells Road, and marked as Avenue 66. The resource was recommended as not eligible for inclusion on the NRHP under all four criteria as the road has been improved, resurfaced, and is in poor condition (Gusick 2018, revised 2020). No further cultural resources considerations were recommended for the resource (Gusick 2018, revised 2020). As the research potential has been exhausted for this resource, the Project will not adversely impact the resource and the resource will be replaced in kind. The resource is currently recorded from the intersection of Avenue 66 and Harrison Street (33.56906932 N, -116.1810451 W) trending east and terminating at Pierce Street (33.56933975 N, -116.1126378 W) where it turns into Highway 195.

P-33-026459

In 2016, Joan George of Applied EarthWorks, Inc., recorded the linear resource P-33-026459 as the Irrigation Lateral 123.45-6.0. The irrigation lateral 123.45-6.0 is described are part of the Coachella Canal's distribution network which was constructed between 1949 and 1951. The irrigation lateral is made of concrete and measures 33 inches in diameter at Jackson Street and extends to Avenue 66 where it tapers to 12 inches in diameter, continuing to Echols Road (George 2016). Along with the pipeline, two concrete standpipes and various concrete pipe vents are recorded as part of the resource. George commented that the Coachella Canal was determined to be eligible for listing on the NRHP under Criterion A by the Bureau of Reclamation and had State Historic Preservation Officer concurrence. As Irrigation Lateral 123.45-6.0 is part of the distribution system for the Coachella Canal system and was construction between 1949 and 1951, Irrigation Lateral 123.45-6.0 was recommended eligible for listing on the NRHP as a contributor to the significant for the Coachella Canal under Criterion A and Criterion 1 of the California Register of Historical Places (George 2016). The segment of the resource within the current project boundaries was replaced with PVC pipe to prevent future flooding incidents and the PVC pipe was placed adjacent to the recorded resource (Gusick 2018, revised 2020). While the replacement had an effect on a historic property (Irrigation Lateral 123.45-6.0), the replacement did not have an adverse effect as the replacement accounted for 0.4 percent of the full resource (Irrigation Lateral 123.45-6.0). Due to the installation of the PCV pipeline, the project would not have an adverse effect on historic property (Gusick 2018, revised 2020).

Summary and Recommendations

Due to the COVID-19 pandemic, Rincon was unable to conduct consultation with the EIC. It was concluded that the newly recorded resource suggested by Gusick (2018, revised 2020) as AG-2 is previously recorded site P-33-020844 (Ave. 66). Rincon has created new maps for the project APE and has redefined the Gusick APE as the Project ADI to account for direct impacts to the surrounding resources. Based on the information provided above, Rincon recommends that updates to the Department of Parks and Recreation Series 523 forms for all five cultural resources within the Project APE be conducted by a Professional Archaeologist and submitted prior to Project implementation.

Please do not hesitate to contact Rincon with any questions regarding this cultural resources documentation.

Sincerely,
Rincon Consultants, Inc.

Amanda R. Harvey, Ph.D., RPA
Project Manager/Senior Archaeologist

Christopher A. Duran, MA, RPA
Principal Investigator

Attachments

Attachment 1, Figure 1	Area of Potential Effects Map
Attachment 1, Figure 2.1	Area of Potential Effects Map
Attachment 1, Figure 2.2	Area of Potential Effects Map
Attachment 1, Figure 2.3	Area of Potential Effects Map
Attachment 1, Figure 2.4	Area of Potential Effects Map
Attachment 1, Figure 2.5	Area of Potential Effects Map
Attachment 2	EIC Email Response

References

Eddy, J.

1983 Archaeological Site Record for 33-020028. On file, Eastern Information Center, University of California, Riverside

Coachella Valley Water District

2020 Draft Initial Study and Mitigated Negative Declaration of the Avenue 66 Trunk Sewer Project. With assistance from Woodard & Curran. December 2020

Foulkes, Cecelia

1983 Archaeological Site Record for P-33-005684. On file, Eastern Information Center, University of California, Riverside.

George, Joan

2016 Archaeological Site Record for P-33-026594. On file, Eastern Information Center, University of California, Riverside

Gusick, Amy

2018, revised 2020 Cultural Resources Technical Report Sunbird/Martinez Road Septic to Sewer Conversion Project, Riverside County, California.

King, Thomas F.

1972 Archaeological Site Record for P-33-001292. On file, Eastern Information Center, University of California, Riverside

Michael, John H.

1973 Correspondence for Archaeological Site Record for P-33-001292. On file, Eastern Information Center, University of California, Riverside

Pigniolo, Andrew R

1999 Archaeological Site Record for P-33-001292. On file, Eastern Information Center, University of California, Riverside

Stanton, Patrick

2012 Archaeological Site Record for P-33-020744. On file, Eastern Information Center, University of California, Riverside.

2012 Archaeological Site Record for P-33-020844. On file, Eastern Information Center, University of California, Riverside.

Attachment 1

Figures

Attachment 2

EIC Email Response

Courtney Montgomery

From:	eickw . <eickw@ucr.edu>
Sent:	Monday, March 1, 2021 1:37 PM
To:	Courtney Montgomery
Subject:	[EXT] Automatic Response: PLEASE READ Re: Resource DPR Primary Number Inquiry

CAUTION: This email originated from outside of Rincon Consultants. Be cautious before clicking on any links, or opening any attachments, until you are confident that the content is safe .

Effective Friday, December 11, 2020

In response to the desire of our clients for more rapid delivery of records search results, the EIC has modified its conventional records search product during the ongoing pandemic shutdown of UCR. There will be three basic search types, with Option A receiving priority attention, followed by Option B, then Option C. Please indicate the option you prefer in the special instructions area of the CHRIS Data Request Form you normally submit along with a PDF copy of the USGS 7.5-min portion depicting your specific project area and buffer radius (if applicable). The standard CHRIS records search fee rate applies to all three options.

Option A. Records search results consist of bibliographic information (PDF list, detail, or Excel spreadsheet as denoted on your Data Request Form) relating to resources and reports intersecting the search area (with a half-mile buffer radius around the specific project area being the maximum), and full PDFs of the identified resource records and reports. No separate map drawn by the EIC depicting locations of identified resources and reports will be furnished. Depending upon the number of outstanding Option A requests in the cue, estimated turnaround time should be a matter of only a few business days.

Option B. Records search results consist of bibliographic information (PDF list, detail, or Excel spreadsheet as denoted on your Data Request Form) relating to resources and reports intersecting the search area (with a half-mile buffer radius around the specific project area being the maximum), full PDFs of identified resource records intersecting the search area, full PDFs of identified reports intersecting the specific project area and PDFs of location maps extracted from reports identified within the overall search area but outside the specific project area. No separate map drawn by the EIC depicting locations of identified resources and reports will be furnished. Depending upon the number of outstanding Option A and Option B requests in the cue, estimated turnaround time for Option B searches should be a matter of less than ten business days.

Option C. Standard EIC research search results per your Data Request Form, including narrative letter report of EIC findings and drawn map of identified resources and reports intersecting the search area. Depending upon the number of outstanding Option A and Option B requests in the cue, estimated turnaround time for Option C searches should on the order of four to six weeks or more.

Also, once all records searches in the queue have been organized by the options. They will then be continue in that order A-C.

1

Should you have a life or death emergency, please contact 9-1-1.

~~~~~~

JUST A FRIENDLY REMINDER, WE ARE STILL IN A **PANDEMIC.**

Pandemic: An **epidemic** (a sudden **outbreak**) that becomes very widespread and affects a whole region, a continent, or the world due to a susceptible population. By **definition**, a true **pandemic** causes a high degree of mortality (death)

CURRENTLY SURVING REQUESTS SUBMITTED IN August and September. I apologize for the delay this PANDEMIC has caused.

Any new records searches being submitted during this PANDEMIC the are being added to the queue in the order received and I will eventually get to them.

THANK YOU FOR YOUR PATIENCE.

******The campus has been closed from Monday the 16th of March UNTIL FURTHER NOTICE.**

RE: CHRIS Consultants List
Due to the decisions made by the Riverside County Public Health that impacted UCR, everyone will remain on the CHRIS Consultants List until we resume to our regular business hours, and we check all mail and the checks are cashed without bouncing. Any new applicants may send me a copy of the forms, resume, and proof of check (that was sent in the mail) via email for processing. If qualified, the new applicant will be added to the CHRIS Consultants List starting April 1st, assuming the files were sent prior to April 1st. If files are received after the 1st of April, you will be added on the day we received your forms and proof of check via email. Upon resuming our normal business hours, we will check all mail and all the checks will be cashed and everyone will remain on the list if the checks do not bounce. **Should you wish to be added to the CHRIS Consultants List, please follow the instructions found at our website** http://chrisinfo.org/browse/apply

Forms and Checks for the CHRIS Consultants List should be temporarily sent to our Cashier's department at the following address
UCR Main Cashiers Office
900 University Avenue
Student Services Building, Room 1111
Riverside, CA 92521

Mail will be checked until we return to CAMPUS.

Please note I WILL prioritize CALFIRE records searches for wildfires in Riverside/Mono/Inyo Counties.

PLEASE NOTE: CALFIRE requests for wildfires will intervene with your requests.

As Smokey the Bear says, "Only You Can PREVENT WILDFIRES!"

After the CALFIRE records searches for the current fires (and future fires) are completed, I will resume with the regular records searches.
~~~~~~

--

Best,

Eulices Lopez
Administrative/Coordinator Assistant
Eastern Information Center
Watkins Hall Room 1313
c/o Department of Anthropology
University of California
900 University Avenue
Riverside, CA 92521-0418

"Maybe, it's not too late, to learn how to love, and forget how to hate..." Ozzy Osbourne

3

APPENDIX F: GEOTECHNICAL ENGINEERING STUDY

REPORT OF GEOTECHNICAL ENGINEERING STUDY

PROPOSED SUNBIRD SEPTIC TO CVWD SEWER CONVERSION

84950 ECHOLS RD,
THERMAL,
CALIFORNIA 92274

PREPARED FOR:
COACHELLA VALLEY WATER DISTRICT
P.O. BOX 1058
COACHELLA, CA 92236

JULY 10, 2018

July 10, 2018

Ms. Pattie Reyes
Coachella Valley Water District
P.O. Box 1058
Coachella, CA 92236

Re: Report of Geotechnical Engineering Study
Proposed Sunbird Septic to CVWD Conversion
84950 Echols Rd.,
Thermal, Riverside County, California

Dear Ms. Pattie:

We are pleased to present the results of a geotechnical engineering study performed for the referenced project. This study was performed in accordance with our Agreement dated June 2017 and included three manual test borings, laboratory testing, engineering evaluation, and preparation of this report. The results of our field and laboratory testing and our geotechnical recommendations for the proposed project are included in this report.

We appreciate the opportunity to assist you with this project. Please contact this office should you have questions regarding this report.

Sincerely,

Mehrad Kamalzare, Ph.D., M.ASCE
Assistant Professor

TABLE OF CONTENTS

INTRODUCTION

This investigation was performed to determine engineering characteristics of the subsoil conditions along the alignment of the proposed sewer transmission main. Our investigation included field exploration, laboratory testing, engineering analysis and the preparation of this report. Our investigation was performed in general accordance with our agreement dated June 2017.

This report presents the results of a geotechnical engineering study for a proposed sewer transmission main considered for construction in Thermal, Riverside County, CA. The project is located along Harrison St., from Echols Rd. to 66th avenue, and along 66th avenue from Harrison St. to Polk St. and then along Polk St. till south of 64th avenue. The project also included the northern part of the Martinez road. Figure 1 shows the site location map and the approximate alignment of the project.

A site plan prepared by Mr. Allan Ng and Dr. Omar Mora dated August 2017 was used as the basis for this study and preparation of this report. The plan indicates the existing property lines, existing site conditions, boundaries, and proposed site layout.

The scope of our study for this project included the following services:

- Subsurface exploration program consisting of limited manual test borings.
- Laboratory testing of representative soil samples.
- Review of publicly available geologic data as it pertains to the proposed development.
- Preparation of this report, which includes our findings and recommendations regarding:
    - Earthwork, including suitability of on-site materials for reuse and associated compaction requirements
    - Seismic considerations
    - Groundwater considerations

SITE CONDITIONS AND PROJECT DESCRIPTION

The proposed alignment is located on the western side of Harrison street, southern side of 66th Avenue, eastern side of Martinez road, and western side of Polk street. According to the

referenced site plan, the ground surface generally slopes downward from southwest to northeast across the site with surface grades raging from approximately EL -90 feet to EL -172 feet.

Based on projects of similar scope, we anticipate that the proposed project will include the installation of different dimeter transmission sewer lines. The sewer installation is expected to be accomplished using conventional open cut trenching operations. The proposed sewer alignment extends from just south of 64th avenue to 66th avenue is located along the future extension of Polk street, where the ground surface is currently covered with scattered short grass and weeds. The proposed sewer alignment extends west along 66th avenue to Harrison street and then north along Harrison street to the Sunbird Mobile Home Park. Except Polk street all other roads are paved. Based on projects of similar scope, we anticipate that the proposed sewer main will be installed at depths of approximately 5 to 20 feet below the existing ground surface. In general, the western portion of the sewer alignment is relatively shallow (about 5 feet in depth) and the pipeline depth increases to the east along 66th avenue and then toward north along Polk street.

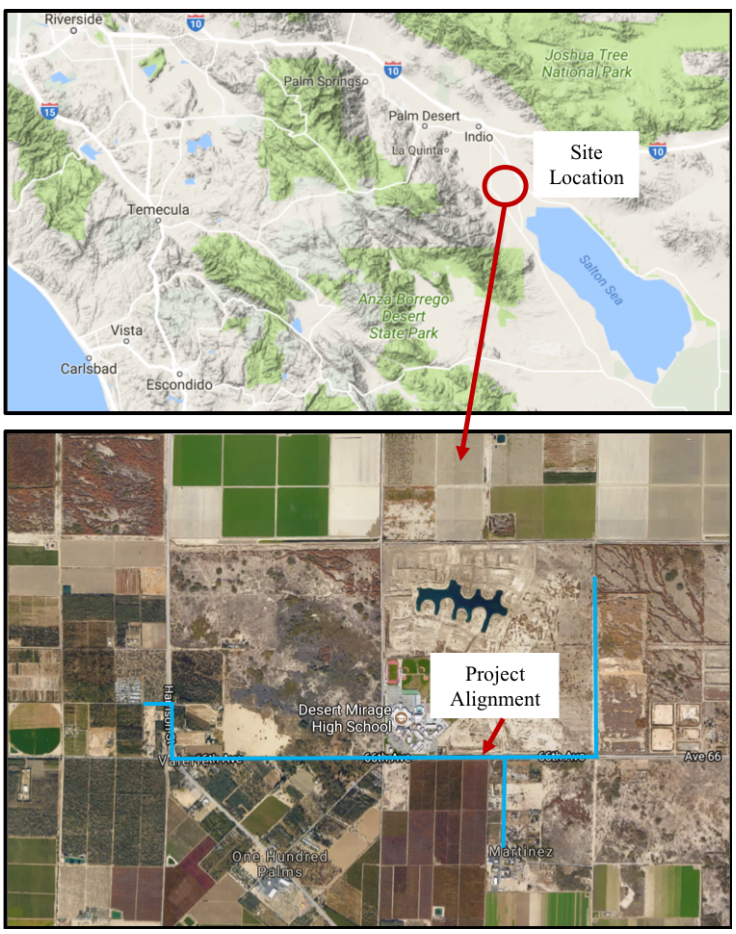
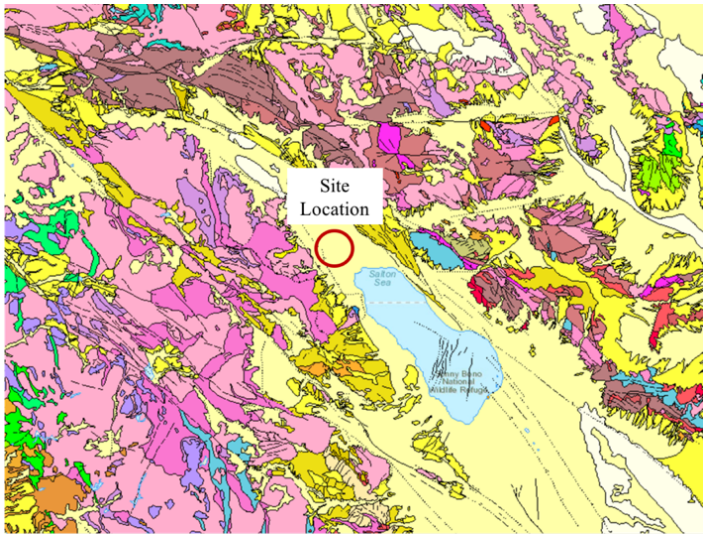


Figure 1: Site location map and the approximate alignment of the sewer line

SITE GEOLOGIC CONDITIONS

The project site is located near the south east of the Coachella Valley, and inland structural basin located between San Andreas fault zone to the north and San Jacinto fault zone to the south. There also a large number of other late Quaternary active/potentially active faults that are within a 100-kilameter radius of the site based on the California Department of Conservation.

The northwestern Coachella Valley is the alluviated lowland that extends southeastward from the San Gorgonio Pass region to the north end of the Salton Sea. The lowland is traversed by multiple strands of the San Andreas fault, and is punctuated by localized compressional squeeze-ups that form dome-shaped hills of uplifted sand and gravel. Current geologic understanding suggests that the lowland is a contractional region that has developed over the last one million years or so in response to left steps among various strands of the San Andreas fault. This left step still is taking place today, and provides the background for current earthquake activity in the northern Coachella Valley region. Sedimentary materials that are filling up the basin record information about interactions among the various fault systems, including their origin and movement history. The sediments also store ground water for the Coachella Valley region, and have been utilized for sand-and-gravel resources. Figures 2 and 3 show the geologic formations of the region, and the faults located in the area, respectively.



Generalized Rock Type: Q
PTYPE: Q
Age: Pleistocene-Holocene
General Lithology: Marine and non-marine (continental) sedimentary rocks
Description: Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly non-marine, but includes marine deposits near the coast.

Figure 2: Geology of the site

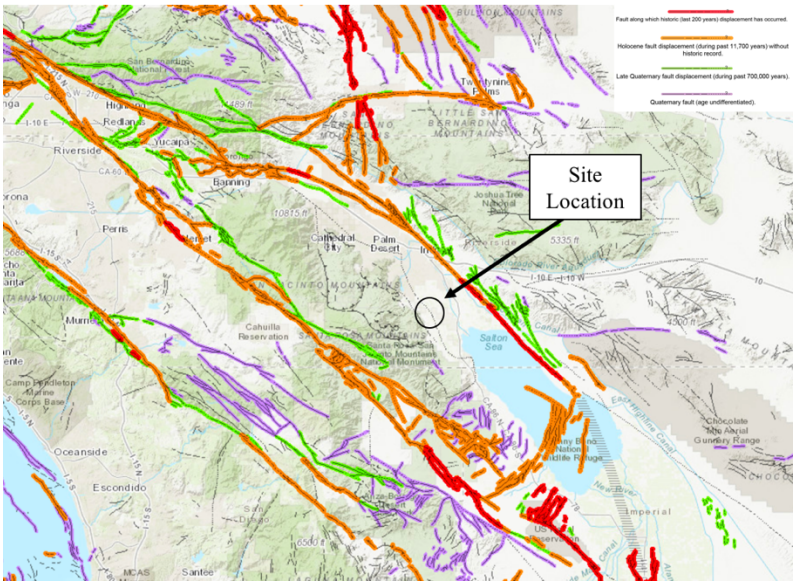


Figure 3: Fault location map

GEOLOGIC HAZARDS:

The gentle topography of the site, coupled with the poorly stratified alluvial soils generally rule out any potential slope stability related issues. The site is not within known active fault zones; therefore, the potential for damage by surface rupture due to faulting is very low. The nearest active/ potentially active faults to the project site is associated with the San Andreas Fault System, which is approximately seven miles away. The site is classified as Site Class E in accordance with the Chapter 16 of the California Building Code. The proposed project will fall under Seismic Design Category E based on a history of high seismic activity. The ten closest faults within a hundred miles range of the proposed site, are shown in Table 1.

As stated by the Riverside County Planning Department (Geology and Soils Section), in order for liquefaction to occur the following conditions must be present:

1. Shallow groundwater (typically less than 50 feet in depth)
2. Unconsolidated soil
3. Strong ground shaking/ Cyclical Energy (common during moderate to intense earthquakes)

According to the liquefaction susceptibility map of Riverside County, Figure 4, the project site is located in an area of high susceptibility. The main factor that causes the liquefaction susceptibility is the close distance to the Salton Sea and the loose existing deposits. The area encompassing the lake experiences shallow groundwater levels. The type of soil at the site is young and unconsolidated, as stated in the local geology section of the report. There are many faults surrounding the site that could potentially cause ground shaking. The shaking, along with the other factors, has the ability to generate liquefaction.

Table 1. Nearest faults to project site (USGS 2008 National Seismic Hazard Maps)

Fault	Distance to site (miles)	Maximum Magnitude (Mw)
S. San Andreas; PK+CH+CC+BB+NM+SM +NSB+SSB+BG+CO	7.4	8.2
San Jacinto; SBV+SJV+A+C	15.5	7.9
S. San Andreas; PK+CH+CC+BB+NM+SM +NSB+SSB+BG	16.1	8.1
San Jacinto; SBV+SJV+A+CC+B+SM	20.5	7.9
San Jacinto; SBV+SJV+A	21.9	7.5
San Jacinto; B+SM	25.3	7.1
Burnt Mountain	28.8	6.8
Eureka Peak	29.2	6.7
Elmore Ranch	36.8	6.7
Earthquake Valley	37.0	6.8

As in all sites in Southern California, the potential for strong ground shaking geologic hazards are known to be presented at the site; however, geologic observations should be performed during grading.

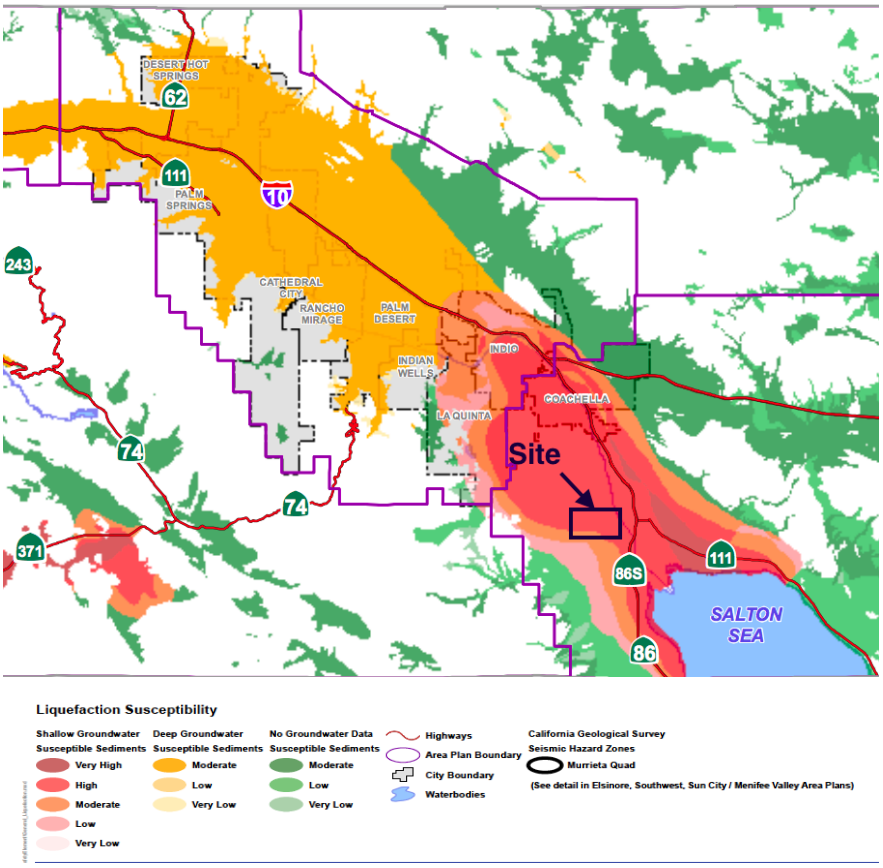


Figure 4: Riverside County Liquefaction Susceptibility Zone Map and the project location

EXPLORATION AND TESTING

Subsurface Exploration Program

The subsurface exploration program included three (6) Cal Poly Pomona Standard Penetration Test (SPT) borings (B-1 through B-6) performed throughout the site. However, B-1 and B-2 were encountered refusal and were terminated at about two feet below the ground surface. B-3 were performed about 200 feet north of the B-1 and was manually augured to 15 feet below the ground surface. B-4 to B-6 were performed on the Martinez road and were manually augured to 7 feet, 17 feet, and 12 feet respectively. B-4 and B-6 encountered refusal. The locations of the explorations performed for this study are shown on Figure 5-Boring Location Plan.

The boring locations lies on the corner of 66th avenue and Polk street, where there is an entry to the empty plot location. Fill material and waste lie in the around on the exterior of the plot to the north and east of the area. Vegetation is present in the area and gravel can be found on the surface. There are signs of existing utilities marked along 66th avenue near the site. The plot is located on a flat surface with no peaks in elevation. The first boring (B-1) is located near the site entrance about 50 feet away from the points of entry. The second boring (B-2) hole was located approximately 20 feet to the south of the first boring hole but met refusal within the first few inches of topsoil. Samples were collected from the third boring (B-3), which is approximately 200 feet from the site entrance. Fourth boring (B-4) was performed at the west side of the intersection of the 66th ave. and Martinez Rd., on the 66th ave. The boring encountered refusal at 7 feet deep. B-5 was performed on east side of the 66th ave. and Martinez Rd.

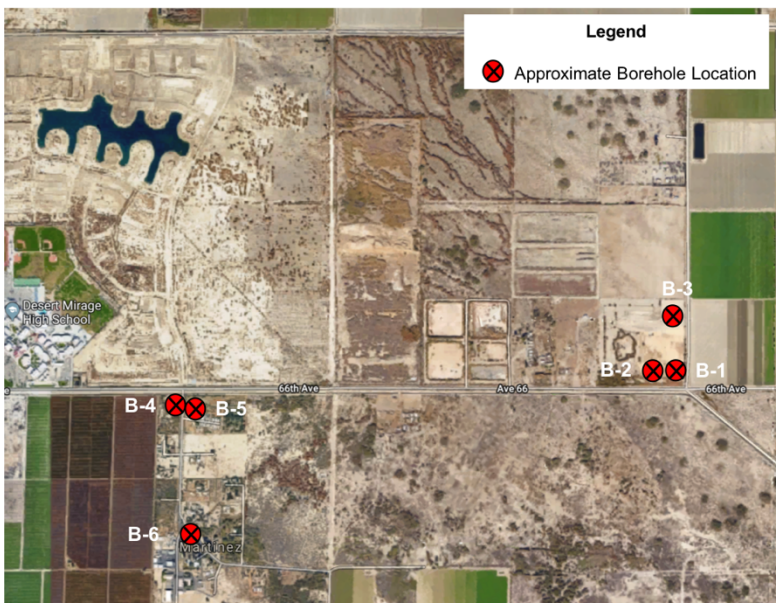


Figure 5: Approximate location of boreholes

Representative soil samples obtained from the borings were delivered to our laboratory for visual classification and index testing. Individual soil profile logs of the borings are included in Appendix A. The descriptions provided on the logs are based on visual-manual classification of the soil supplemented by laboratory test results as discussed herein. The ground surface elevations reported on the logs were interpolated from surface contours shown on the referenced site plans and should be considered approximate.

Subsurface Conditions

Less than approximately 1 inch of top soil (with organic matters) was encountered at the ground surface at the boring locations.

Stratum 1 – Silty Sand: Soils identified as silty sand or possible silty sand were encountered in the boring logs and extended to depths about ±3 feet below the ground surface (BGS). The manual boring process indicated this stratum of soil has in-situ densities ranging from 'very loose' to 'medium', averaging 'loose'.

Stratum 2 – Low Plastic Silt: Low Plastic Silt soils were encountered below the silty sand section. This stratum consisted primarily of silt with variable quantities of fine sand and clay. Cal Poly Pomona SPT 'N' values indicate that this stratum has in-situ densities ranging from 'very loose' to 'medium', averaging 'loose'.

Stratum 3 – Low Plastic Clay: Low Plastic Clay soils were encountered below the Silt section. This stratum consisted primarily of Clay with variable quantities of fine sand and silt. Cal Poly Pomona SPT 'N' values indicate that this stratum has in-situ densities ranging from 'very loose' to 'medium', averaging 'loose'. It should be noted that a zone of very loose soil was encountered in toward the end of the boring, between depths of 12 and 13 feet BGS at boring B-3; however, as discussed in the following *Groundwater* Section of this report, the low SPT results are attributed to saturated soils from conditions.

Groundwater

Groundwater was encountered at the depth of 13 feet and 16 feet below the ground level at B-3 and B-5 respectively. Moist to wet zones were also encountered at shallower depths; however, due to the variability in locations and depths encountered and the presence of layers of silt/clay soils, it is anticipated that these moist/wet soil zones are indicative of perched/trapped water conditions.

It should be noted that fluctuation in groundwater levels can occur due to several factors, including variations in precipitation, seasonal changes, and site development activities, which can alter surface water drainage paths.

Considering the relatively shallow depth of groundwater throughout the eastern approximately one-half of the proposed sewer alignment, we anticipate that dewatering will be necessary to accomplish the installation of the sewer main throughout the eastern portion of the alignment.

In addition to the obtained information from the manually performed exploratory boring, the available public data provided by GeoTracker was also investigated. GeoTracker is a portal that retrieve records and view integrated data sets from multiple State Water Board programs and other agencies. These data can be seen through a GIS interface. Note that the project site elevation is -164 feet below sea level. This site is within the California Watershed, Whitewater – Coachella – Indio; and the Public Water system, Coachella VWD Cove Community. The recorded ground water level at a number of wells in the vicinity of the project location have been shown in Figure 6. It should be noted that these values should only be used as an estimate for the ground water level at the project site, and this report has not verified the shown values.

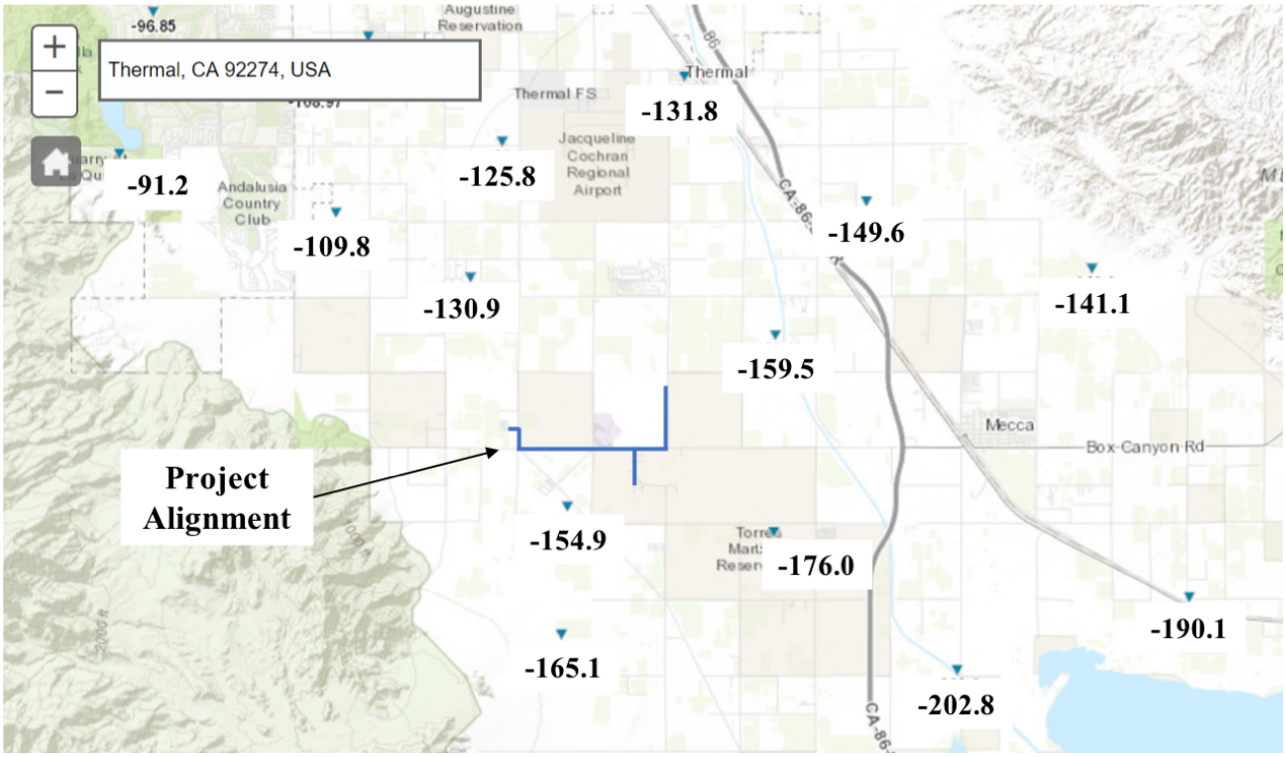


Figure 6: Water elevation in the monitoring and irrigation wells in the vicinity of the project site

Laboratory Testing

Representative soil samples obtained from the borings were subjected to laboratory testing to supplement the visual classification of the soils and evaluate their general engineering characteristics. A total of four undisturbed samples (California ring sample) and ten disturbed samples were collected from the project location through hand borings. The representative samples were taken to the soil mechanics lab at California State Polytechnic University, Pomona in order to determine the soil characteristics and mechanics present at the site. The undisturbed samples produced eleven ring samples of soil that were used for direct shear and consolidation tests. Atterberg limits, moisture content, optimum moisture content, grain size distribution, chemical composition testing and expansion index were performed on the disturbed samples.

Classification and Compaction Testing

Atterberg Limits and Moisture Content Determinations:

About 10-16 grams from seven separate disturbed samples were tested for moisture content, liquid limit, and plastic limit in accordance with ASTM Standard D4318. The liquid limit and plastic limit were used to find the plasticity index and determine USCS soil classification. Table 2 provides a summary of the plastic limit of the samples. Figures A-1 through A-7 in Appendix A, present the results of Liquid Limit (LL) tests. Table 3 and Figure 7 outline the soil classifications. The natural moisture contents of the samples are also presented in Table 4.

Table 2. Plastic Limit (PL) of the soil samples

Sample ID and Depth	Plastic Limit
B1-1'	27.1
B3-3'	25.0
B3-4'	25.2
B3-8'	26.7
B3-9.5'	26.7
B3-11.5'	25.3
B3-13'2"	26.8
B4-6'	25.2
B5-12'	25.5

Table 3. Summary of liquid and plastic limits, plasticity indexes, and ASTM classifications for each sample

Sample ID & Depth	LL	PL	PI	ASTM Classification
B1-1'	32.75	27.1	5.7	ML (Low plasticity silt)
B3-3'	39.25	25.0	14.2	ML (Low plasticity silt)
B3-4'	50.25	25.2	25.1	CH (high plasticity clay)
B3-8'	45.9	26.7	19.2	CL (low plasticity clay)
B3-9.5'	48.25	26.7	21.5	CL (low plasticity clay)
B3-11.5'	46	25.3	20.7	CL (low plasticity clay)
B3-13'	45.25	26.8	18.4	CL (low plasticity clay)
B4-6'	37.2	25.2	12	ML (Low plasticity silt)
B5-12'	45.4	25.8	19.6	CL (low plasticity clay)

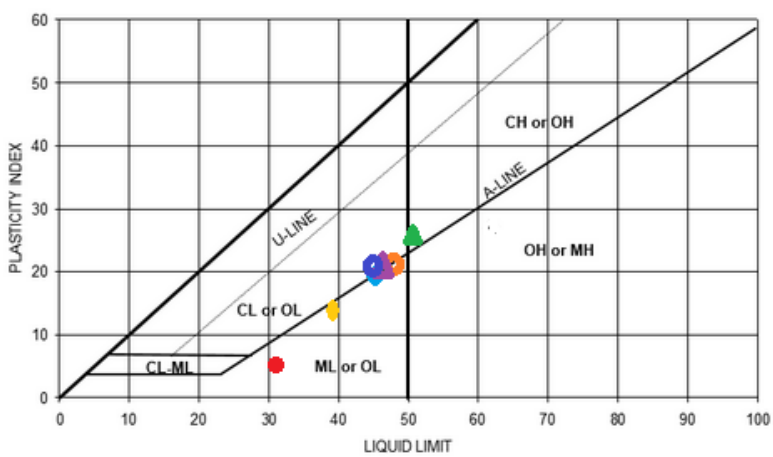


Figure 7: Plasticity chart and soil classification

Table 4. Natural moisture content at each depth

Sample ID	Natural Moisture Content (%)
B1-1'	6.49
B3-3'	8.02
B3-4'	16.9
B3-8'	19.77
B3-9.5'	24.83
B3-11.5'	33.11
B3-13'2"	34.17

Maximum Density-Optimum Moisture Content Determinations: (ASTM D1557-B Method)

From the bulk disturbed sample bag, approximately 10,000 grams were obtained from sieving through the 3/8th with no correction value applied. Four points of approximately 2500 grams each were obtained to find the dry unit weight of the soil. The maximum dry unit weight of the sample was found to be equal to 120 lb/ft^3 at an optimal moisture content 14.25%. The result of the compaction test is presented in Figure 8.

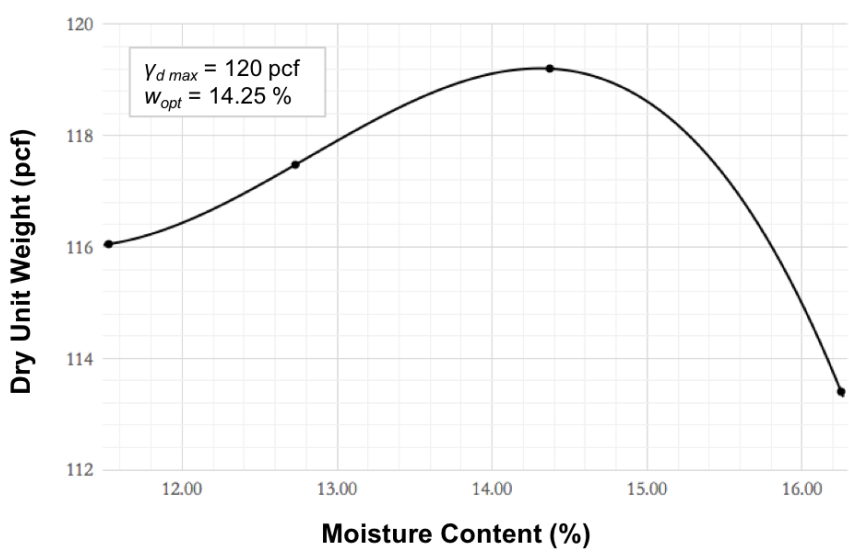


Figure 8: Modified Proctor Test results

Grain Size Distribution:

Between 100 and 200 grams of disturbed soil was collected from seven separate sample depths for grain size analysis. The sieve process was performed according to ASTM Standard D4318-05, and the results are presented in Appendix A, Figure A-8 to A-15.

Chemical Composition:

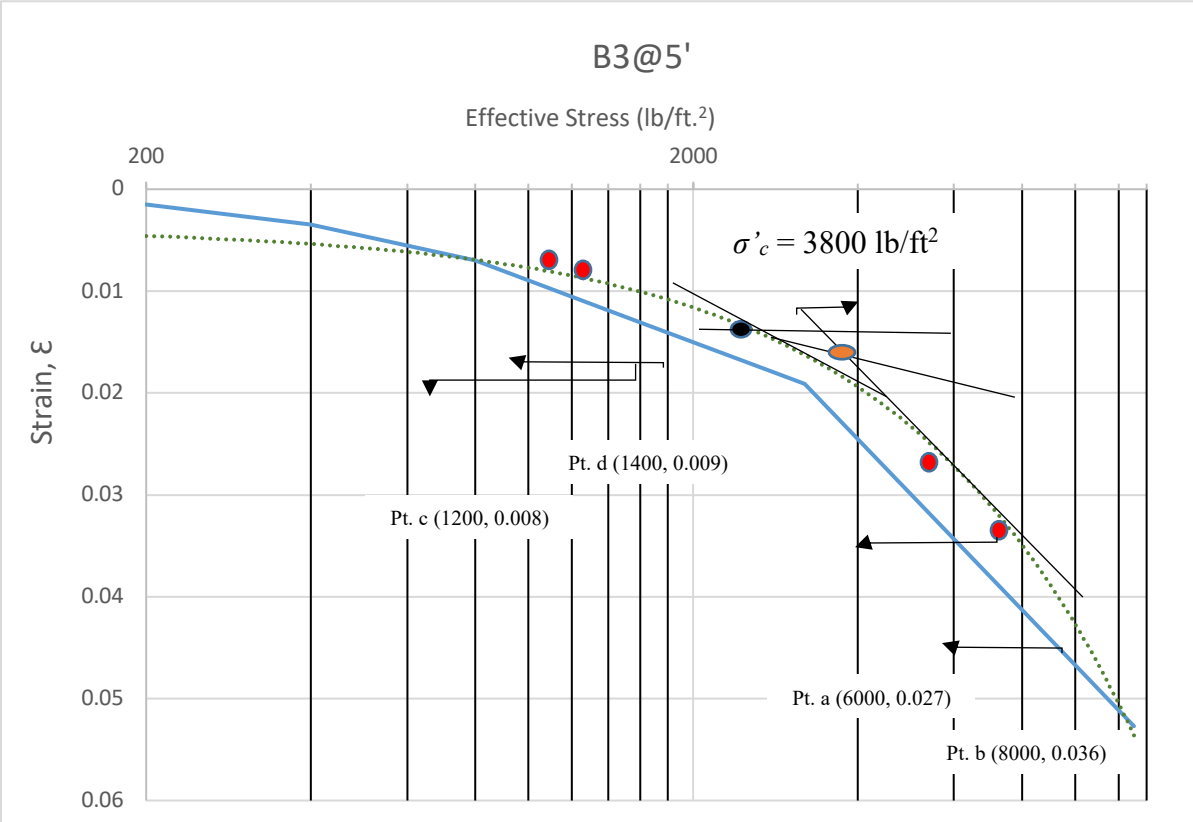
Two samples of 40 grams of disturbed soil was collected from B3 at depth 13 feet. Both samples were tested for pH using ASTM D4972-13 (Standard Test Method for pH in Soil). A pH scope as well as a pH paper were used to perform the test. Results are presented in Table 5.

Table 5. pH testing results

Sample	**pH (probe)**
B3-13'- A	8.21
B3-13' - B	8.28

Consolidation Testing:

Consolidation tests were performed on a two obtained ring samples from B-3, depth 5 feet and 10 feet below the ground surface in accordance to ASTM D2435. The results are shown in Figures 9 and 10 respectively.



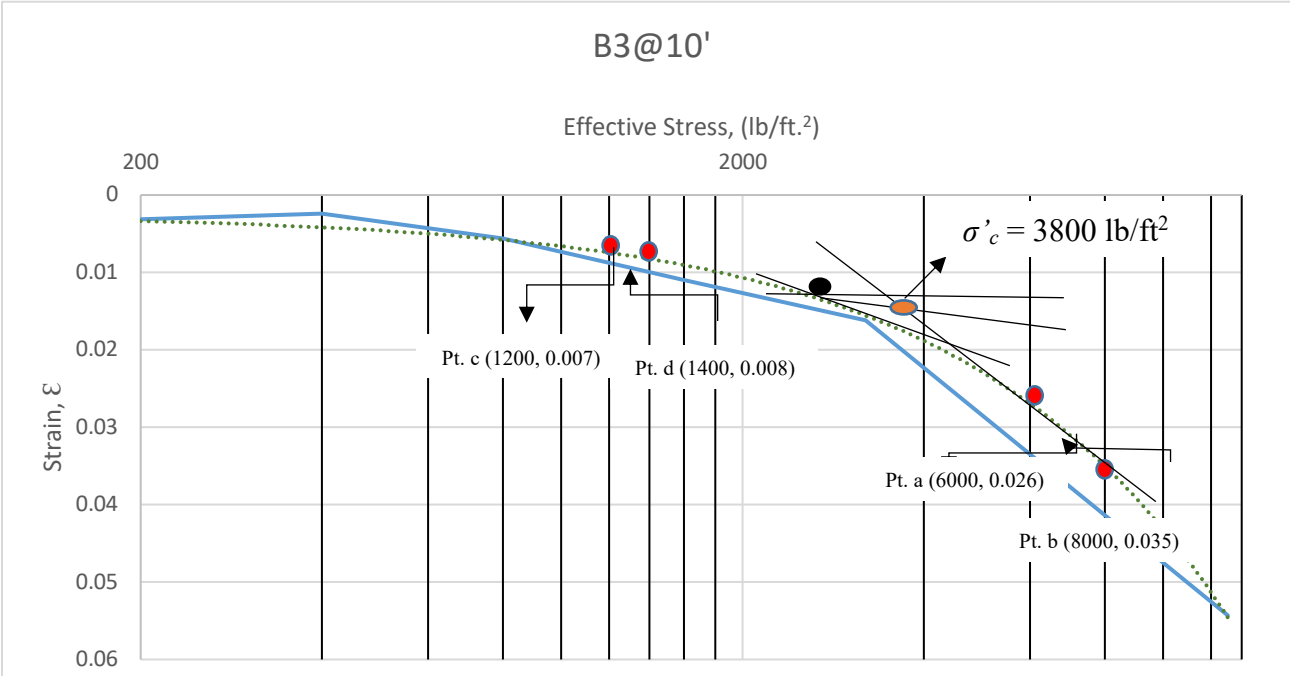
σ'_{z0} = 104 lb/ft^3 * 5 ft = 520 lb/ft.^{2}

$$OCR = \frac{3800 \text{ lb/ft.2}}{520 \text{ lb/ft.2}} = 7.31$$

$$\frac{C_c}{1+e_0} = \frac{0.036 - 0.027}{\log(8000) - \log(6000)} = 0.072$$

$$\frac{C_r}{1+e_0} = \frac{0.009 - 0.008}{\log(1400) - \log(1200)} = 0.015$$

Figure 9: Results of the consolidation test on the sample obtained from B3, at depth of 5 feet below ground surface



σ'_{z0} = 104 lb/ft^3 * 10 ft = 1040 lb/ft^2

$$OCR = \frac{3800 \text{ lb/ft.2}}{1040 \text{ lb/ft.2}} = 3.65$$

$$\frac{C_c}{1+e_0} = \frac{0.035 - 0.026}{\log(8000) - \log(6000)} = 0.072$$

$$\frac{C_r}{1+e_0} = \frac{0.008 - 0.007}{\log(1400) - \log(1200)} = 0.015$$

Figure 10: Results of the consolidation test on the sample obtained from B3, at depth of 10 feet below ground surface

Expansion Index Testing: (ASTM D 4829)

The expansion index test was performed on the disturbed bulk sample bag to determine its swelling potential. Approximately 1100 grams were obtained after sieving through the #4 sieve to perform the test. A degree of saturation between 48-52% was required based on ASTM standards. The results reveal that the tested sample has a low expansion index of 31.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of this study, construction of the proposed sewer transmission main is feasible provided the recommendations contained herein are followed and that the standard level of care is maintained during construction. The primary geotechnical issues identified during this study that will likely impact site development include the following:

- The relatively shallow depth of the ground water level.
- Reduced bearing pressures due to 'loose' soil zones.
- Portions of the site soils contain high percentages of silt and clay, which can become unstable when wet and/or disturbed and may prove to be difficult to work with during mass earthwork.
- Potential seismic activities and the existence of the fault systems in the region

The following sections of this report provide further discussion of these issues as well as other geotechnical recommendations for design and construction of this project.

Groundwater Control

Based on the results of this study, it is anticipated that groundwater will pose a significant problem during mass earthwork or construction of some portions of the project. The groundwater was encountered in relatively shallow depth compared to the depth of embedment of the sewer main. It is anticipated that in some portions of the site, the embedment depth of the sewer main would be lower than the level of the groundwater. Appropriate steps must be taken to control the groundwater seepage to the open excavations. Although large amount of clayey soil with a typical low hydraulic conductivity was encountered in the site, should seepage from groundwater be encountered in open excavations, it is anticipated that pumping from sumps located within the excavations might not be sufficient to maintain relatively dry and stable working conditions. Should pumping be required, sump pits should be filled with ¾-inch clean stone and be lined with geotextile filter fabric to prevent excessive particle migration, particularly if heavy pumping is required. Pumped water should be discharged away from the open excavations.

The contract documents should require the contractor to provide whatever means and methods are necessary to maintain stable and relatively dry excavations and subgrade conditions at all times during construction. Surface grading should be maintained on a continual basis during construction to direct surface water runoff away from open excavations and prevent water from pooling on subgrade soils. Exposed soils should be roller compacted at the end of each day's work with a roller to help protect the subgrade soils by limiting the amount of surface water infiltration from precipitation.

Seismicity

Utilizing the USGS Design Maps Report for the site latitude 33.5701° North and longitude of -116.1472° West, the seismic design parameters in Table 6 shall be applied. These design parameters are based on the ASCE 7-10 standard.

Table 6. Seismic design parameters provided by USGS

Seismic Parameter	Recommended Value
Site Class	E
Mapped Spectral Acceleration-S_s	1.500 g
Mapped Spectral Acceleration-S_1	0.637 g
MCE Spectral Acceleration-S_{ms}	1.350 g
MCE Spectral Acceleration-S_{m1}	1.528 g
Design Spectral Acceleration-S_{ds}	0.900 g
Design Spectral Acceleration-S_{d1}	1.019 g
Peak Ground Acceleration-PGA	0.555 g

It should be noted that these design parameters are considered to be a minimum for the project and not maximum values that the project area may experience. Due to the recent seismic activity in the

area it is recommended that the project design engineers use these parameters along with their engineering judgement to evaluate design criteria.

LIMITATIONS

This geotechnical study has been performed in accordance with generally accepted engineering practice and any applicable design standards as referenced herein. This report and all supporting documentation have been prepared exclusively for the use of Coachella Valley Water District. All provisions set forth in the Agreement and the General Terms and Conditions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein.

The findings, conclusions, and recommendations contained in this report are based on data revealed by very limited exploration and testing of the subsurface at the referenced project site. The explorations indicate subsurface conditions at the specific locations, depths, and times explored. Should deviations from the described subsurface conditions be encountered at any time prior to or during construction, we should be notified to determine whether the findings necessitate modification of our recommendations.

This report is applicable only to the contemplated site design described herein; any changes in the design should be brought to our attention so that we may evaluate whether our recommendations will be affected. We are not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of us. As such, the conclusions and recommendations contained in this report are pending our review of any environmental issues, such as wetlands, or hazardous or toxic materials on, below, or in the vicinity of the subject site. Any statements in this report or supporting documentation regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our Client.

APPENDIX A

BORING B-3

Cal Poly Pomona

DATE STARTED 12/15/17 **COMPLETED** 12/15/17 **PROJECT NAME** Preliminary Geotechnical Investigation

DRILLING METHOD Hand Auger **PROJECT LOCATION** Ave 66 and Polk Street, Thermal, CA

LOGGED BY JZ **GROUND ELEVATION** -168 ft

NOTES **HOLE SIZE** 4 inches

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE
0	SM		(SM) **SILTY SAND**, gray-brown, dry, fine	AU
	ML		(ML) **SILT**, low plasticity, olive brown	AU
5	CL		(CL) **CLAY**, plastic	RI
	CL		(CL) **SANDY CLAY**, moist	AU
	CL		more moist	AU
10	CL			RI
	CL-ML		(CL-ML) **SILTY SAND with SAND**, olive brown	AU
▼	CL-ML		brown, wet	AU

End of boring at 13.2 feet.
Boring terminated at apparent GWL

Cal Poly Pomona

DATE STARTED 5/25/18 **COMPLETED** 5/25/18 **PROJECT NAME** Preliminary Geotechnical Investigation

DRILLING METHOD Hand Auger **PROJECT LOCATION** Ave 66 and Martinez Rd, Thermal, CA

LOGGED BY HM **GROUND ELEVATION** -152 ft

NOTES **HOLE SIZE** 4 inches

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE
0	SM		(SM) **SILTY SAND,** topsoil, fine- to coarse-grained, dry, brown, loose.	
	SM		(SM) **SILTY SAND,** trace clay, fine- to medium-grained, dry, brown, medium dense to dense.	
	SM		(SM) **SILTY SAND,** trace clay, fine- to medium-grained, slightly moist, brown, medium dense.	
5	SP		(SP) **SAND,** poorly graded, fine-grained, slightly moist, gray, medium dense.	
	CL-ML		(CL-ML) **SILTY CLAY,** slightly moist to moist, dark brown, medium stiff.	AU
			End of boring at 7 feet. No groundwater encountered. Backfilled with native cuttings.	

Cal Poly Pomona

DATE STARTED 5/25/18 **COMPLETED** 5/25/18 **PROJECT NAME** Preliminary Geotechnical Investigation

DRILLING METHOD Hand Auger **PROJECT LOCATION** Ave 66 and Martinez Rd, Thermal, CA

LOGGED BY ED **GROUND ELEVATION** -147 ft

NOTES **HOLE SIZE** 4 inches

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE
0	SM		(SM) **SILTY SAND,** topsoil, fine- to coarse-grained, dry, brown, loose	
	CL-ML		(CL-ML) **SILTY CLAY,** slight moisture, brown, medium stiff	
5				AU
	CL-ML		(CL-ML) **SILTLY CLAY**, moist, dark brown medium stiff	
10				
			(CL-ML) **SILTLY CLAY,** moist, dark brown medium stiff	AU
15				

Cal Poly Pomona

DATE STARTED 5/25/18 **COMPLETED** 5/25/18 **PROJECT NAME** Preliminary Geotechnical Investigation

DRILLING METHOD Hand Auger **PROJECT LOCATION** Ave 66 and Martinez Rd, Thermal, CA

LOGGED BY ED **GROUND ELEVATION** -147 ft

NOTES **HOLE SIZE** 4 inches

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE
	CL-ML		(CL-ML) **SILTY CLAY,** moist, dark brown, medium stiff.	AU RI
▼			End of Boring at 17'. Groundwater encountered at 16'. Boring backfilled with native soil.	
20				

Cal Poly Pomona

BORING B-6

DATE STARTED 5/25/18 **COMPLETED** 5/25/18 **PROJECT NAME** Preliminary Geotechnical Investigation

DRILLING METHOD Hand Auger **PROJECT LOCATION** Ave 66 and Martinez Rd, Thermal, CA

LOGGED BY HM **GROUND ELEVATION** -131 ft

NOTES **HOLE SIZE** 4 inches

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE
0	SM		(SM) **SILTY SAND,** topsoil, fine- to coarse-grained, dry, gray-brown, loose to medium dense.	
	SM		(SM) **SILTY SAND,** trace clay, fine- to medium-grained, dry, gray-brown, medium dense to dense.	
	SP-SM		(SP-SM) **SAND with SILT,** poorly graded, fine-grained, dry to slightly moist, gray-brown, loose to medium dense.	AU
5				
	SP-SM		(SP-SM) **SAND with SILT,** fine- to medium-grained, slightly moist, brown, medium dense, with very small sea shells (+/- 1/8 inch length).	AU
	ML		(ML) **SILT,** with sand, slightly moist, dark brown, soft to medium stiff.	
10	ML		(ML) **SILT,** trace clay, slightly moist, dark brown, medium stiff.	AU
			End of boring at 12 feet. No groundwater encountered. Backfilled with native cuttings.	

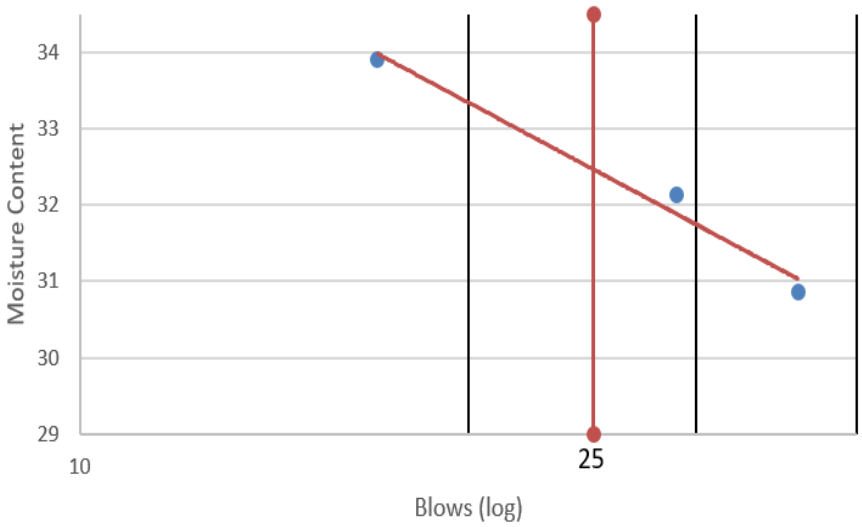


Figure A-1: Liquid Limit test results for Sample B1-1'

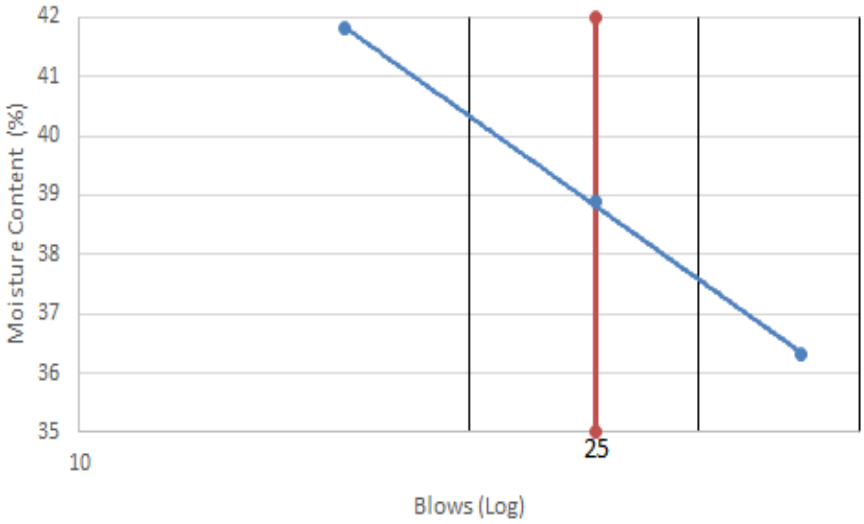


Figure A-2: Liquid Limit test results for Sample B3-3'

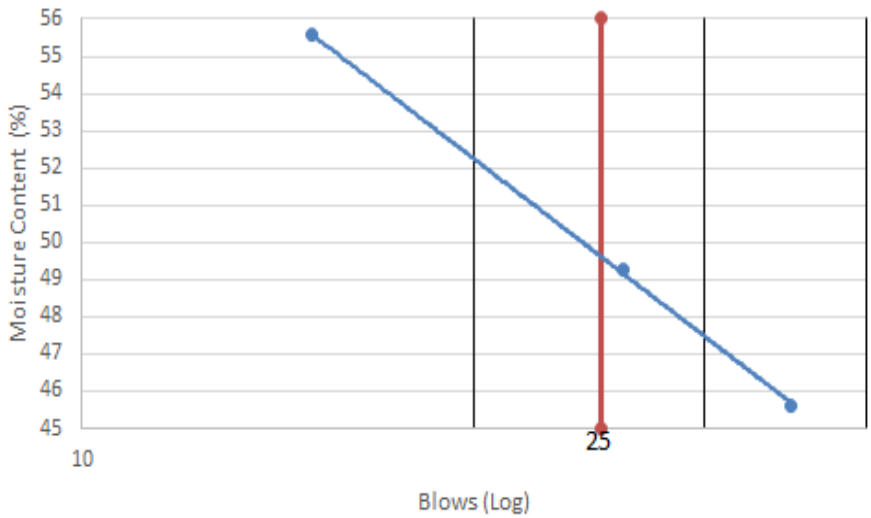


Figure A-3: Liquid Limit test results for Sample B3-4'

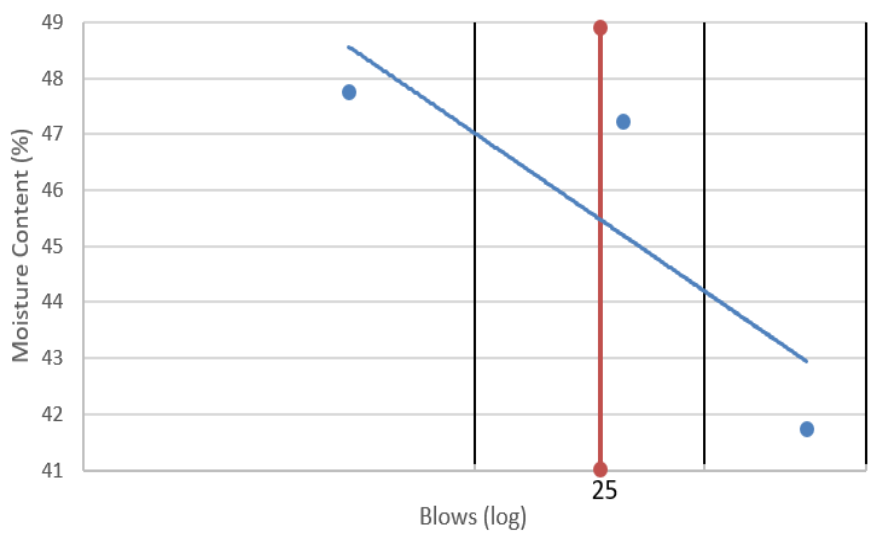


Figure A-4: Liquid Limit test results for Sample B3-8'

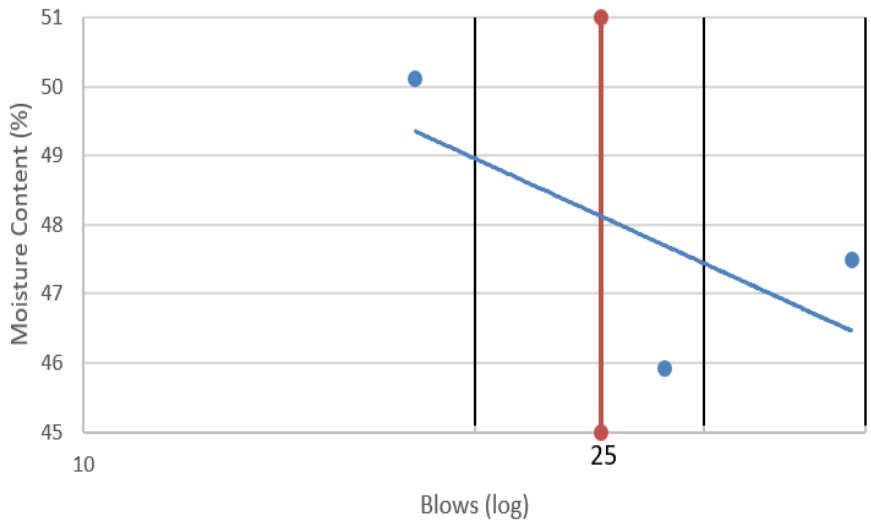


Figure A-5: Liquid Limit test results for Sample B3-9.5'

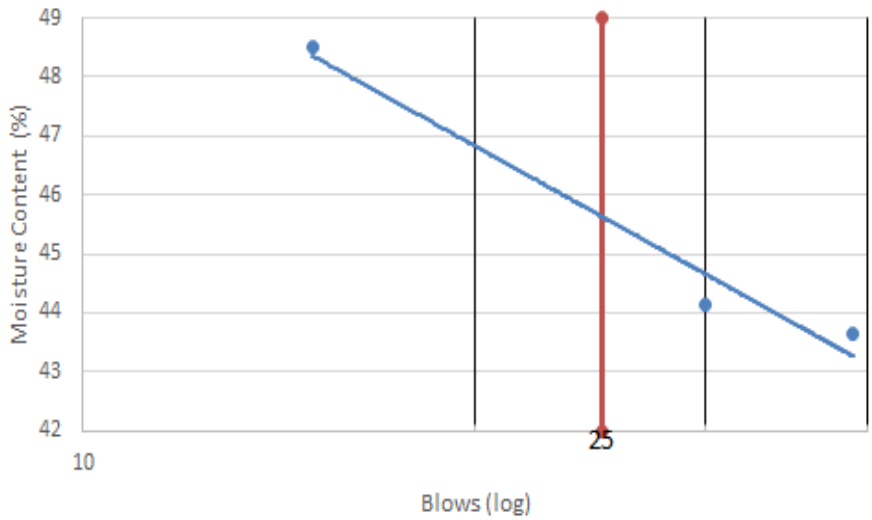


Figure A-6: Liquid Limit test results for Sample B3-11.5'

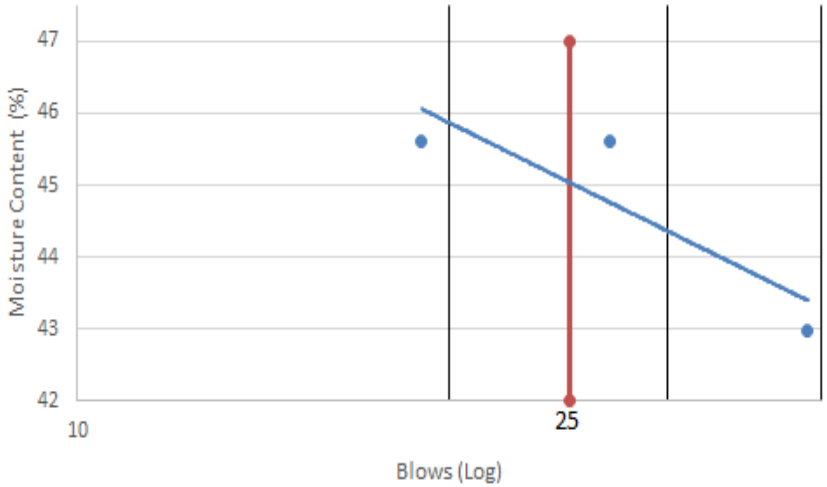


Figure A-7: Liquid Limit test results for Sample B3-13'

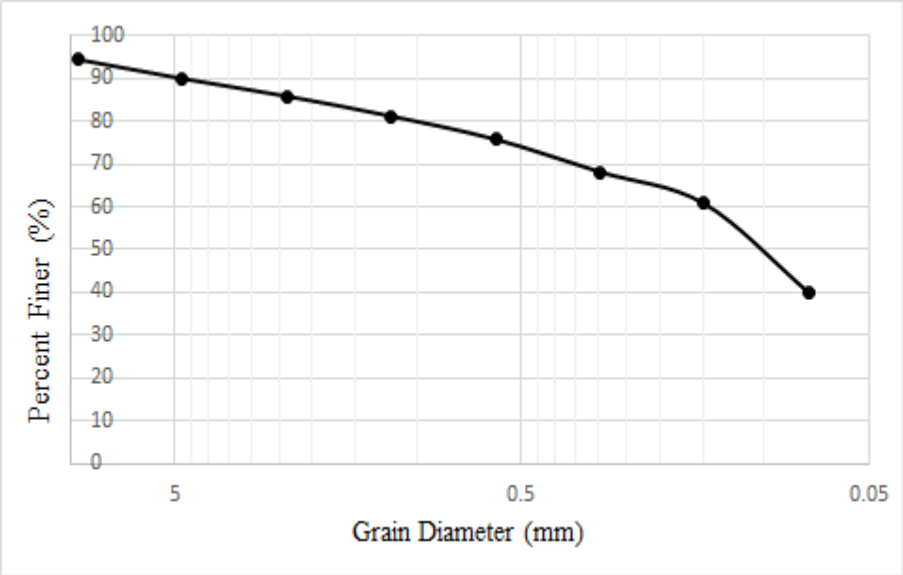


Figure A-8: Grain size distribution for boring B1 @ 1 foot BGS

*Sample Depth = 1 foot below Ground Surface

*Passing sieve #200 = 39.7%

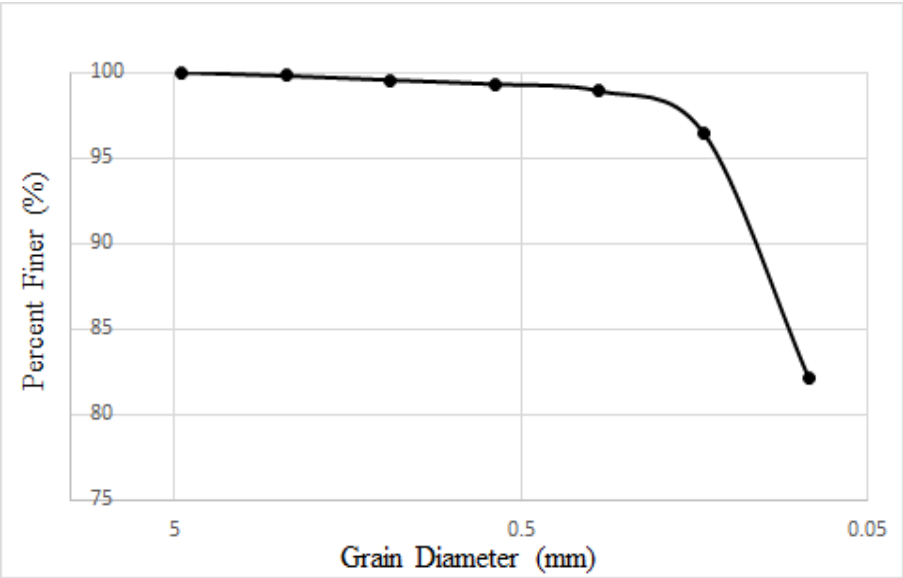


Figure A-9: Grain size distribution for boring B3 @ 3 feet BGS

*Sample Depth = 3 feet below Ground Surface

*Passing sieve #200 = 82.1%

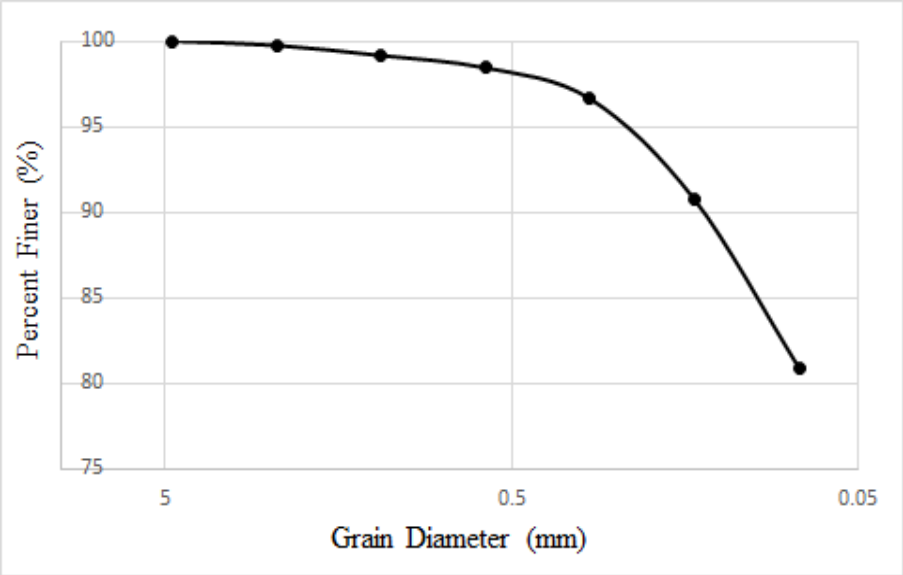


Figure A-10: Grain size distribution for boring B3 @ 4 feet BGS

*Sample Depth = 4 feet below Ground Surface

*Passing sieve #200 = 80.1%

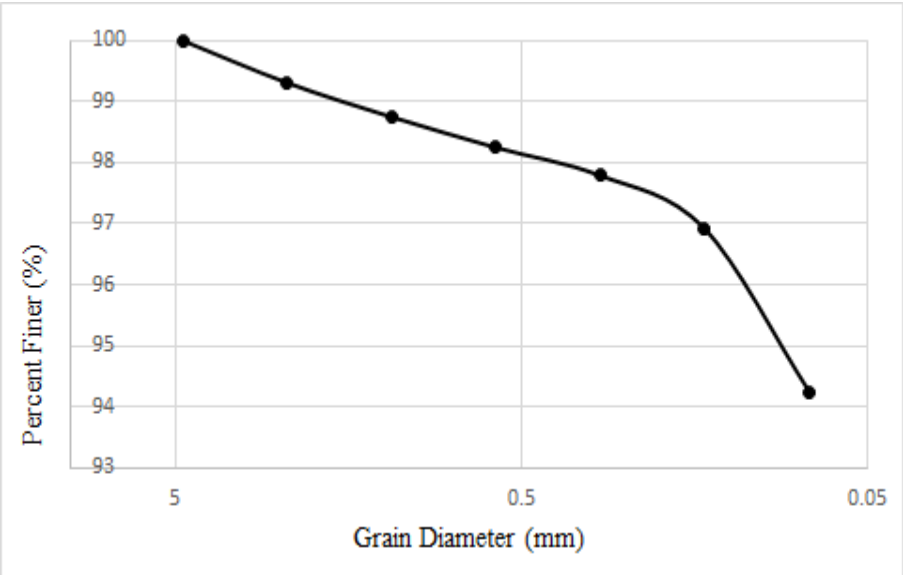


Figure A-11: Grain size distribution for boring B3 @ 8 feet BGS

*Sample Depth = 8 feet below Ground Surface

*Passing sieve #200 = 94.3%

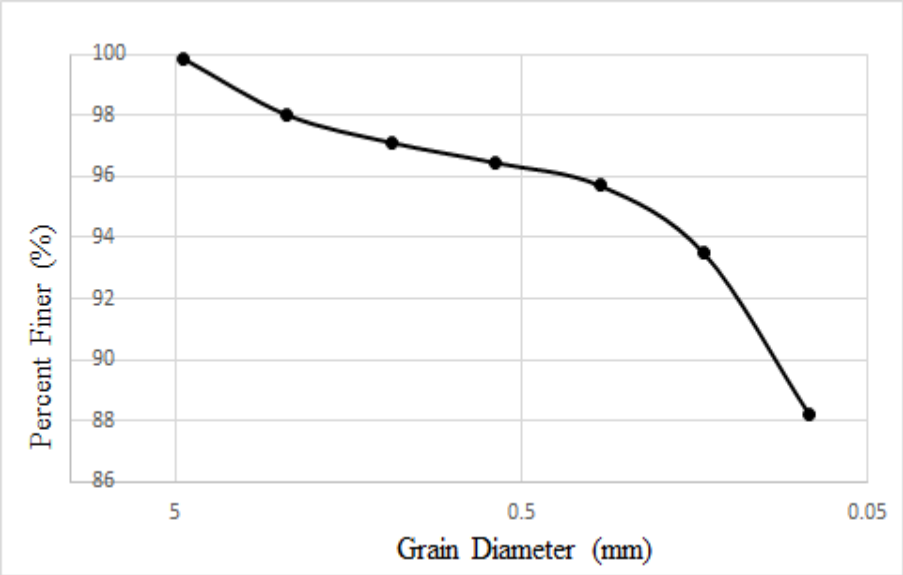


Figure A-12: Grain size distribution for boring B3 @ 9.5 feet BGS

*Sample Depth = 9.5 feet below Ground Surface

*Passing sieve #200 = 88.2%

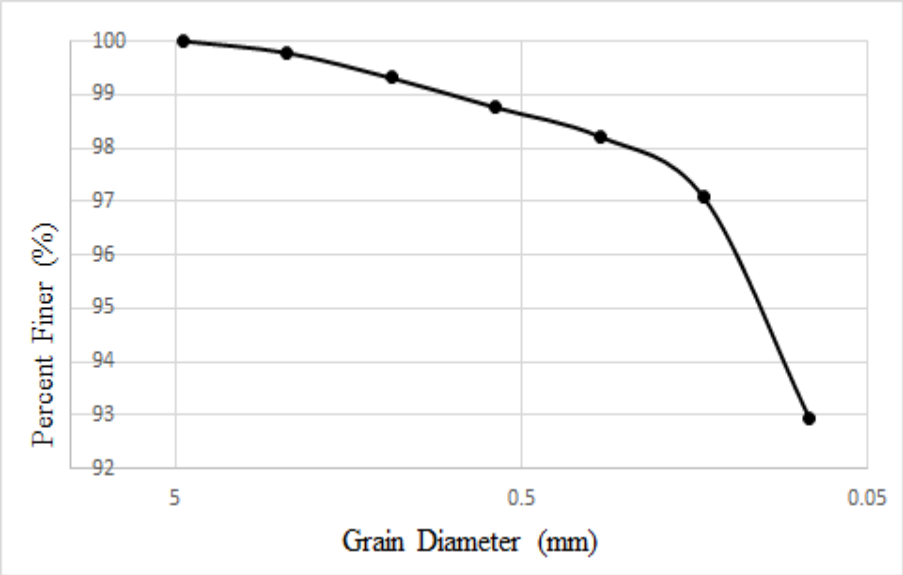


Figure A-13: Grain size distribution for boring B3 @ 11.5 feet BGS

*Sample Depth = 11.5 feet below Ground Surface

*Passing sieve #200 = 93.0%

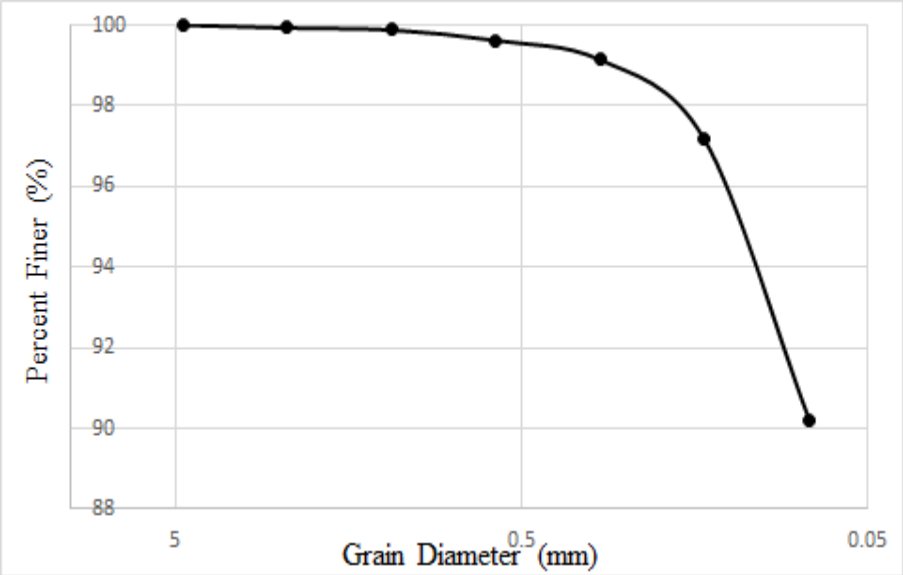


Figure A-14: Grain size distribution for boring B3 @ 13 feet BGS

*Sample Depth = 13 feet below Ground Surface

*Passing sieve #200 = 90.2%

SUPPLEMENTAL GEOTECHNICAL INVESTIGATION

PROPOSED SEWER TRANSMISSION LINE

MOUNTAIN VIEW ESTATES MOBILE HOME PARK

POLK STREET – AVENUE 64 TO AVENUE 69

VALERIE JEAN / MECCA AREA

RIVERSIDE COUNTY, CALIFORNIA

-Prepared By-

Sladden Engineering

45-090 Golf Center Parkway, Suite F
Indio, California 92201
(760) 863-0713

Sladden Engineering

45-090 Golf Center Parkway, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
6782 Stanton Avenue, Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863
800 E. Florida Avenue, Suite 200, Hemet, CA 92543 (951) 766-8777 Fax (951) 766-8778

January 4, 2012

Project No. 544-07376
11-12-181

T.C. Morris Construction
50-785 Calle Rondo
La Quinta, California 92253

Project: Proposed Sewer Transmission Main
Mountain View Estates Mobile Home Park
Polk Street from Avenue 64 to Avenue 69
Valerie Jean / Mecca Area
Riverside County, California

Subject: Supplemental Geotechnical Investigation

Ref: Geotechnical Investigation report prepared by Sladden Engineering dated November 6, 2009; Project No. 544-07376, Report No. 09-10-246

Presented herewith is the report of our Supplemental Geotechnical Investigation conducted for the proposed sewer transmission line to be constructed along Polk Street between Avenue 64 and Avenue 69 in the Valerie Jean/Mecca area of Riverside County, California. The proposed project will consist of installing 10, 12 and 18 inch diameter VCP sewer transmission mains along Polk Street to serve the Mountain View Estates Mobile Home Park. The supplemental investigation was requested by Coachella Valley Water District (CVWD) personnel following the review of the above referenced report.

This report presents the results of our field investigation and laboratory tests along with conclusions and recommendations for domestic water transmission main design and construction. This report completes our original scope of services as outlined in our proposal dated October 31, 2011

We appreciate the opportunity to provide service to you on this project. If you have any questions regarding this report, please contact the undersigned

Respectfully submitted,
SLADDEN ENGINEERING

REGISTERED PROFESSIONAL ENGINEER
BRETT L. ANDERSON
No. C 45389
Exp. 9-30-2012
CIVIL
STATE OF CALIFORNIA

Brett L. Anderson
Principal Engineer

SER/mc
Copies: 6/addressee

SUPPLEMENTAL GEOTECHNICAL INVESTIGATION
PROPOSED SEWER TRANSMISSION LINE
MOUNTAIN VIEW ESTATES MOBILE HOME PARK
POLK STREET – AVENUE 64 TO AVENUE 69
VALERIE JEAN / MECCA AREA
RIVERSIDE COUNTY, CALIFORNIA

January 4, 2012

TABLE OF CONTENTS

INTRODUCTION

This report presents the results of our Supplemental Geotechnical Investigation performed to provide additional information regarding the soil conditions along the alignment of the proposed VCP sewer transmission main. The project site is located along Polk Street between Avenue 64 and Avenue 69 in the Valerie Jean/Mecca area of Riverside County, California. The approximate alignment is shown on the Site Location Map, Figure 1.

The supplemental investigation was requested by Coachella Valley Water District (CVWD) personnel following their review of the previous geotechnical report ([1]Sladden, 2009).

SCOPE OF WORK

The purpose of our supplemental investigation was to evaluate the conditions of the near surface soil and ground water conditions along the southern portion of the project alignment. Our investigation included field exploration by drilling, laboratory testing, engineering analysis and the preparation of this report. The evaluation of environmental issues or hazardous wastes was not within the scope of services provided. Our investigation was performed in accordance with contemporary geotechnical engineering principles and practice. We make no other warranty, either express or implied.

PROJECT DESCRIPTION

The proposed sewer main alignment is located along Polk Street between Avenue 64 and Avenue 69 in the Valerie Jean/Mecca area of Riverside County, California. The project proposed will include the installation of 10, 12 and 18 inch diameter VCP transmission sewer lines. The sewer main installation is expected to be accomplished using conventional open cut trenching operations.

The proposed sewer alignment extends from just south of Avenue 64 to approximately Avenue 67 is located along the future extension of Polk Street and the ground surface is covered with scattered short grass and weeds. The proposed sewer alignment extending south of 67th Avenue to the Mountain View Estates Mobile Home site is located along an existing portion of Polk Street. Polk Street is paved between 67th Avenue and the Mountain View Estates site. The proposed sewer main will be installed at depths of approximately 9 to 18 feet below the existing ground surface. In general, the southern portion of the sewer alignment is relatively shallow (less than 10 feet in depth), but pipeline depth increases to the north.

Considering the relatively shallow depth of groundwater throughout the northern approximately one-half of the proposed sewer alignment, we anticipate that dewatering will be necessary to accomplish the installation of the sewer main throughout the northern portion of the alignment.

[1] Sladden Engineering, 2009, Geotechnical Investigation, Proposed Sewer Main Line, Polk Street Between 64th Avenue and 69th Avenue, Valerie Jean Area, Riverside County, California; dated November 6, 2009; Project No. 544-07376, Report No. 09-10-246.

SUBSURFACE CONDITIONS

The near surface soil encountered along the proposed sewer transmission main alignment consists primarily of native silty sand, sandy silt, clayey silt and silty clay layers. As is typical for the area, the silty sand, sandy silt, clayey silt and silty clay layers are inconsistently interbedded along the project alignment and vary in thickness. Silty sand and clayey silt were the most prominent soil encountered within our exploratory bores throughout the project alignment. Silty sand was more prominent along the southern portion of the alignment and clayey silt was more prominent throughout the northern portion of the alignment.

Groundwater was encountered within our bores at depths between approximately 8 and 25 feet below the existing ground surface. Based on our current field investigation and previous experience along the project alignment ([2]Sladden, 2009), groundwater will be a primary consideration in the proposed sewer main design and construction throughout the northern potion of the project alignment.

CONCLUSIONS AND RECOMMENDATIONS

Based upon our supplemental and initial field investigation and laboratory testing, it is apparent that the near surface soil and groundwater conditions underlying the project alignment will impact the design and the construction of the proposed sewer transmission line.

Groundwater was encountered at depths between approximately 8 and 20.5 feet below the existing ground surface within our bores. Based upon the relatively shallow depth to groundwater, the presence of groundwater should be a primary consideration in the design and construction of the proposed sewer transmission main. In general, the northern approximately ½ of the project alignment will be affected by shallow groundwater conditions.

Caving occurred within each of our exploratory bores and the surface soil will be susceptible to caving within the required excavations. All excavations should be constructed in accordance with Cal OSHA trench excavation criteria. On the basis of our observations of the materials encountered, we anticipate that the subsoil along the project alignment will conform to that described by Cal OSHA as Type "B" or "C". Soil conditions should be verified in the field during construction by a "Competent person" employed by the Contractor.

No gases or unusual odors were encountered during our drilling operations. The soil is generally classified as "non-gassy" in accordance with Article 8 of the Cal OSHA Mining and Tunneling guidelines. The soil remains in a basically native condition along the project alignment where there is no potential for naturally occurring gases. No evidence of fuel tank or transmission line leakage was observed during our field investigation. Based upon this, it is our opinion that the potential for gases impacting boring and jacking operations should be minimal.

[2] Sladden Engineering, 2009, Geotechnical Investigation, Proposed Sewer Main Line, Polk Street Between 64th Avenue and 69th Avenue, Valerie Jean Area, Riverside County, California; dated November 6, 2009; Project No. 544-07376, Report No. 09-10-246.

The following recommendations present more detailed pipeline design criteria that have been developed based upon the field exploration and laboratory testing summarized herein as well as our engineering evaluation.

Lateral Design: Resistance to lateral loads may be provided by a combination of friction acting at the base of footings or thrust blocks, passive earth pressure along the sides of subsurface structures or thrust blocks. A coefficient of friction of 0.35 between soil and concrete may be used with dead load forces only. A passive earth pressure of 250 pounds per square foot, per foot of depth, may be used for the sides of footings or thrust blocks that are supported by competent native soil or compacted backfill soil. When used in combination with the passive resistance, the coefficient of friction should be reduced by one-third.

Shoring: The following lateral pressures should be applicable for use in the preliminary design of temporary shoring systems that will likely be required in some areas to accomplish the proposed sewer transmission line installation.

Flexible shoring may be designed using "active" pressures. Active pressures may be estimated using an equivalent fluid weight of 45 pcf for native soil with level native backfill conditions. Any surcharge loads such as overburden should also be considered in design.

For rigid shoring systems that are restrained against lateral movement, the "at rest" pressures should be utilized in design. At rest pressures may be estimated using an equivalent fluid weight of 65 pcf for native backfill soil with level native backfill conditions. Any surcharge loads such as overburden should also be considered in shoring system design.

Excavations: The majority of the site soil will be classified as "B" or "C" type soil per CAL-OSHA trenching guidelines Section 1926.652. Trenches deeper than 5 feet in depth should be excavated in accordance with CAL-OSHA Trench guidelines.

In areas where adequate space exists, it may be possible to slope the proposed excavations to limit the use of temporary shoring. **The upper portion of the excavation should have slope cuts no steeper than one horizontal to one vertical (1 to 1) to a maximum depth of 15 feet below existing grade or to current ground water levels.**

It should be noted that the allowable engineered slope configuration provided is adequate for temporary excavations only. Excavations should not be left open for extended periods of time, we suggest a maximum exposure of 2 days.

Construction site safety is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods, and sequencing of construction operations. We are providing this information solely as a service to our client. Under no circumstances should this information be interpreted to mean that Sladden Engineering is assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

Pipe Bedding: The majority of the native soil encountered at the planned sewer main depth is expected to be competent and should be expected to provide adequate support for the proposed VCP pipe considering standard CVWD pipe bedding specifications. Rock bedding will likely be required in areas near or below the existing groundwater level. Pipe bedding consisting of crushed rock and geo-grid reinforcement placed in conformance with typical CVWD bedding specifications should be expected to provide adequate pipe support.

Dewatering: It is apparent that dewatering will be required to accomplish sewer main installation throughout the northern approximately one-half of the proposed project alignment. The project plans indicate that excavations up to 20 feet will be required to accomplish the proposed sewer transmission main construction.

Dewatering should be accomplished using well points placed outside of trench excavations to reduce the potential for heaving of the soil within the excavation bottoms. The Contractor should be aware that the dewatering and trenching operations will result in significant changes to the effective stresses of the native soil within the construction area that may result in ground movement.

The Contractor is solely responsible for designing and implementing the dewatering program and pipeline installation operations to prevent ground movement within and adjacent to the sewer transmission line.

Corrosion Testing: The soluble sulfate concentrations of the surface soil were determined to be 1800 parts per million (ppm) that is considered potentially corrosive with respect to concrete. The use of Type V cement and special sulfate resistant concrete mixes will likely be necessary. The pH level of the near surface soil was determined to be 10.7. The soluble chloride concentration of the surface soil was determined to be 1200 ppm. The minimum resistivity of the surface soil was 200 ohm-cm that is considered severely corrosive with respect to ferrous metal installations. Proper corrosive protective measures should be incorporated into project design.

Shrinkage and Subsidence: Volumetric shrinkage of the material that is excavated and replaced as controlled compacted backfill material should be anticipated. We estimate that this shrinkage should be between 15 and 20 percent. This will vary depending upon the type of equipment used, the moisture content of the soil at the time of placement and the actual degree of compaction attained.

General Site Preparation: All trench backfill and grading should be performed in accordance with typical CVWD specifications and the applicable ordinances of the County of Riverside, California. The following recommendations have been developed on the basis of our field and laboratory tests:

1. **Placement of Compacted Fill or Trench Backfill:** Backfill and fill material consisting of on-site native soil or approved imported granular soil, should be placed in thin lifts, and compacted at near optimum moisture content to a minimum of 90 percent relative compaction. Imported material shall have an Expansion Index not exceeding 20. The contractor shall notify the Soil Engineer at least 48 hours in advance of importing soil in order to provide sufficient time for the evaluation of proposed import materials.

   The contractor shall be responsible for delivering material to the site that complies with the project specifications. Approval by the Soil Engineer will be based upon material delivered to the site and not the preliminary evaluation of import sources.

   Our observations of the material encountered during our investigation indicate that compaction will be most readily obtained by means of heavy rubber-wheeled equipment and/or sheep foot compactors. At the time of our investigation, the subsoil was found to be dry near the surface but wet near and below groundwater levels. Excavated wet soil may need to be dried back prior to use as fill soil. A uniform and near optimum moisture content should be attained during recompaction and fill placement.

2. **Tests and Inspection:** During backfill and grading operations, tests and observations should be performed by the Soil Engineer or his representative in order to verify that the fill/backfill is being performed in accordance with the project specifications. Field density tests shall be performed in accordance with acceptable ASTM test methods. The minimum acceptable degree of compaction should be 90 percent of the maximum dry density as obtained by the ASTM D1557-02 test method. Where tests indicate insufficient density, additional compaction effort shall be applied until retests indicate satisfactory compaction.

GENERAL

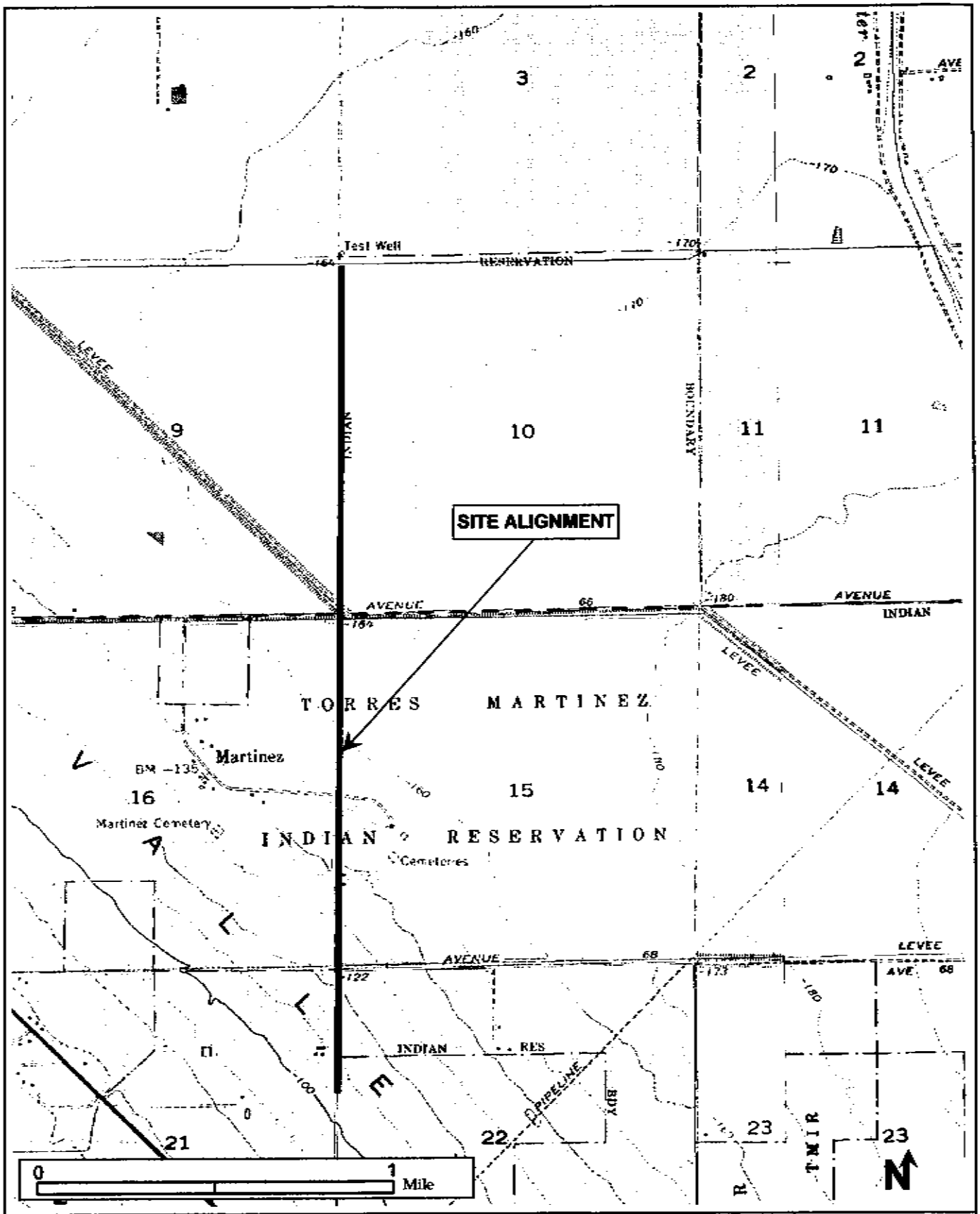
The findings and recommendations presented in this report are based upon an interpolation of the soil conditions between the exploratory bore locations and extrapolation of these conditions throughout the proposed building area. Should conditions encountered during grading appear different than those indicated in this report, this office should be notified.

This report is considered to be applicable for use by T.C. Morris Construction for the specific site and project described herein. The use of this report by other parties or for other projects is not authorized. The recommendations of this report are contingent upon monitoring of the grading operation by a representative of Sladden Engineering. All recommendations are considered to be tentative pending our review of the grading operation and additional tests, if indicated. If others are employed to perform any soil tests, this office should be notified prior to such tests in order to coordinate any required site visits by our representative and to assure indemnification of Sladden Engineering.

Our investigation was conducted prior to the completion of plans for the project. We recommend that a pre-job conference be held on the site prior to the initiation of site grading. The purpose of this meeting will be to assure a complete understanding of the recommendations presented in this report as they apply to the actual grading performed.

FIGURES

SITE LOCATION MAP
BOREHOLE LOCATION PLAN



Sladden Engineering	SITE LOCATION MAP		FIGURE
	Project Number:	544-07376	1
	Report Number:	11-12-181	
	Date:	January 4, 2012	

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA

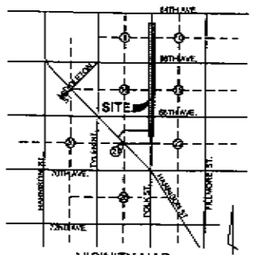
OFF-SITE SEWER IMPROVEMENT PLANS

FOR

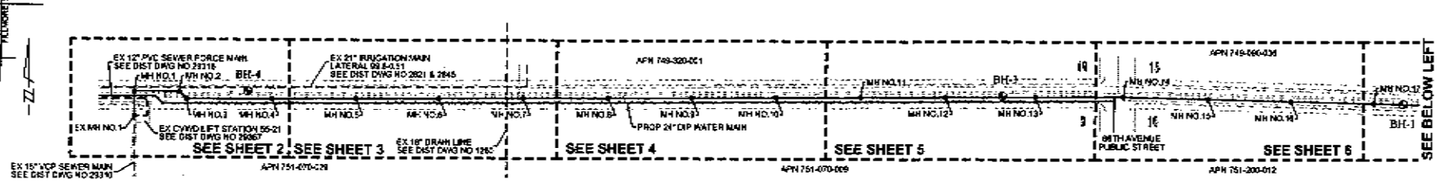
MOUNTAIN VIEW ESTATES MOBILE HOME PARK

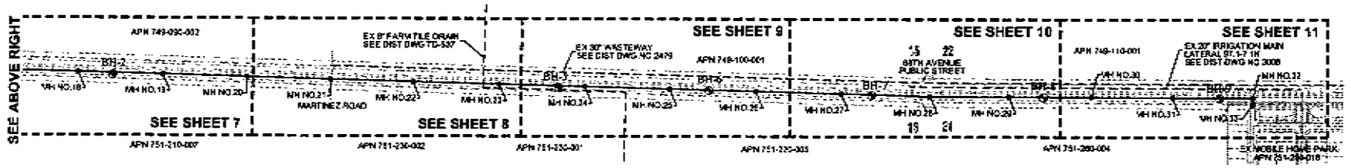
POLK STREET

IN THE E 1/2 OF SEC. 9, THE E 1/2 OF SEC. 16, & THE NE 1/4 OF SECTION 21, T.7S., R.9E., S.B.B.M.



VICINITY MAP
N.T.S.
SECTION 21, T.7, S., R.9, E., S.B.B.M.





LOCATION & INDEX MAP
SCALE: 1" = 300'

1 IN FEET
1 INCH = 300 FT

Borehole Location

SHEET INDEX

SHEET 1	TITLE SHEET
SHEETS 2 - 11	PLAN AND PROFILE
SHEET 12	TRENCH DETAIL

BASIS OF BEARINGS:

GRID NORTH FOR CALIFORNIA COORDINATES SYSTEM NAD 83, ZONE 6, TAKEN FROM TRI-STATIONS THERMAL RESET, NOMBRE, DUNAS AND HPGS STA. D CA 11 G.U. BEING N 07°18'09"W.

OWNER/DEVELOPER:

ROBERT B. VEUZESIAN
35-400 GRAPEFRUIT BLVD.
COACHELLA, CA 92236
PHONE: (760) 398-7100

SOILS ENGINEER:

SLADDEN ENGINEERING
77-225 ENFIELD LANE, SUITE 100
PALM DESERT, CA 92211
PH:(760)772-3665

APN:

751-260-016, 751-260-017

NOTE:

NEW CONSTRUCTION TO BE PLUGGED UNTIL SEWER SYSTEM IS APPROVED FOR SERVICE. PLUG TO BE REMOVED IN PRESENCE OF DISTRICT INSPECTOR.

C.V.W.D. REFERENCE DRAWINGS	
29510, 29316, 29319	SEWER IMPROVEMENT PLANS
29367	LIFT STATION SITE AND PIPING PLAN
2621 & 2645	LATERAL 99.8-0.51 IRRIGATION MAIN PLANS
1260	AVENUE 58 DRAIN PLAN & PROFILE
TC-537	FARM TILE DRAIN PLAN
3008	LATERAL 97.-7.1H IRRIGATION PLAN
3479	WASTEWAY FOR LATERAL 97.1 PLAN

EASEMENT INFORMATION:

20' SEWER EASEMENT PER INST. NO. 2003-873775, REC. 11/04/2003, O.R.
60' PUBLIC HIGHWAY EASEMENT PER INST. NO. 32692, REC. 4/17/1958, O.R.

ESTIMATE OF QUANTITIES	
FURNISH AND INSTALL 18" VCP SEWER MAIN	7,166 LF.
FURNISH AND INSTALL 12" VCP SEWER MAIN	2,896 LF.
FURNISH AND INSTALL 10" VCP SEWER MAIN	1,473 LF.
FURNISH AND INSTALL 8" VCP SEWER MAIN	33 LF.
FURNISH AND INSTALL 48" DIAMETER MANHOLE	32 EA.
FURNISH AND INSTALL 12" PLUG	2 EA.
FURNISH AND INSTALL 10" PLUG	2 EA.
FURNISH AND INSTALL 8" PLUG	8 EA.

NOTE:

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-227-2600
2 WORKING DAYS BEFORE YOU DIG

PIPELINE TANGENT DATA

LINE	BEARING	LENGTH	SIZE/TYPE	SHEET(S)
L1	N 89°41'51"E	109.31	18" VCP	2
L2	N 00°18'09"W	196.00	18" VCP	2
L3	N 44°41'51"E	48.08	18" VCP	2
L4	N 00°18'09"W	375.14	18" VCP	2
L5	N 00°18'09"W	376.14	18" VCP	2 & 3
L6	N 00°18'09"W	376.14	18" VCP	3
L7	N 00°18'09"W	376.14	18" VCP	3
L8	N 00°18'09"W	376.14	18" VCP	3 & 4
L9	N 00°18'09"W	376.14	18" VCP	4
L10	N 00°18'09"W	376.14	18" VCP	4
L11	N 00°18'09"W	376.14	18" VCP	4 & 5
L12	N 00°18'09"W	376.14	18" VCP	5
L13	N 00°18'09"W	400.00	18" VCP	5
L14	N 00°18'09"W	328.04	18" VCP	5 & 6
L15	N 89°22'28"W	10.00	12" VCP	6
L16	N 01°31'44"E	360.88	18" VCP	6
L17	N 01°31'44"E	375.64	18" VCP	6
L18	N 01°31'44"E	375.64	18" VCP	6 & 7
L19	N 01°31'44"E	375.64	18" VCP	7
L20	N 01°31'44"E	375.64	18" VCP	7
L21	N 01°31'44"E	375.64	18" VCP	7
L22	N 01°31'44"E	373.85	18" VCP	7 & 8
L23	N 88°28'16"W	10.00	12" VCP	8
L24	N 01°31'44"E	6.00	12" VCP	8
L25	N 01°32'28"E	362.70	12" VCP	8
L26	N 01°32'28"E	362.16	12" VCP	8
L27	N 01°32'28"E	362.16	12" VCP	8 & 9
L28	N 01°32'28"E	362.16	12" VCP	9
L29	N 01°32'28"E	362.16	12" VCP	9
L30	N 01°32'28"E	362.16	12" VCP	9 & 10
L31	N 01°32'28"E	360.15	12" VCP	10
L32	N 89°44'13"W	10.00	18" VCP	10
L33	N 00°15'47"E	329.37	18" VCP	10
L34	N 00°15'47"E	362.87	18" VCP	10 & 11
L35	N 00°15'47"E	362.87	18" VCP	11
L36	N 00°15'47"E	362.88	18" VCP	11
L37	N 00°15'47"E	10.06	18" VCP	11
L38	N 89°44'13"W	25.00	8" VCP	11
L39	N 89°44'13"W	17.83	8" SDR 35	11

PIPELINE TANGENT DATA

CURVE	DELTA	RADIUS	LENGTH	SIZE/TYPE	SHEET(S)
C1	1°29'19"	2499.00	64.93	18" VCP	6
C2	0°20'33"	2499.00	14.94	18" VCP	6
C3	0°46'51"	2521.00	34.08	12" VCP	10
C4	0°29'50"	2521.00	21.73	18" VCP	10

MANHOLE LEGEND

MANHOLE NO.	STATION	RIM ELEV.	NOTE	INV. ELEV. (IN)	INV. ELEV. (OUT)	SHEET
EX.MH NO.1	10+00.00	-182.88	LIFT STATION	-185.10	-185.44	2
MH NO.1	10+00.00	-184.90	POLK STREET	-184.69	-184.89	2
MH NO.2	11+99.00	-186.00	POLK STREET	-184.32	-184.42	2
MH NO.3	12+47.06	-187.44	POLK STREET	-184.16	-184.36	2
MH NO.4	14+22.22	-188.90	POLK STREET	-183.54	-183.64	2
MH NO.5	16+98.36	-187.38	POLK STREET	-182.91	-183.01	3
MH NO.6	23+74.80	-184.21	POLK STREET	-182.29	-182.39	3
MH NO.7	27+50.84	-184.86	POLK STREET	-181.67	-181.77	3
MH NO.8	31+26.78	-184.08	POLK STREET	-179.99	-180.09	4
MH NO.9	35+02.92	-185.80	POLK STREET	-179.13	-179.23	4
MH NO.10	38+79.06	-184.93	POLK STREET	-178.37	-178.47	4
MH NO.11	42+55.20	-185.89	POLK STREET	-177.58	-177.68	5
MH NO.12	46+31.34	-187.25	POLK STREET	-176.75	-176.85	5
MH NO.13	50+31.34	-187.23	POLK STREET	-175.90	-176.00	5
MH NO.14	54+22.31	-184.00	POLK STREET	-175.26/-174.86	-175.16	6
MH NO.15	57+97.93	-188.32	POLK STREET	-174.44	-174.54	6
MH NO.16	61+73.57	-185.98	POLK STREET	-173.62	-173.82	6
MH NO.17	65+49.21	-183.89	POLK STREET	-173.20	-173.30	7
MH NO.18	69+24.85	-182.37	POLK STREET	-172.17	-172.37	7
MH NO.19	73+00.49	-180.48	POLK STREET	-169.39	-169.49	7
MH NO.20	76+76.13	-166.67	POLK STREET	-166.58	-166.68	7
MH NO.21	83+51.78	-161.14	POLK STREET	-160.64	-161.14	8
MH NO.22	84+20.88	-158.34	POLK STREET	-158.54	-158.14	8
MH NO.23	88+00.88	-153.85	POLK STREET	-153.55	-153.65	8
MH NO.24	91+84.84	-149.17	POLK STREET	-149.07	-149.17	9
MH NO.25	95+67.02	-144.89	POLK STREET	-144.49	-144.39	9
MH NO.26	99+49.20	-139.78	POLK STREET	-139.68	-139.78	9
MH NO.27	103+31.38	-134.70	POLK STREET	-134.30	-134.80	10
MH NO.28	107+25.61	-132.51	POLK STREET	-132.75/-133.72	-133.62	10
MH NO.29	111+78.58	-131.84	POLK STREET	-128.74	-128.84	10
MH NO.30	114+39.55	-125.40	POLK STREET	-125.30	-125.40	11
MH NO.31	118+02.52	-122.16	POLK STREET	-122.06	-122.16	11
MH NO.32	121+65.50	-120.60	POLK STREET	-116.90/-118.72	-118.60	11
MH NO.33	10+25.00	-108.67	DRIVEWAY	-116.38	-116.68	11

ABBREVIATIONS:

CL	CENTERLINE
CO	CLEANOUT
RCP	REINFORCED CONCRETE PIPE
D	DEPTH
BC	BEGINNING OF CURVE
EC	END OF CURVE
INV	INVERT
L	LENGTH
MH	MANHOLE
PUE	PUBLIC UTILITY EASEMENT
R/W	RIGHT OF WAY
STA	STATION
VCP	VITRIFIED CLAY PIPE
C&G	CURB AND GUTTER

UTILITY CONTACTS

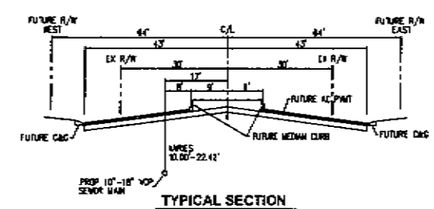
ELECTRIC:
IMPERIAL IRRIGATION DISTRICT
81-600 AVENUE 58
P.O. BOX 1060
LA QUINTA, CA 92253
(760)398-5854

WATER:
CVWD
85-995 AVENUE 52
COACHELLA, CA 92236
(760)398-2651

GAS:
PROPANE

PHONE:
VERIZON
295 N. SUNRISE WAY
PALM SPRINGS, CA 92262
(760)864-1720

SEWER/IRRIGATION:
CVWD
85-995 AVENUE 52
COACHELLA, CA 92236
(760)398-2651



TYPICAL SECTION
POLK STREET
(PUBLIC STREET)

LEGEND:

- INDICATES PROPOSED SEWER MAIN
- INDICATES EXISTING SEWER MAIN
- INDICATES EXISTING UTILITY (SEE PLAN FOR TYPE)
- INDICATES MANHOLE
- INDICATES CLEANOUT
- INDICATES SEWER LATERAL
- C/L — INDICATES CENTERLINE
- INDICATES 1/4 & 1/16 SECTION LINES
- INDICATES RIGHT OF WAY
- INDICATES FUTURE CURB AND GUTTER

NOTE:
NOW (SEPARATE STAMP) THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR THE DETERMINATION OF ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EVIDENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED AS SHOWN IN THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. AS PART OF THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. SUBSTANTIALLY DAMAGED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EVIDENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED AS SHOWN IN THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. AS PART OF THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. SUBSTANTIALLY DAMAGED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR	DATE

ENGINEER

REVIEWED BY: DATE
RECOMMENDED DATE

BENCHMARK:
CAL-IRWIS BENCHMARK RV7-H19 L 1000, ELEVATION = -57.86' NAVD 29 DATUM
ELEVATION VERIFICATION TO:
DESERTALLA VALLEY WATER DIST. BM 18-1-78, ELEV. = -13.36'
RIVERSIDE COUNTY BM E-146, ELEV. = -14.26'
RIVERSIDE COUNTY BM F-198, ELEV. = -14.14'
RIVERSIDE COUNTY BM G-198, ELEV. = -18.06'
RIVERSIDE COUNTY BM P-172, ELEV. = -18.18'
NAVD 29 DATUM

SCALE: 1" = 40'

SEAL - ENGINEER
REGISTERED PROFESSIONAL ENGINEER
LLOYD W. WATSON
No. 26642
EXP. 3-31-12
CIVIL
STATE OF CALIFORNIA

WATSON ENGINEERING
CIVIL ENGINEERING & LAND PLANNING
10-200 MAIDEN STREET
INDIO, CA 92201
PH: (760) 342-7200 FAX: (760) 342-7214

PREPARED BY: LLOYD W. WATSON R.C.E. NO. 26642
DATE:

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
OFF-SITE
SEWER IMPROVEMENT PLANS
FOR
MOUNTAIN VIEW ESTATES MOBILE HOME PARK
POLK STREET
IN THE E 1/2 OF SEC. 9, THE E 1/2 OF SEC. 16, & THE NE 1/4 OF SECTION 21, T.7S., R.9E., S.B.B.M.

SHEET NO: 1 OF 12 SHTS.

TOM: R.O.: FILE NO.:

APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

For our field investigation, nine (9) supplemental bores were excavated on November 28th and December 1, 2011 using a truck mounted hollow stem auger rig (Mobile B61) and hand auger equipment. The bores were excavated along the proposed sewer transmission line alignment. Continuous logs of the materials encountered during drilling were prepared by a representative of Sladden Engineering.

Representative undisturbed samples were obtained within our bores by driving a thin-walled steel penetration sampler (California split spoon sampler) or a Standard Penetration Test (SPT) sampler with a 140 pound hammer dropping approximately 30 inches (ASTM D1586). The number of blows required to drive the samplers 18 inches was recorded in six inch increments and blowcounts are indicated on the bore logs.

The California samplers are 3.0 inches in diameter, carrying brass sample rings having inner diameters of 2.5 inches. The standard penetration samplers are 2.0 inches in diameter with an inner diameter of 1.5 inches. Undisturbed samples were removed from the sampler and placed in moisture sealed containers in order to preserve the natural soil moisture content. Bulk samples were obtained from the excavation spoils and samples were then transported to our laboratory for further observations and tests.

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			TYPICAL NAMES	
COARSE GRAINED SOILS MORE THAN HALF IS LARGER THAN No.200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY-GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN HALF IS SMALLER THAN No.200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & 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, CLEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS: LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

EXPLANATION OF BORE LOG SYMBOLS

California Split-spoon Sample

Unrecovered Sample

Standard Penetration Test Sample

Groundwater depth

Note: The stratification lines on the borelogs represent the approximate boundaries between the soil types; the transition may be gradual.

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	11/28/2011
Elevation:	-164 Feet (MSL)	Boring No:	BH-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
■	8/11/14			55.2	4.2	101.9	2, 4		Sandy Silt (ML); light yellowish brown, moist, very stiff, low to medium plasticity.
■	7/14/19			90.0	11.8	102.4	6, 8		Silt (ML); light olive brown, moist, very stiff, low to medium plasticity.
■	12/14/21			94.2	22.0	106.2	10, 12, 14		Clayey Silt (ML); olive brown, very moist, very stiff, low to medium plasticity.
■	4/7/9			90.2	26.2	97.6	16, 18		Sandy Silt (ML); olive brown, very moist, stiff, low to medium plasticity.
■	4/7/8			90.3	29.0	96.0	20, 22, 24		Clay (CL); olive brown, wet, stiff, low to medium plasticity.
■	3/3/8			55.6	25.0	102.3	26, 28		Sandy Silt (ML); light yellowish brown, very moist to wet, stiff, low plasticity.
■	5/9/12			34.2	18.0	111.5	30, 32		Silty Sand (SM); yellowish brown, moist, medium dense, fine-grained.
							34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~31.5 Feet bgs. No Bedrock Encountered. Groundwater Encountered at 20.5 Feet bgs.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376
Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	11/28/2011
Elevation:	-161 Feet (MSL)	Boring No:	BH-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
■	10/14/14			33.1	2.6	108.3	2, 4		Silty Sand (SM); light yellowish brown to grayish brown, dry to moist, medium dense, fine-grained.
■	8/11/12			57.0	5.3	103.7	6, 8		Sandy Silt (ML); light yellowish brown, dry, stiff, low plasticity with shell fragements.
■	9/17/20			61.1	3.0	112.8	10, 12, 14		Sandy Silt (ML); light olive brown, dry, very stiff, low plasticity.
■	5/9/9			75.3	11.0	102.6	16, 18		Sandy Silt (ML); olive brown, moist, stiff, low plasticity.
■	6/8/11			51.2	18.2	102.8	20, 22		Sandy Silt (ML); olive brown, moist, stiff, low plasticity.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376

Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	11/28/2011
Elevation:	-167 Feet (MSL)	Boring No:	BH-3

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
■	9/14/17			95.6	19.8	101.6	2		Clayey Silt (ML); light yellowish brown, moist, very stiff, low plasticity.
■	7/11/17			98.0	16.2	102.2	6		Silt (ML); light yellowish brown to grayish brown, moist, very stiff, low plasticity.
■	13/20/23			95.8	17.3	109.0	10		Silt (ML); light grayish brown, moist, very stiff, low plasticity.
■	4/5/5			90.4	27.1	96.5	16		Clay (CL-CH); grayish brown, wet, medium stiff, low to high plasticity.
■	2/2/2			64.4	30.7	92.9	20		Sandy Silt (ML); olive brown, wet, soft, low plasticity.

Depth (Feet): 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50

Terminated at ~21.5 Feet bgs.
No Bedrock Encountered.
Groundwater Encountered at 15.0 Feet bgs.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376
Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-167 Feet (MSL)	Boring No:	BH-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
	3/5/8			82.8	29.4	93.6	2, 4, 6, 8		Sandy Silt (ML); brownish gray, dry to wet, medium stiff, low plasticity.
	1/2/2			96.8	39.4	82.0	10, 12, 14		Clay (CL-CH); olive brown, wet, soft, low to high plasticity.
	2/1/1			95.7	40.2		16, 18		Clay (CL); olive brown, wet, soft, low plasticity.
	4/4/6			35.7	28.6		20, 22, 24		Silty Sand (SM); olive brown, wet, loose, fine-grained.
	1/2/2			97.2	39.3		26, 28		Clay (CL-CH); light brown, wet, soft, low ot high plasticity.
	3/3/3			25.4	24.7		30, 32, 34		Silty Sand (SM); grayish brown, wet to moist, loose, fine-grained.
	2/4/6			24.3	30.5		36, 38		Silty Sand (SM); grayish brown, wet, loose, fine-grained.
	4/4/5						40, 42		No Recovery
	9/10/10						44, 46		No Recovery
	4/6/9			64.0	28.5		48, 50		Sandy Silt (ML); olive brown, wet, stiff, low plasticity.

Completion Notes:
Terminated at ~51.5 Feet bgs.
No Bedrock Encountered.
Groundwater Encountered at 8 Feet bgs.

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376
Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-140 Feet (MSL)	Boring No:	BH-5

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2, 4		
■	4/7/10			26.7	4.5	99.9	6, 8		Silty Sand (SM); light olive brown, dry to moist, medium dense, fine-grained.
■	3/4/4			26.5	9.1		10, 12, 14		Sitly Sand (SM); light yellowish brown, moist, loose, fine-grained.
■	4/7/8			61.4	16.1	98.6	16, 18		Sandy Silt (ML); light yellowish brown, moist, stiff, low plasticity.
■	6/7/7			13.5	5.0		20, 22		Silty Sand (SM); grayish brown, dry, medium dense, fine-grained.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376

Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-131 Feet (MSL)	Boring No:	BH-6

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2, 4		
	2/3/3			51.7	13.7		6, 8		Sandy Silt (ML); grayish brown, moist, medium stiff, low plasticity.
	4/4/7			72.1	18.6	96.8	10, 12, 14		Sandy Silt (ML); grayish brown to olive brown, moist, medium stiff, low plasticity.
	7/9/10			12.7	4.4		16, 18		Silty Sand (SM); light olive brown, dry, medium dense, fine-grained.
	6/8/11			53.0	18.7		20, 22		Sandy Silt (ML); light olive brown, moist, very stiff, low plasticity.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376

Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-124 Feet (MSL)	Boring No:	BH-7

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2, 4, 6, 8		
■	13/14/14			11.1	1.9	106.6			Sand (SP); ligth grayish brown, dry, medium dense, fine-grained.
■	3/5/3			44.9	12.6		10, 12, 14		Silty Sand (SM); grayish brown, moist, loose, fine-grained.
■	5/9/13			29.0	9.0	103.1	16, 18		Silty Sand (SM); yellowish brown, moist, medium dense, fine-grained.
■	2/5/5			74.6	20.6		20, 22		Sandy Silt (ML); yellowish brown, moist, stiff, low plasticity.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376

Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-117 Feet (MSL)	Boring No:	BH-8

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
									5.5" AC
							2, 4		
	3/3/4			40.3	9.7		6		Silty Sand (SM); yellowish brown, dry to moist, loose, fine-grained.
							8		
	4/7/8			24.8	6.0	103.9	10		Silty Sand (SM); yellowish broown, moist, loose, fine-grained.
							12, 14		
	4/5/5			12.8	4.2		16		Silty Sand (SM); yellowish brown, dry, loose, fine-grained.
							18		
	6/8/15			43.8	11.5	106.7	20		Silty Sand (SM); olive brown, moist, medium dense, fine-grained.
							22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376
Report No: 11-12-181

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	12/1/2011
Elevation:	-110 Feet (MSL)	Boring No:	BH-9

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Dry Density, pcf	Depth (Feet)	Graphic Lithology	Description
									5.0" AC
							2		
							4		
■	3/3/4			33.8	8.2		6		Silty Sand (SM); olive brown, dry to moist, loose, fine-grained.
							8		
■	4/6/7			13.2	3.7		10		Silty Sand (SM); grayish brown, dry, medium dense, fine-grained.
							12		
							14		
■	5/5/5			24.4	7.4		16		Silty Sand (SM); grayish brown, moist, loose, fine-grained.
							18		
■	3/4/4			33.5	10.4		20		Silty Sand (SM); olive brown, moist, loose, fine-grained.
							22		
							24		Terminated at ~21.5 Feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.
							26		
							28		
							30		
							32		
							34		
							36		
							38		
							40		
							42		
							44		
							46		
							48		
							50		

Completion Notes:

PROPOSED POLK STREET SEWER TRANSMISSION MAIN
AVENUE 69 TO AVENUE 64, VALERIE JEAN AREA

Project No: 544-07376
Report No: 11-12-181

APPENDIX B

LABORATORY TESTING

APPENDIX B

LABORATORY TESTS

Representative bulk and relatively undisturbed soil samples were obtained in the field and returned to our laboratory for additional observations and tests. Laboratory tests were generally performed in two phases. The first phase consisted of tests in order to determine the relative density of the existing natural soil and the general engineering classifications of the soil underlying the site. This test was performed in order to estimate the engineering characteristics of the soil and to serve as a basis for selecting samples for the second phase of testing. The second phase consisted of soil mechanics testing. This testing included consolidation, shear strength and expansion tests was performed in order to provide a means of developing specific design recommendations based on the mechanical properties of the soil.

CLASSIFICATION AND COMPACTION TESTS

Unit Weight and Moisture Content Determinations: Each undisturbed sample was weighed and measured in order to determine its unit weight. A small portion of each sample was then subjected to tests in order to determine its moisture content. This was used in order to determine the dry density of the soil in its natural condition. The results of these tests are shown on the Bore Logs.

Maximum Density-Optimum Moisture Determinations: Representative soil types were selected for maximum density determinations. This test was performed in accordance with the ASTM Standard D1557-91, Test Method A. The results of this test are presented graphically in this appendix. The maximum densities are compared to the field densities of the soil in order to determine the existing relative compaction to the soil. This is shown on the Bore Logs, and is useful in estimating the strength and compressibility of the soil.

Classification Tests: Soil samples were selected for classification determination. This testing consisted of mechanical grain size analyses. These provide information for developing classifications for the soil in accordance with the Unified Classification System. This classification system categorizes the soil into groups having similar engineering characteristics. The results of this test are very useful for detecting variations in the soil and for selecting samples for further tests.

SOIL MECHANIC'S TESTING

Expansion Testing: One (1) bulk sample was selected for Expansion testing. Expansion testing was performed in accordance with the UBC Standard 18-2. This testing consists of remolding 4-inch diameter by 1-inch thick test specimens to a moisture content and dry density corresponding to approximately 50 percent saturation. The samples are subjected to a surcharge of 144 pounds per square foot and allowed to reach equilibrium. At that point the specimens are inundated with distilled water. The linear expansion is then measured until complete.

Direct Shear Testing: One (1) bulk sample was selected for Direct Shear testing. This test measures the shear strength of the soil under various normal pressures and is used to develop parameters for foundation design and lateral design. Tests were performed using a strain controlled test apparatus with normal pressures ranging from 800 to 2300 pounds per square foot.

Consolidation Test: Two (2) relatively undisturbed samples were selected for consolidation testing. For this test, a one-inch thick test specimen was subjected to vertical loads varying from 575 psf to 11520 psf applied progressively. The consolidation at each load increment was recorded prior to placement of each subsequent load. The specimens were saturated at 575 psf or 720 psf load increment.

Sladden Engineering
450 Egan Avenue, Beaumont CA 92223 (951) 845-7743 Fax (951) 845-8863

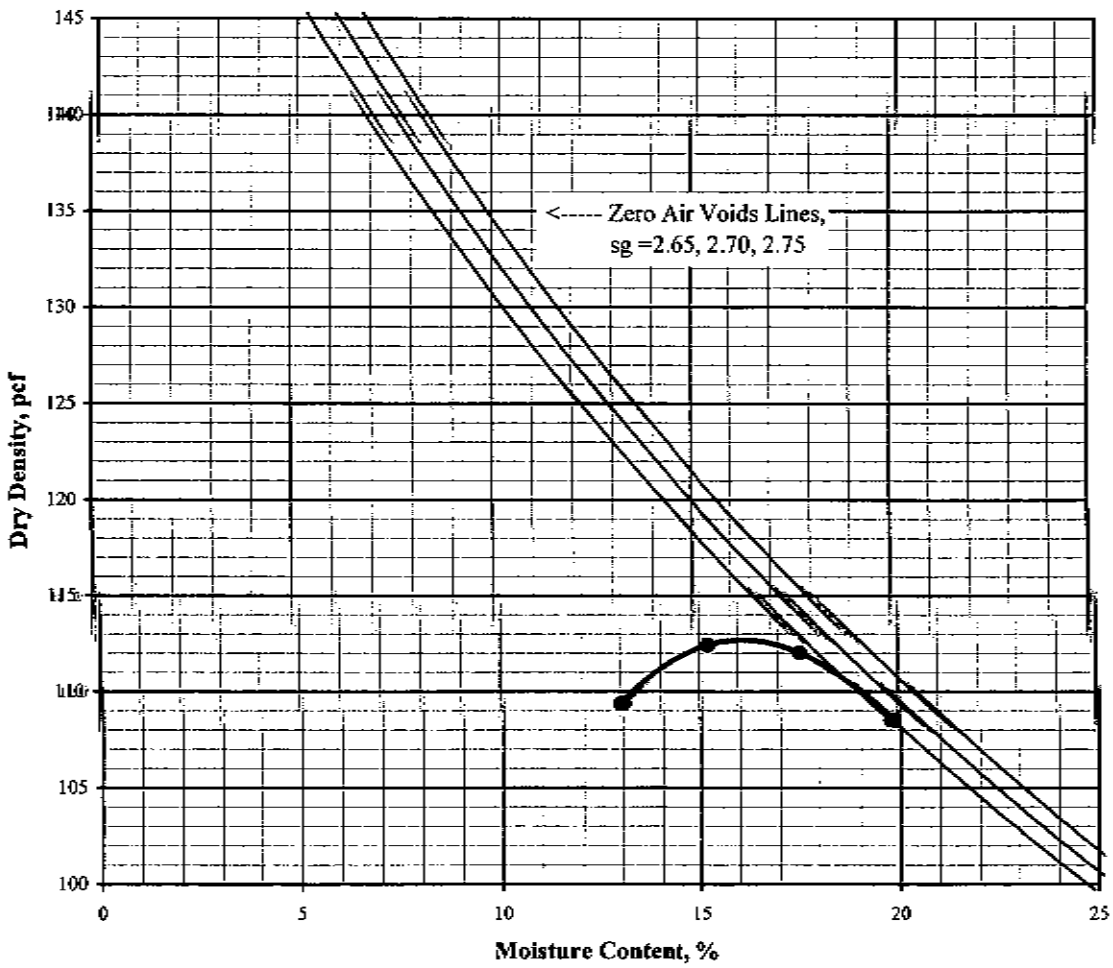
Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:	544-07376	December 26, 2011
Project Name:	Mountain View Estates	
Lab ID Number:	LN6-11494	ASTM D-1557 A
Sample Location:	**B-3 Bulk @ 0-5'**	**Rammer Type: Machine**
Description:	Olive Brown Silt (ML)	

Maximum Density: **112.5 pcf**
Optimum Moisture: **16.5%**

Sieve Size	% Retained
3/4"	
3/8"	
#4	



Sladden Engineering

450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Expansion Index

ASTM D 4829

December 26, 2011

Job Number: 544-07376

Job Name: Mountain View Estates

Lab ID Number: LN6-11494

Sample ID: B-3 Bulk @ 0-5'

Soil Description: Olive Brown Silt (ML)

Wt of Soil + Ring:	537.5
Weight of Ring:	188.8
Wt of Wet Soil:	348.7
Percent Moisture:	14.0%
Sample Height, in	0.95
Wet Density, pcf:	111.2
Dry Denstiy, pcf:	97.6

% Saturation:	52.0

Expansion **Rack # 1**

Date/Time	12/22/2011	11:05 AM
Initial Reading	0.0000	
Final Reading	0.1062	

Expansion Index **106**

(Final - Initial) x 1000

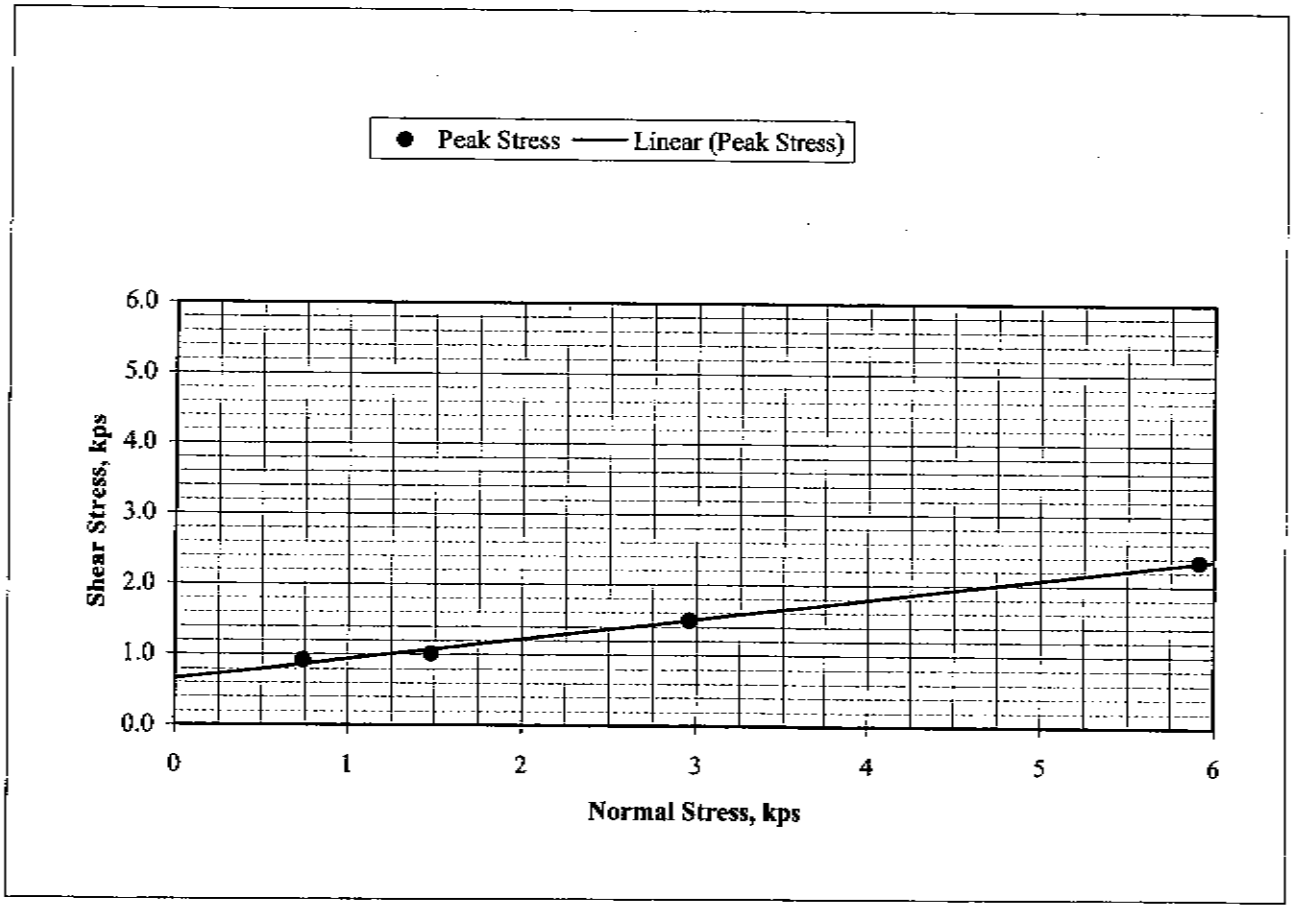
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Direct Shear ASTM D 3080-04
(modified for unconsolidated condition)

Job Number: 544-07376
Job Name Mountain View Estates
Lab ID No. LN6-11494
Sample ID B-3 Bulk @ 0-5'
Classification Olive Brown Silt (ML)
Sample Type Remolded @ 90% of Maximum Density

December 26, 2011
Initial Dry Density: 101.0 pcf
Initial Mosture Content: 16.9 %
Peak Friction Angle (Ø): 16°
Cohesion (c): 650 psf

Test Results	1	2	3	4	Average
Moisture Content, %	26.9	26.9	26.9	26.9	26.9
Saturation, %	108.9	108.9	108.9	108.9	108.9
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.921	1.009	1.491	2.347	



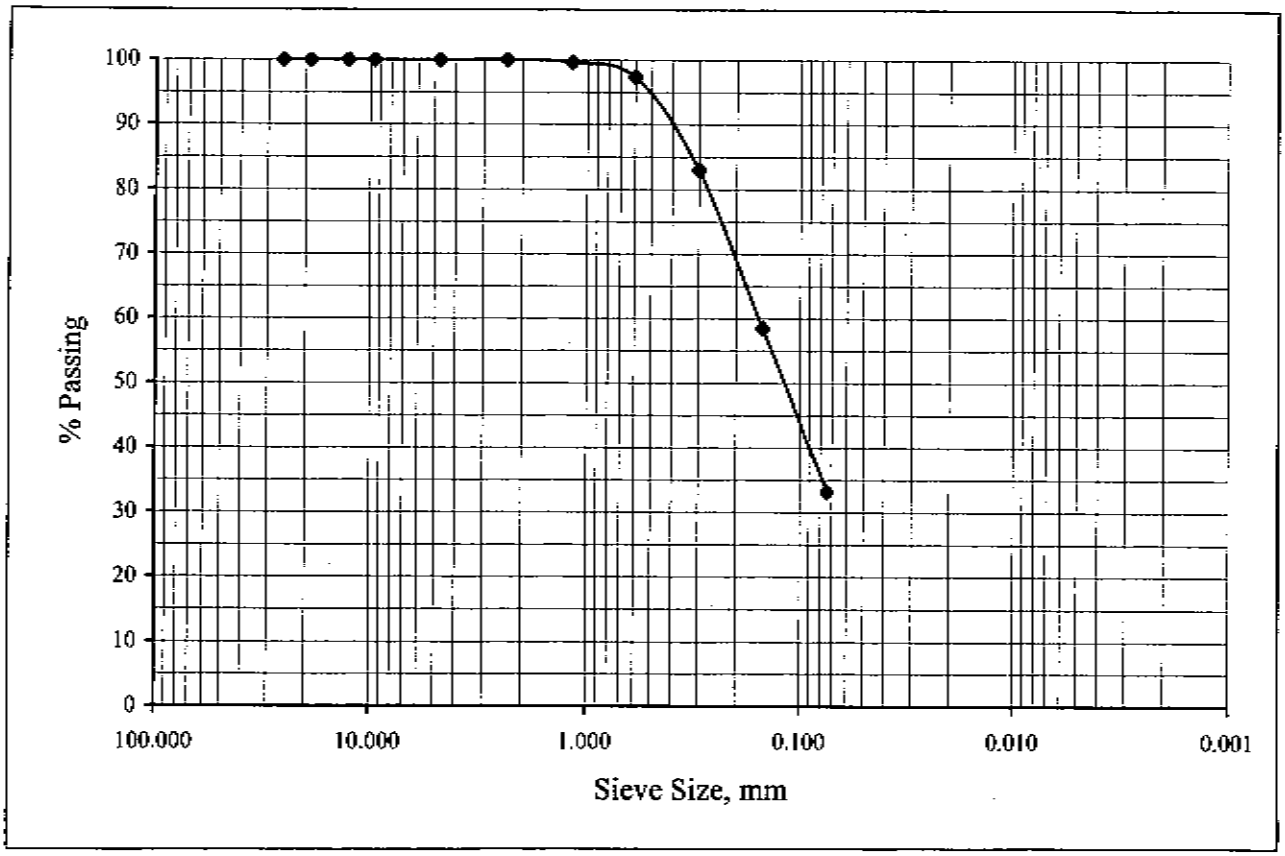
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 December 26, 2011
Project Name: Mountain View Estates
Lab ID Number: LN6-11494
Sample ID: B-2 #1 @ 2' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	99.6
#30	0.60	97.3
#50	0.30	83.0
#100	0.15	58.4
#200	0.074	33.1



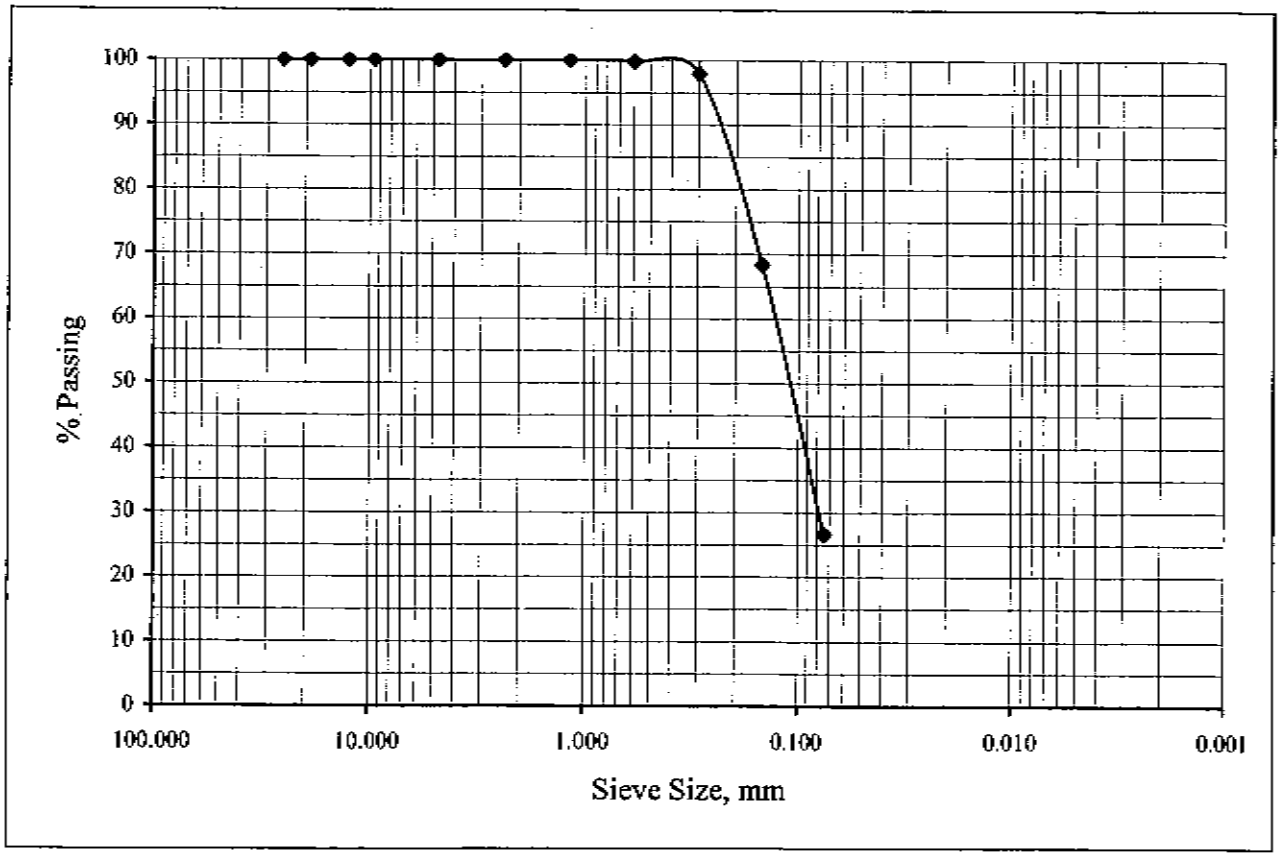
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 December 26, 2011
Project Name: Mountain View Estates
Lab ID Number: LN6-11494
Sample ID: B-5 #1 @ 5' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	100.0
#30	0.60	99.8
#50	0.30	97.9
#100	0.15	68.3
#200	0.074	26.7



Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

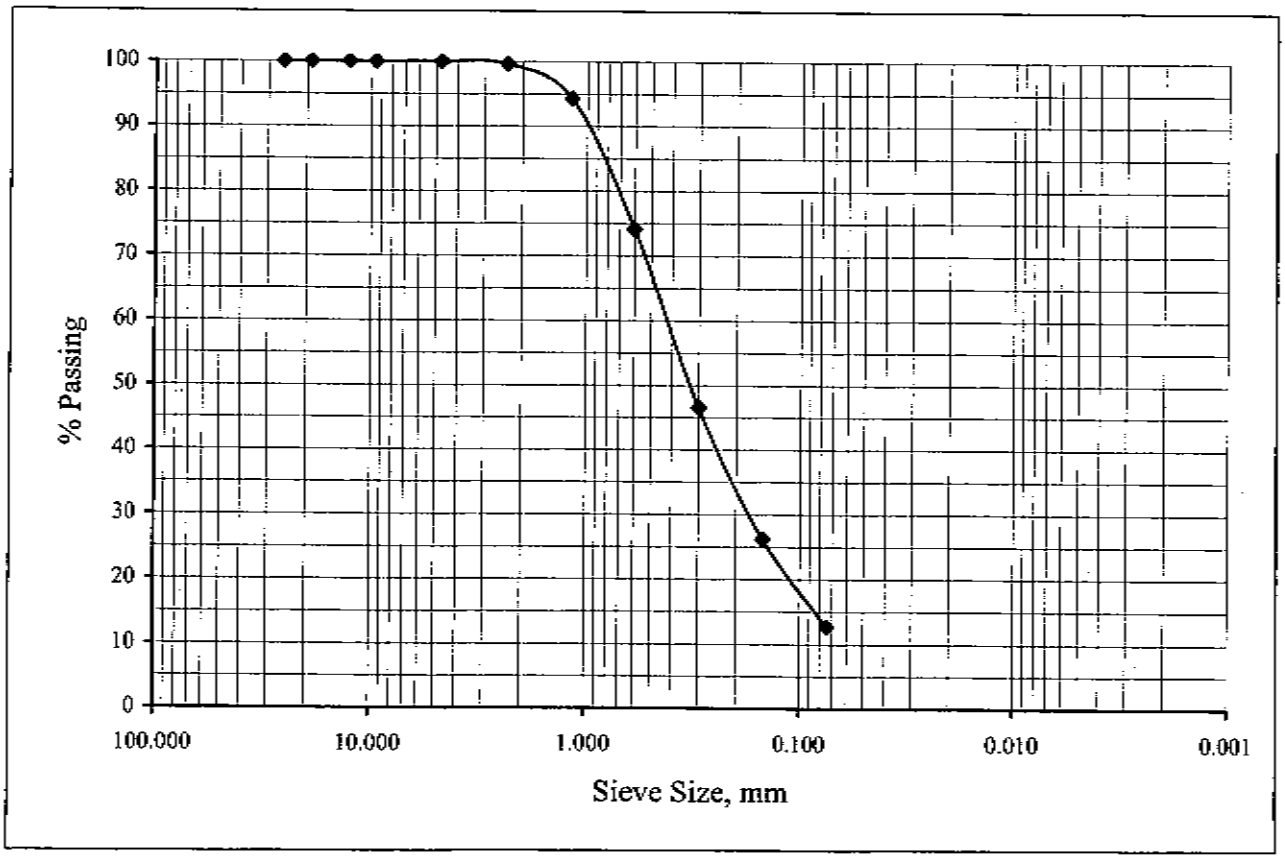
ASTM C117 & C136

Project Number: 544-07376
Project Name: Mountain View Estates
Lab ID Number: LN6-11494
Sample ID: B-6 #3 @ 15'

December 26, 2011

Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	99.6
#16	1.18	94.3
#30	0.60	74.1
#50	0.30	46.5
#100	0.15	26.2
#200	0.074	12.7



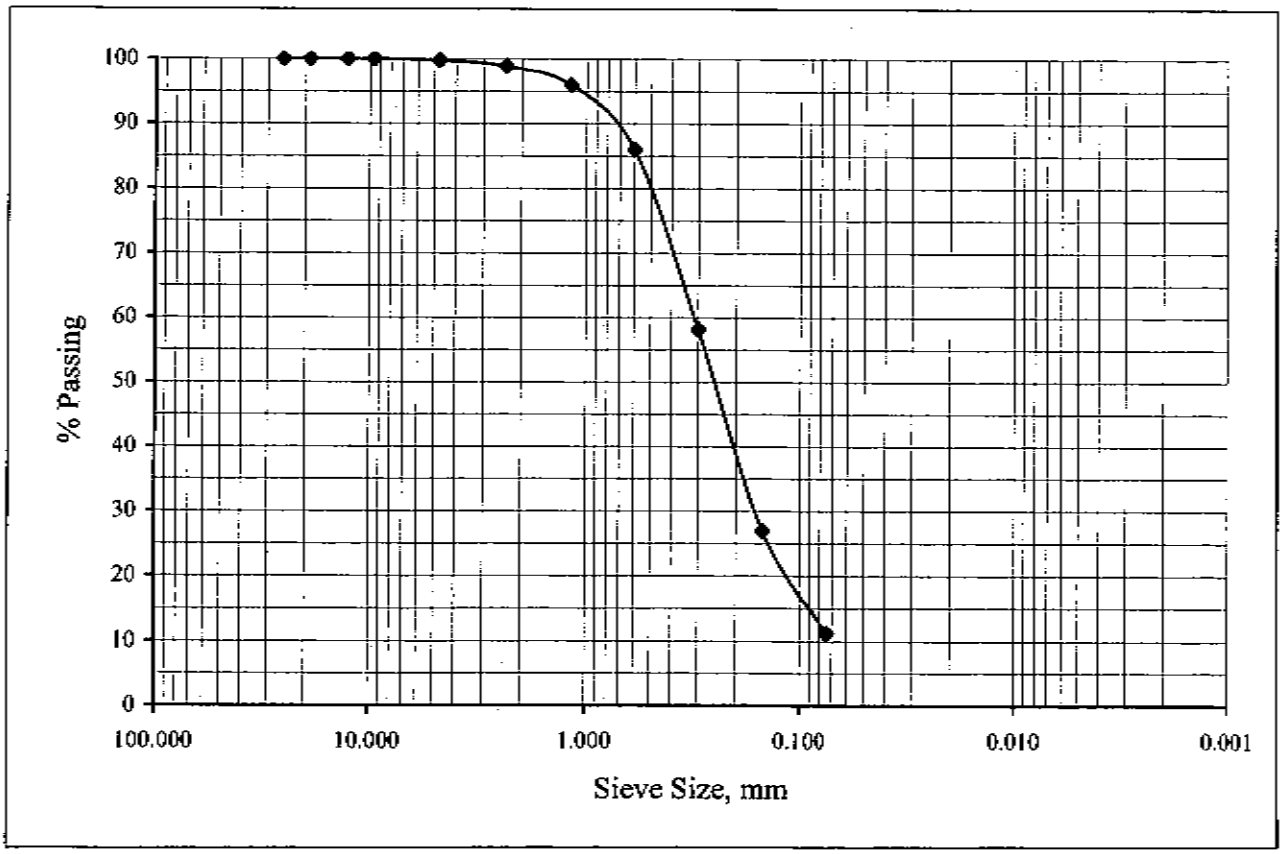
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 December 26, 2011
Project Name: Mountain View Estates
Lab ID Number: LN6-11494
Sample ID: B-7 #1 @ 5' Soil Classification: SP-SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	99.8
#8	2.36	98.8
#16	1.18	96.0
#30	0.60	86.0
#50	0.30	58.2
#100	0.15	27.0
#200	0.074	11.1



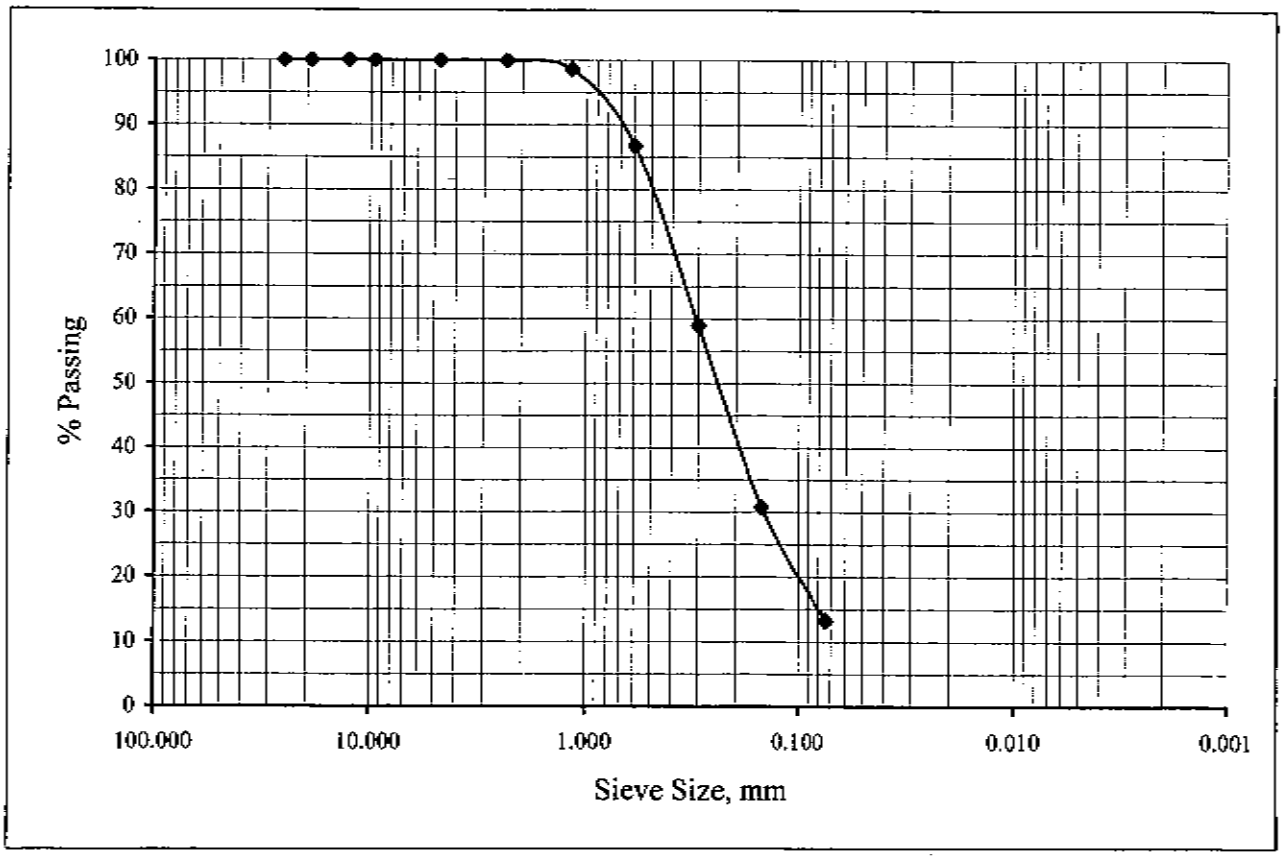
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 December 26, 2011
Project Name: Mountain View Estates
Lab ID Number: LN6-11494
Sample ID: B-9 #2 @ 10' Soil Classification: SM

Sieve Size, in	Sieve Size, mm	Percent Passing
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	99.9
#16	1.18	98.6
#30	0.60	86.7
#50	0.30	59.0
#100	0.15	30.7
#200	0.074	13.2



Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

One Dimensional Consolidation

ASTM D2435 & D5333

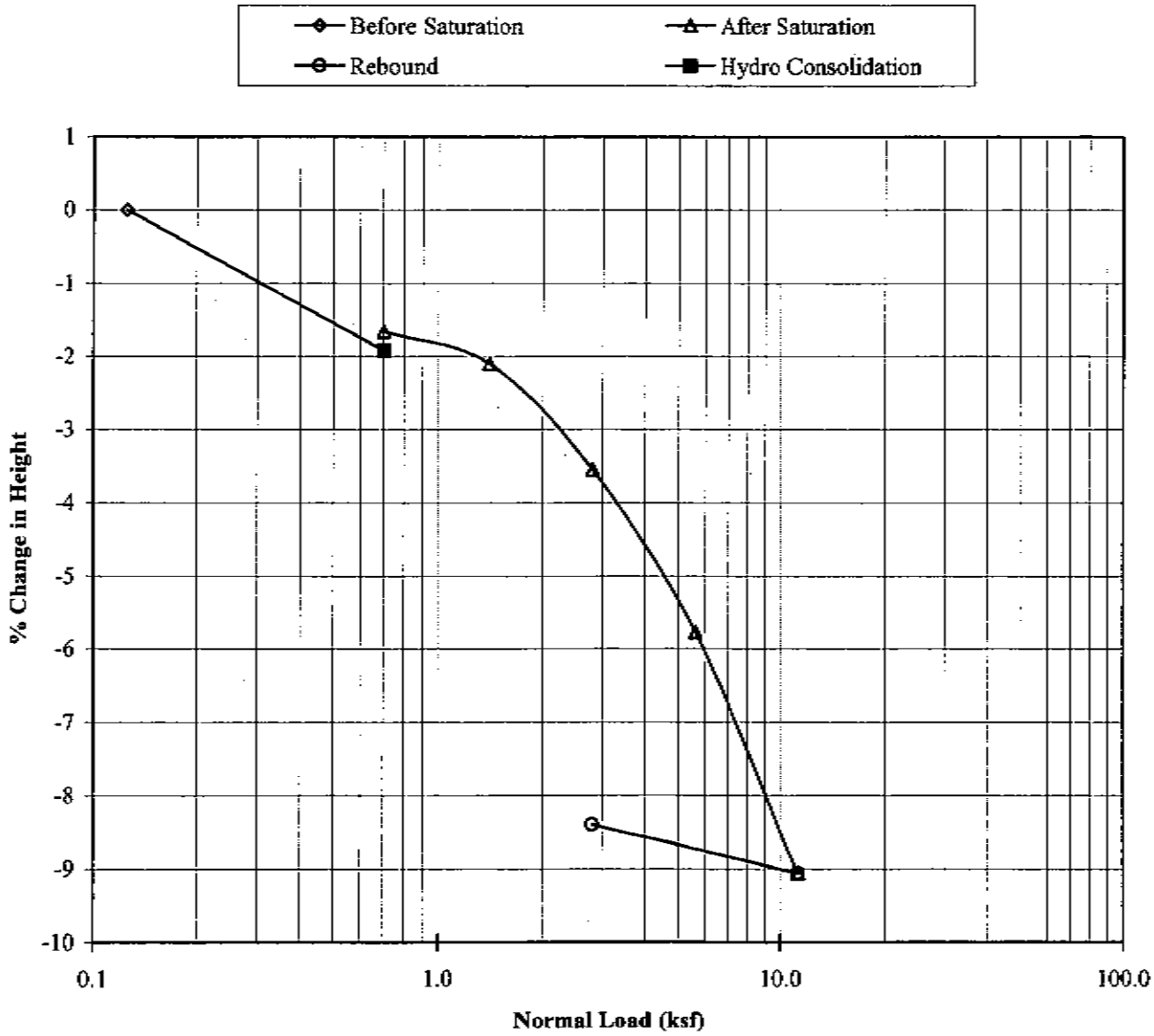
Job Number: 544-07376
Job Name: Mountain View Estates

December 26, 2011

Lab ID Number: LN6-11494
Sample ID: B-3 #4 @ 15'
Soil Description: Gray Brown Clay (CL)

Initial Dry Density, pcf:	96.3
Initial Moisture, %:	27.1
Initial Void Ratio:	0.731
Specific Gravity:	2.67

% Change in Height vs Normal Presssure Diagram



Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

One Dimensional Consolidation

ASTM D2435 & D5333

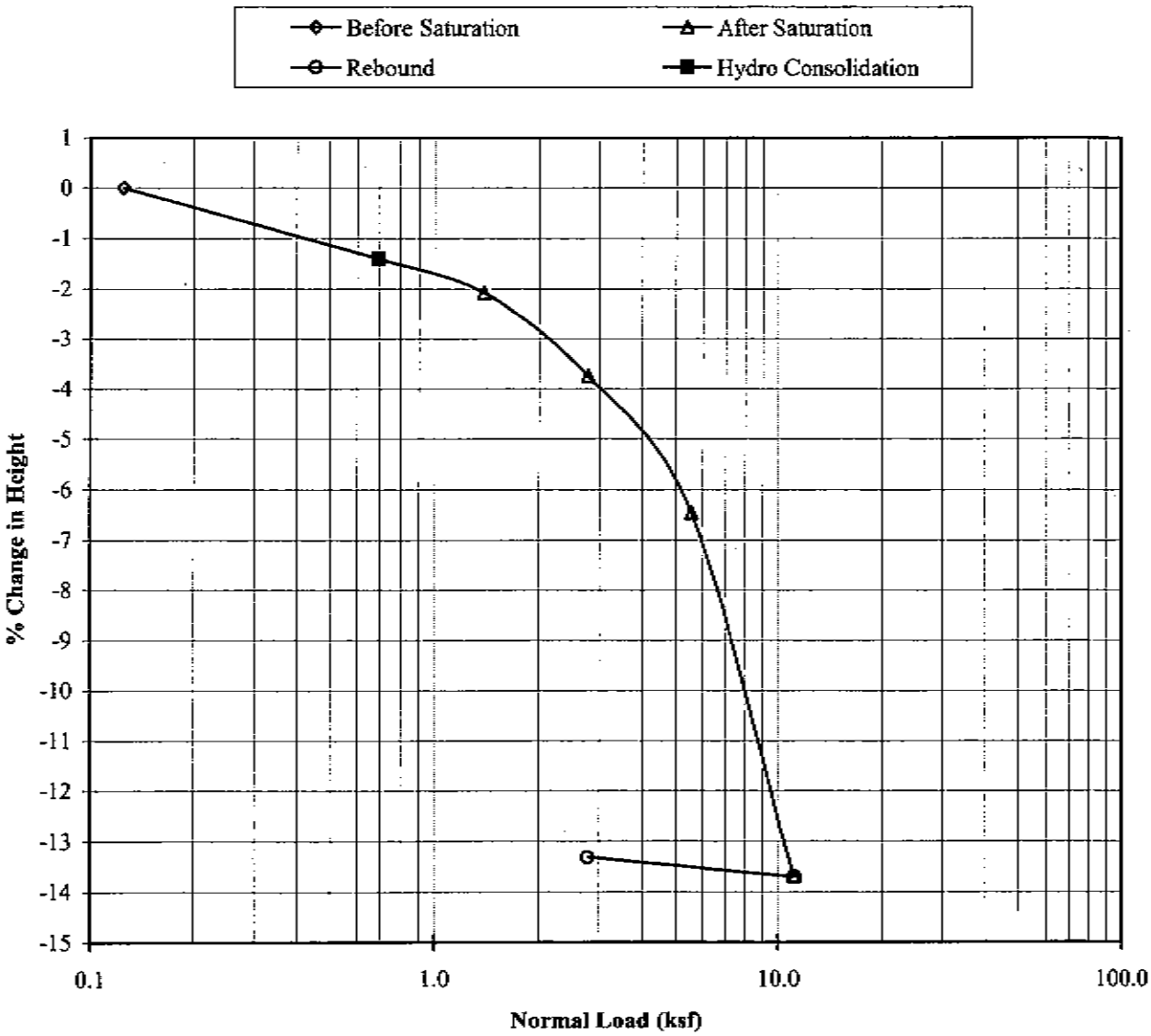
Job Number: 544-07376
Job Name: Mountain View Estates

December 26, 2011

Lab ID Number: LN6-11494
Sample ID: B-4 #2 @ 10'
Soil Description: Olive Brown Clay (CL)

Initial Dry Density, pcf:	79.9
Initial Moisture, %:	39.4
Initial Void Ratio:	1.085
Specific Gravity:	2.67

% Change in Height vs Normal Presssure Diagram



Sladden Engineering

6782 Stanton Ave., Suite A, Buena Park, CA 90621 (714) 523-0952 Fax (714) 523-1369
45090 Golf Center Pkwy, Suite F, Indio, CA 92201 (760) 863-0713 Fax (760) 863-0847
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Date: December 26, 2011

Account No.: 544-07376

Customer: T.C. Morris

Location: Mountain View Estates, Polk Street from Ave 69 to Ave 64, County of Riverside

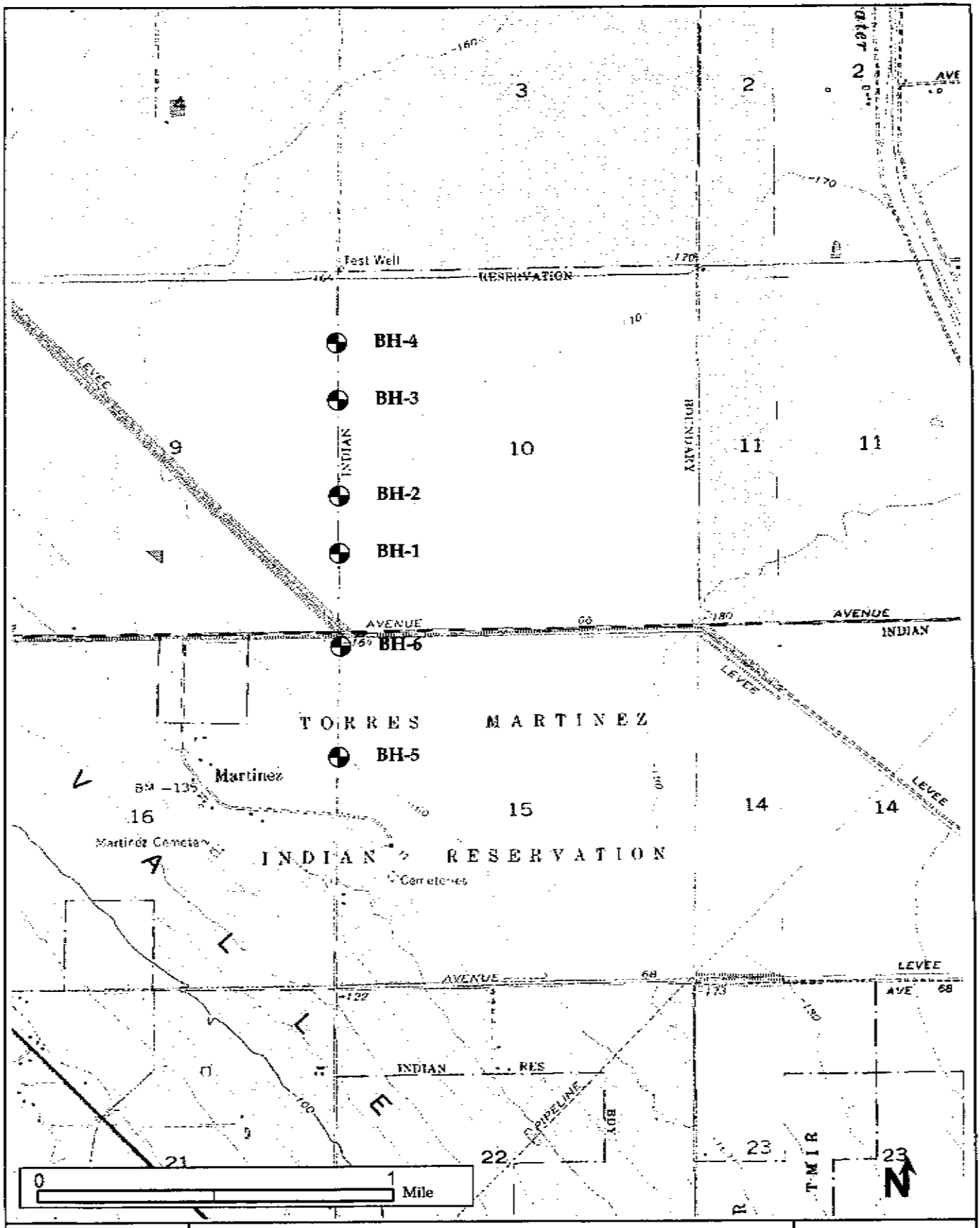
Analytical Report

Corrosion Series

	pH per CA 643	Soluble Sulfates per CA 417 ppm	Soluble Chloride per CA 422 ppm	Min. Resistivity per CA 643 ohm-cm
B-3 @ 0-5'	10.7	1800	1200	200

APPENDIX C

BOREHOLE LOCATION MAP (2009)
BORELOGS (2009)
LABORATORY TEST RESULTS (2009)



Sladden Engineering	BOREHOLE LOCATION MAP	FIGURE 1
	Project Number: 544-07376	
	Report Number: 09-10-246	
	Date: October 13, 2009	

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
Elevation:	~170 (BMSL)	Boring No:	BH-1

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
		1					2, 4		Clayey Silt (ML); light yellowish brown (10YR 6/4), moist, low to medium plasticity.
■	3/4/4			91.3	20.2		6, 8, 10		Clayey Silt (ML); light yellowish brown (10YR 6/4), moist, medium stiff, low to medium plasticity, thinnly laminated.
■	4/5/6			95.6	29.7		12, 14		Silty Clay (CL); light olive brown (2.5Y 5/3), moist, stiff, medium plasticity, thinnly laminated.
■	1/2/2			94.9	37.2		16, 18, 20		Clay (CH); light olive brown (2.5Y 5/3), moist, soft, high plasticity.
■	1/2/4			46.1	34.1		22, 24		Silty Sand (SM); olive brown (2.5Y 4/4), wet, loose, fine-grained.
■	1/2/2			32.4	28.5		26, 28		Silty Sand (SM); olive brown (2.5Y 4/4), wet, loose, fine-grained.
							30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~26.5 feet bgs. No Bedrock Encountered. Groundwater Encountered at ~16.5 feet.

Approximate Location:
33.57236 N
116.14721 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
Elevation:	~170 (BMSL)	Boring No:	BH-2

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
		2					2, 4		Clayey Silt (ML); light yellowish brown (2.5Y 6/4), moist, low plasticity.
■	4/3/4			96.0	22.0		6, 8, 10		Clayey Silt (ML), light olive brown (2.5Y 5/4), medium stiff, low plasticity.
■	3/5/5			94.8	31.5		12, 14		Silty Clay (CL); light olive brown (2.5Y 5/3), moist, stiff, medium plasticity.
■	2/2/2			93.7	34.2		16, 18, 20		Silty Clay (CL); light olive brown (2.5Y 5/3), moist, soft, medium plasticity.
■	1/2/3			75.5	35.4		22		Sandy Silt (ML); dark olive brown (2.5Y 3/3), wet, medium stiff, low plasticity with Silty Sand (SM) laminations.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 feet bgs. No Bedrock Encountered. Groundwater Encountered at ~14.5 feet.

Approximate Location:
33.57481N
116.14720 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
Elevation:	~170 (BMSL)	Boring No:	BH-3

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
		3					2, 4		Clayey Silt (ML); light yellowish brown (2.5Y 6/4), moist, low plasticity.
■	3/5/6			92.7	29.2		6, 8, 10		Clayey Silt (ML); olive brown (2.5Y 4/4), stiff, low plasticity, thinnly laminated.
■	1/2/3			96.0	33.0		12, 14		Silty Clay (CL); light olive brown (2.5Y 5/4), moist, medium stiff, medium plasticity.
■	3/3/3			83.7	33.1		16, 18		Sandy Clay (CL); dark olive brown (2.5Y 3/3), wet, medium stiff, medium plasticity with Clayey Sand laminations.
■	2/2/2			95.7	31.6		20, 22		Silty Clay (CL-CH); light olive brown (2.5Y 5/4), moist, soft, medium to high plasticity.
							24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~21.5 feet bgs. No Bedrock Encountered. Groundwater Encountered at ~14.5 feet.

Approximate Location:
33.57829 N
116.14725 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

SLADDEN ENGINEERING

BORE LOG

Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
Elevation:	~165 (BMSL)	Boring No:	BH-4

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
							2, 4		Clayey Silt (ML); light yellowish brown (2.5Y 6/4), moist, low plasticity.
■	3/4/5			76.2	14.7		6, 8		Sandy Silt (SM); olive brown (2.5Y 4/4), moist, stiff, low plasticity with Silty Sand (SM) laminations.
■	1/1/2			97.1	37.8		10, 12, 14		Silty Clay (CL); light olive brown (2.5 Y 5/4), moist, soft, medium to high plasticty.
■	1/1/1			98.3	41.8		16, 18		Silty Clay (CL); light olive brown (2.5 Y 5/4), moist, soft, medium to high plasticty.
■	2/2/2			92.5	35.4		20, 22, 24		Silty Clay (CL); light olive brown (2.5 Y 5/4), moist, soft, medium to high plasticty with 1-inch Sand (SP) lamination.
■	5/7/15			5.1	23.7		26		Sand (SP); light olive brown (2.5 Y 5/3), wet, medium dense, fine-grained.
							28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~26.5 feet bgs. No Bedrock Encountered. Groundwater Encountered at ~11.0 feet.

Approximate Location:
33.58053 N
116.14719 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

SLADDEN ENGINEERING	BORE LOG			
	Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
	Elevation:	~160 (BMSL)	Boring No:	BH-5

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
	Probe						2, 4, 6, 8, 10, 12, 14		Sandy Silt (ML); light yellowish brown (2.5Y 6/4), dry to moist, low plasticity.
							16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~15.0 feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Approximate Location:
33.56393 N
116.14680 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

SLADDEN ENGINEERING	BORE LOG			
	Drill Rig:	Mobil B-61	Date Drilled:	10/6/2009
	Elevation:	~165 (BMSL)	Boring No:	BH-6

Sample	Blow Counts	Bulk Sample	Expansion Index	% Minus #200	% Moisture	Density, pcf	Depth (Feet)	Graphic Lithology	Description
	Probe						2, 4, 6, 8, 10, 12, 14		Sandy Silt (ML); light yellowish brown (2.5Y 6/4), dry to moist, low plasticity.
							16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50		Terminated at ~15.0 feet bgs. No Bedrock Encountered. No Groundwater or Seepage Encountered.

Approximate Location:
33.56892 N
116.14636 W

MOUNTAIN VIEW ESTATES MOBILE HOME PARK
PROPOSED OFF-SITE SEWER

Project No: 544-07376
Report No: 09-10-246

Sladden Engineering
450 Egan Avenue, Beaumont CA 92223 (951) 845-7743 Fax (951) 845-8863

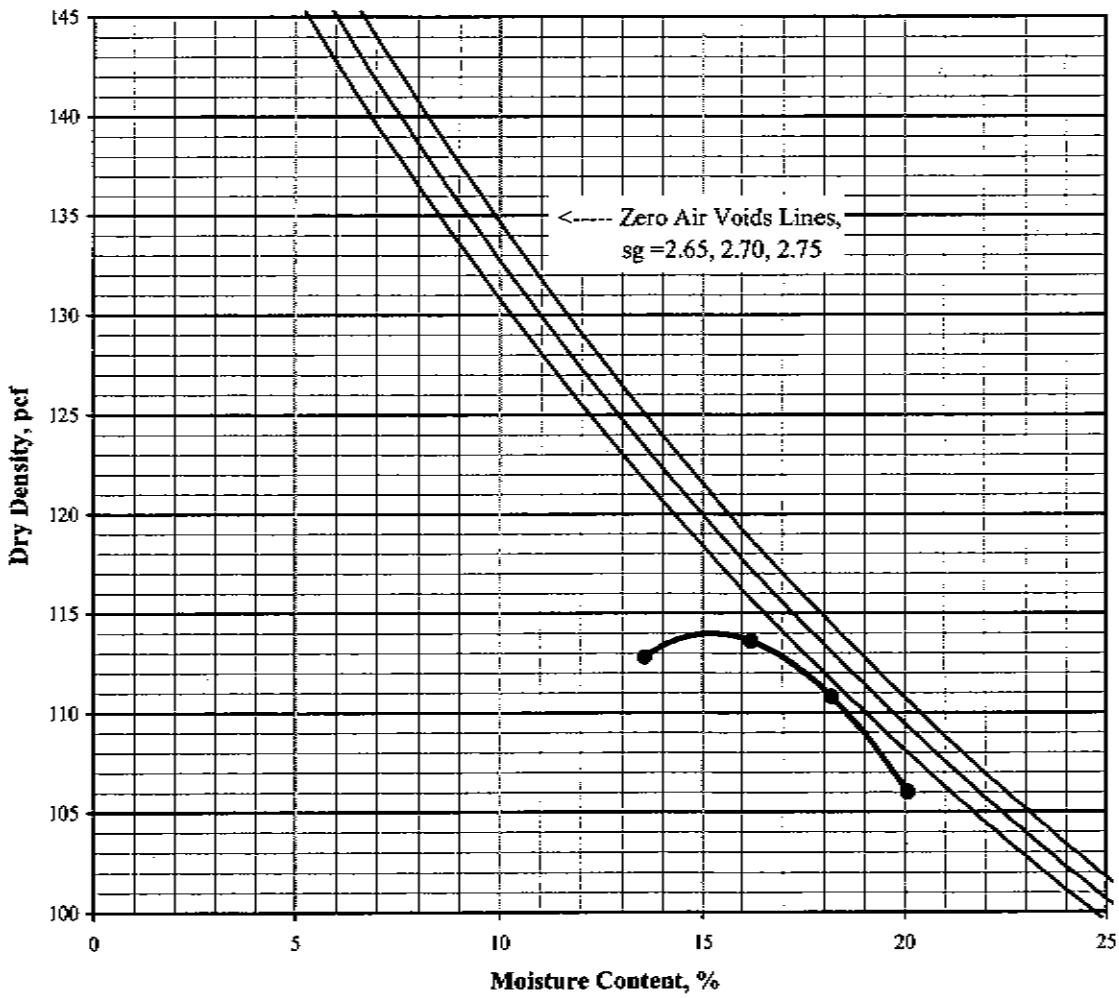
Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:	544-07376	October 21, 2009
Project Name:	Polk Street	
Lab ID Number:	LN6-09445	ASTM D-1557 A
Sample Location:	BH-1 Bulk 1 @ 0-5'	Rammer Type: Machine
Description:	Olive Brown Silty Clay (CL)	

Maximum Density: **114 pcf**
Optimum Moisture: **15.5%**

Sieve Size	% Retained
3/4"	
3/8"	
#4	0.6



Sladden Engineering
450 Egan Avenue, Beaumont CA 92223 (951) 845-7743 Fax (951) 845-8863

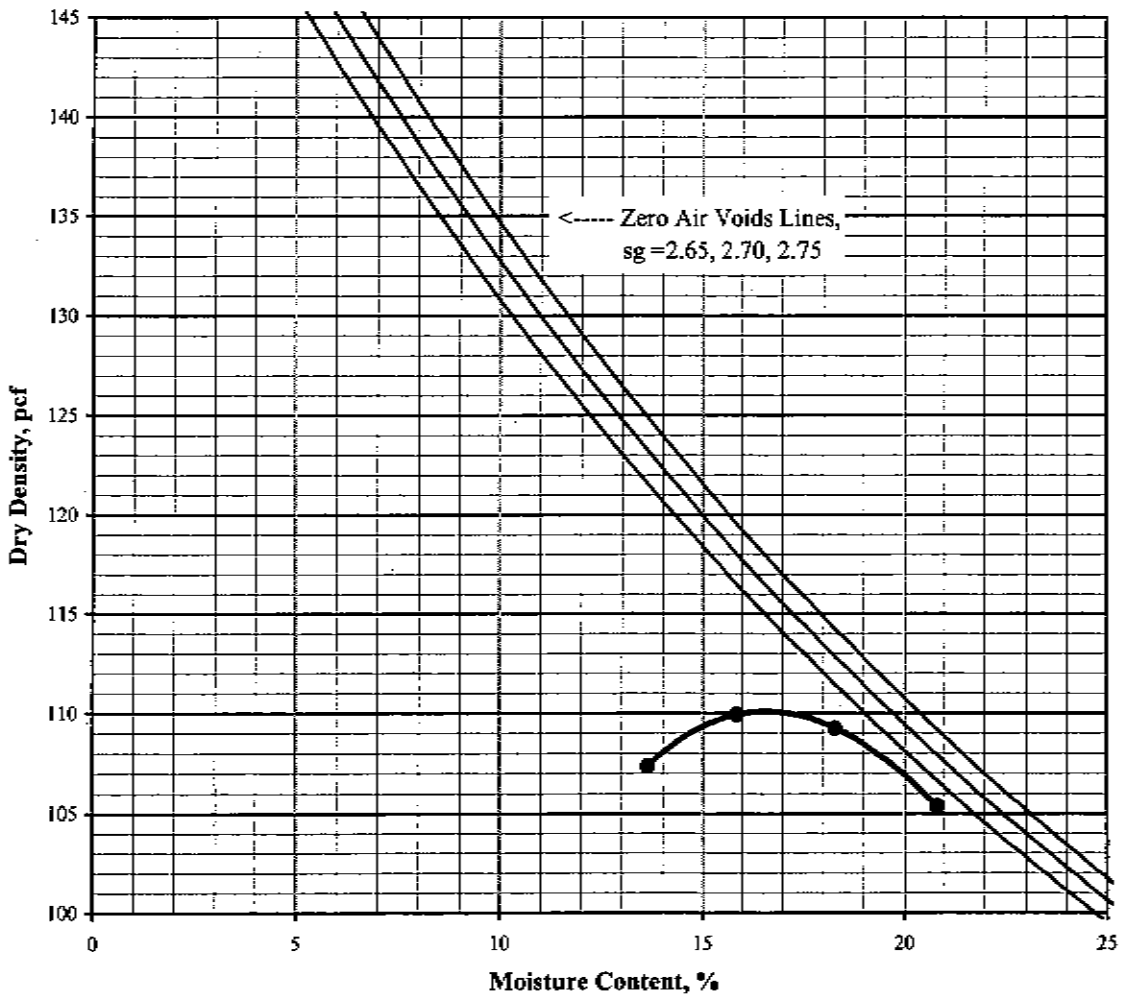
Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:	544-07376	October 21, 2009
Project Name:	Polk Street	
Lab ID Number:	LN6-09445	ASTM D-1557 A
Sample Location:	BH-2 Bulk 2 @ 0-5'	Rammer Type: Machine
Description:	Olive Brown Silty Clay (CL)	

Maximum Density: **110 pcf**
Optimum Moisture: **17%**

Sieve Size	% Retained
3/4"	
3/8"	
#4	



Sladden Engineering
450 Egan Avenue, Beaumont CA 92223 (951) 845-7743 Fax (951) 845-8863

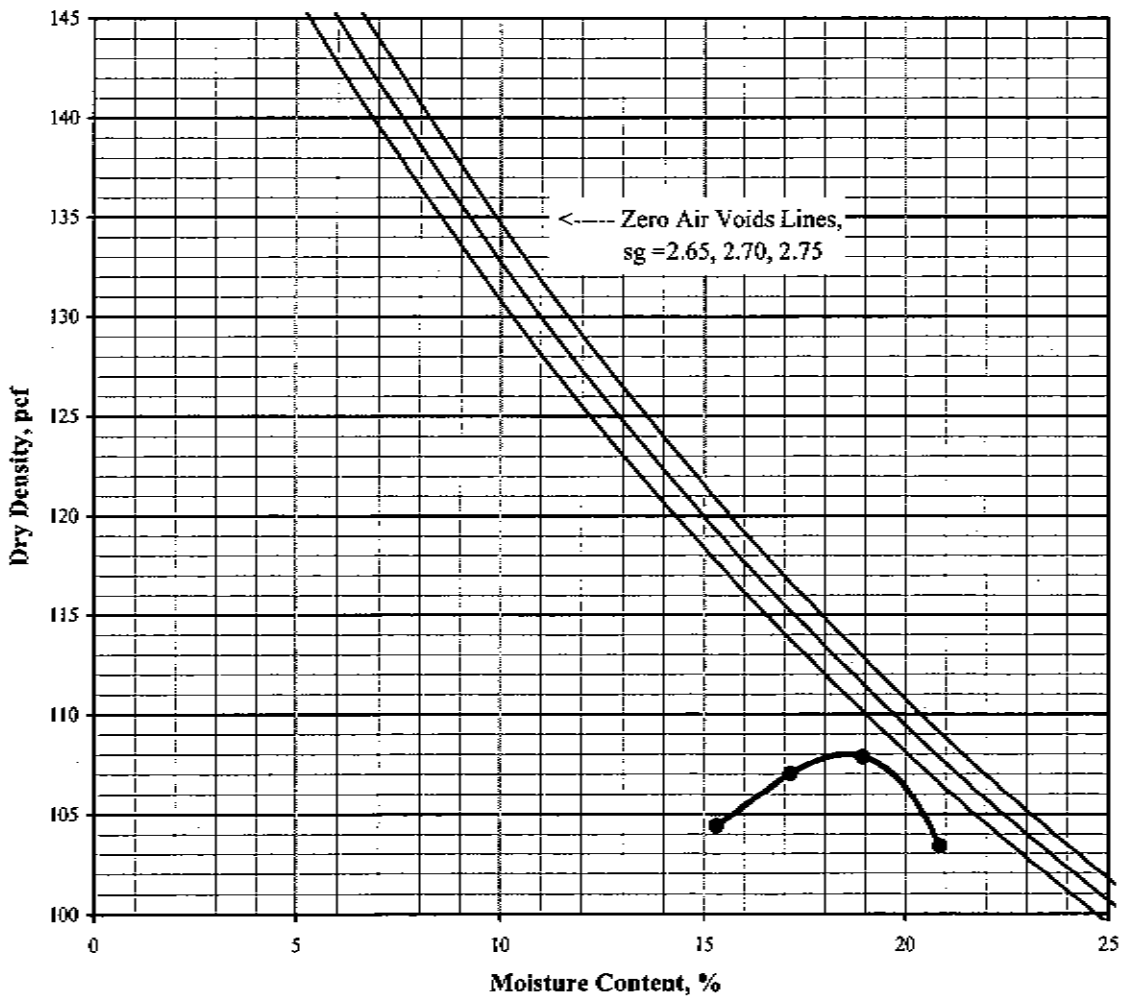
Maximum Density/Optimum Moisture

ASTM D698/D1557

Project Number:	544-07376	October 21, 2009
Project Name:	Polk Street	
Lab ID Number:	LN6-09445	ASTM D-1557 A
Sample Location:	BH-3 Bulk 3 @ 0-5'	Rammer Type: Machine
Description:	Gray Brown Silty Clay (CL)	

Maximum Density: **108 pcf**
Optimum Moisture: **18.5%**

Sieve Size	% Retained
3/4"	
3/8"	
#4	



Sladden Engineering

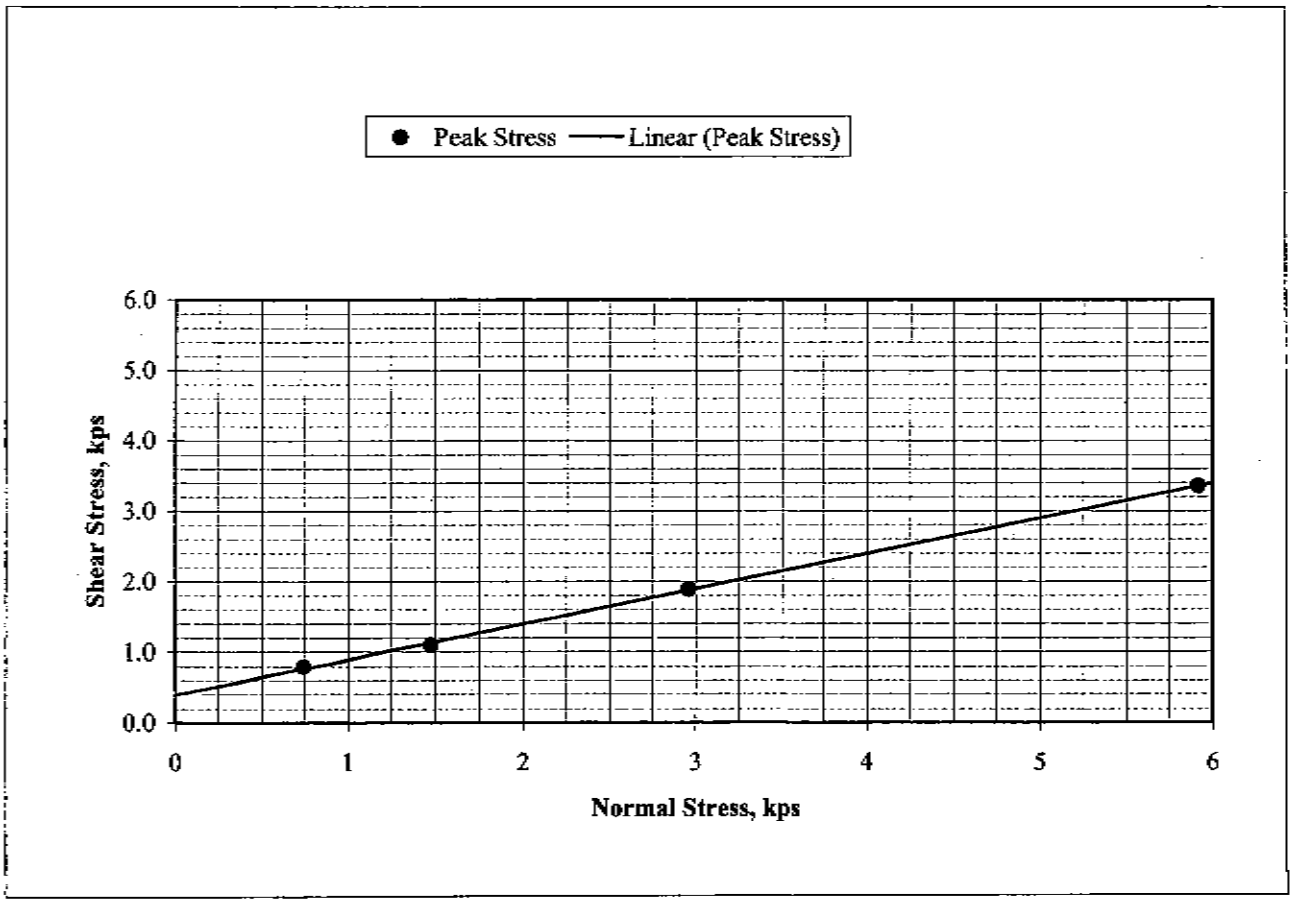
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Direct Shear ASTM D 3080-04

(modified for unconsolidated, undrained conditions)

Job Number:	544-07376		October 21, 2009
Job Name	Polk Street		Initial Dry Density: 102.6 pcf
Lab ID No.	LN6-09445		Initial Mosture Content: 15.7 %
Sample ID	BH-1 Bulk 1 @ 0-5'		Peak Friction Angle (Ø): 27°
Classification	Olive Brown Silty Clay (CL)		Cohesion (c): 390 psf
Sample Type	Remolded @ 90% of Maximum Density		

Test Results	1	2	3	4	Average
Moisture Content, %	24.1	24.1	24.1	24.1	24.1
Saturation, %	101.4	101.4	101.4	101.4	101.4
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.789	1.097	1.886	3.355	



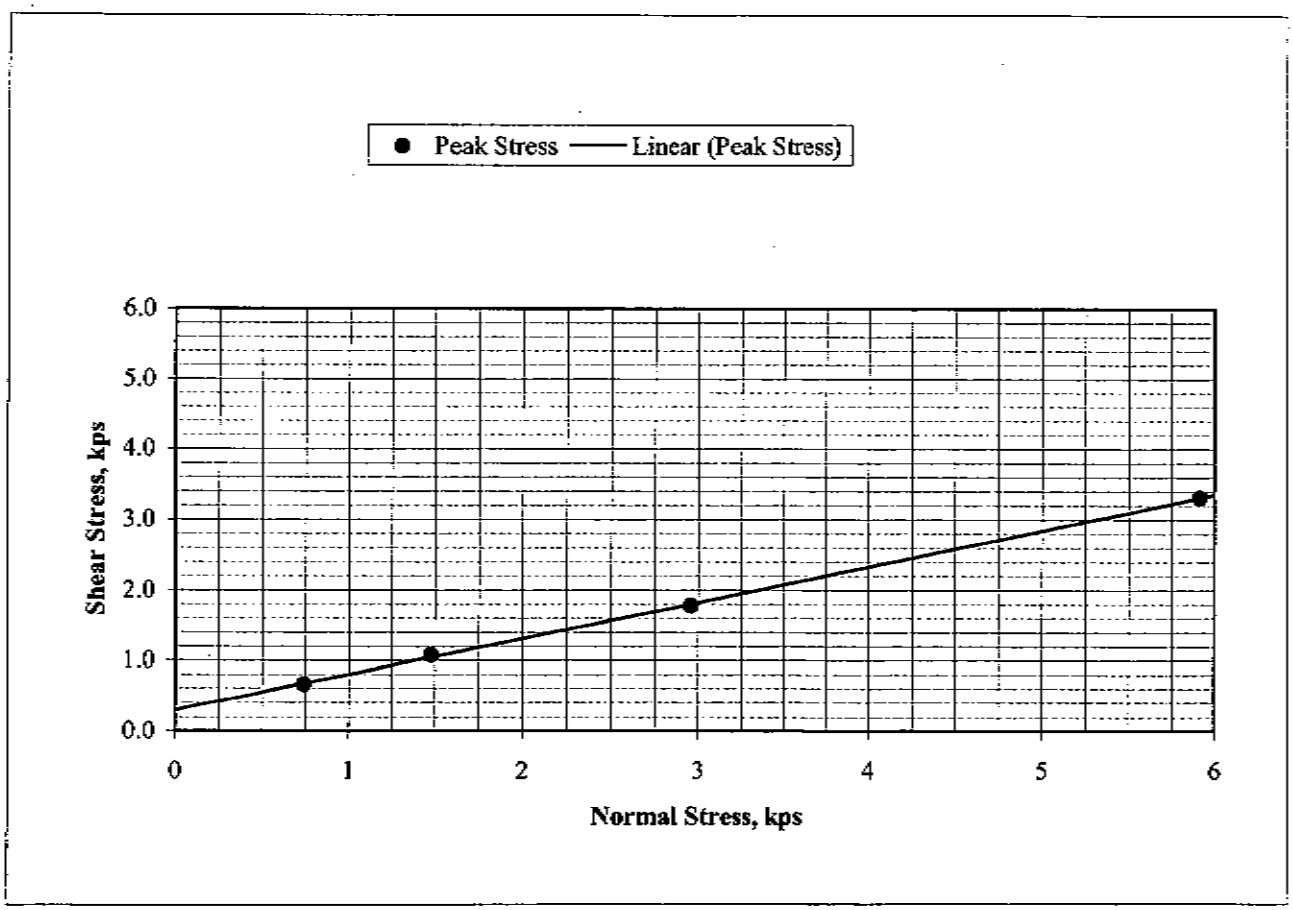
Sladden Engineering

450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Direct Shear ASTM D 3080-04
(modified for unconsolidated, undrained conditions)

Job Number:	544-07376	October 21, 2009
Job Name	Polk Street	Initial Dry Density: 98.2 pcf
Lab ID No.	LN6-09445	Initial Mosture Content: 18.0 %
Sample ID	BH-2 Bulk 2 @ 0-5'	Peak Friction Angle (Ø): 27°
Classification	Olive Brown Silty Clay (CL)	Cohesion (c): 290 psf
Sample Type	Remolded @ 90% of Maximum Density	

Test Results	1	2	3	4	Average
Moisture Content, %	28.0	28.0	28.0	28.0	28.0
Saturation, %	105.6	105.6	105.6	105.6	105.6
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	0.658	1.075	1.776	3.311	



Sladden Engineering

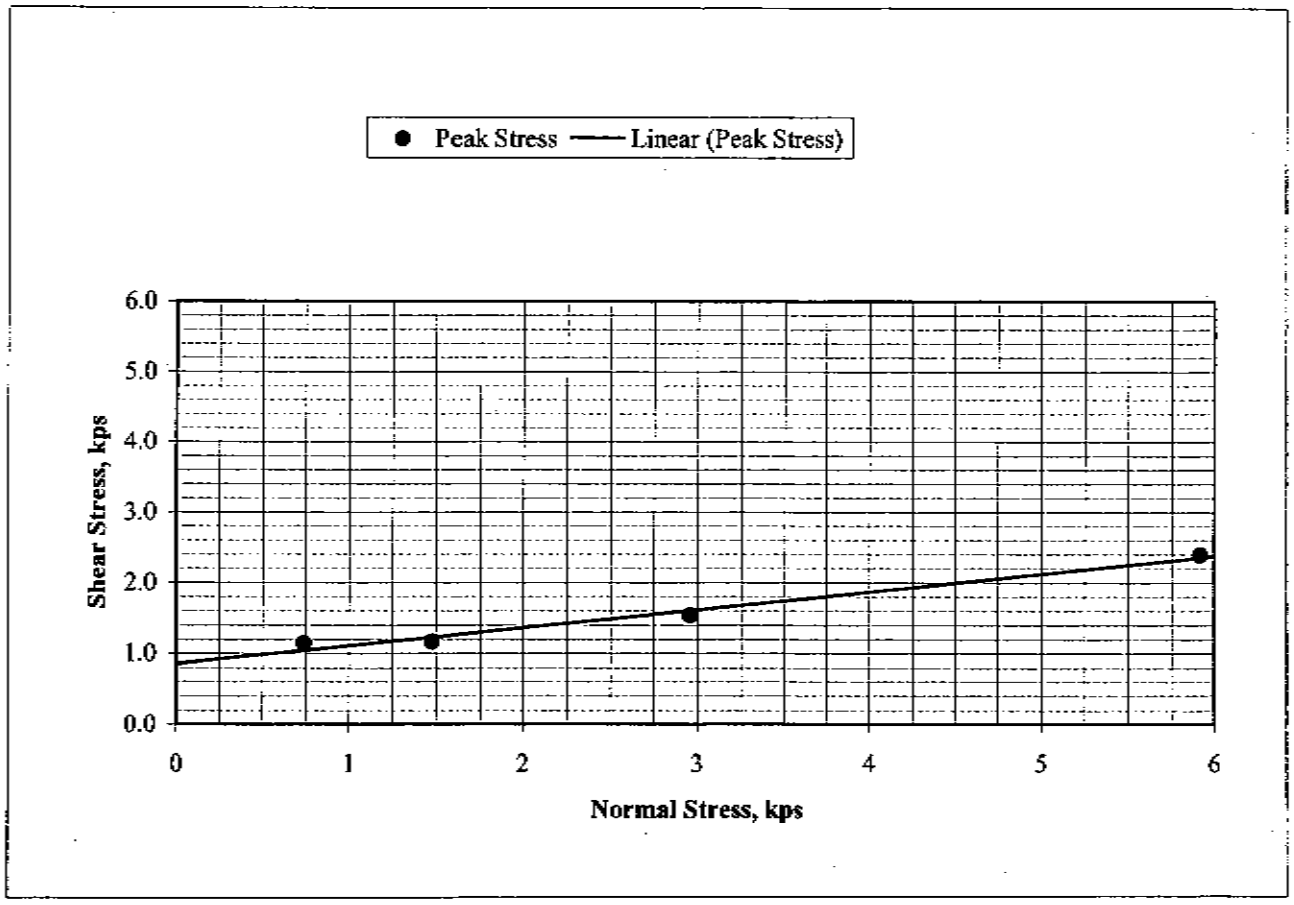
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Direct Shear ASTM D 3080-04

(modified for unconsolidated, undrained conditions)

Job Number:	544-07376		October 21, 2009
Job Name	Polk Street		Initial Dry Density: 97.7 pcf
Lab ID No.	LN6-09445		Initial Mosture Content: 17.8 %
Sample ID	BH-3 Bulk 3 @ 0-5'		Peak Friction Angle (Ø): 14°
Classification	Gray Brown Silty Clay (CL)		Cohesion (c): 860 psf
Sample Type	Remolded @ 90% of Maximum Density		

Test Results	1	2	3	4	Average
Moisture Content, %	28.8	28.8	28.8	28.8	28.8
Saturation, %	107.3	107.3	107.3	107.3	107.3
Normal Stress, kps	0.739	1.479	2.958	5.916	
Peak Stress, kps	1.140	1.162	1.535	2.390	



Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

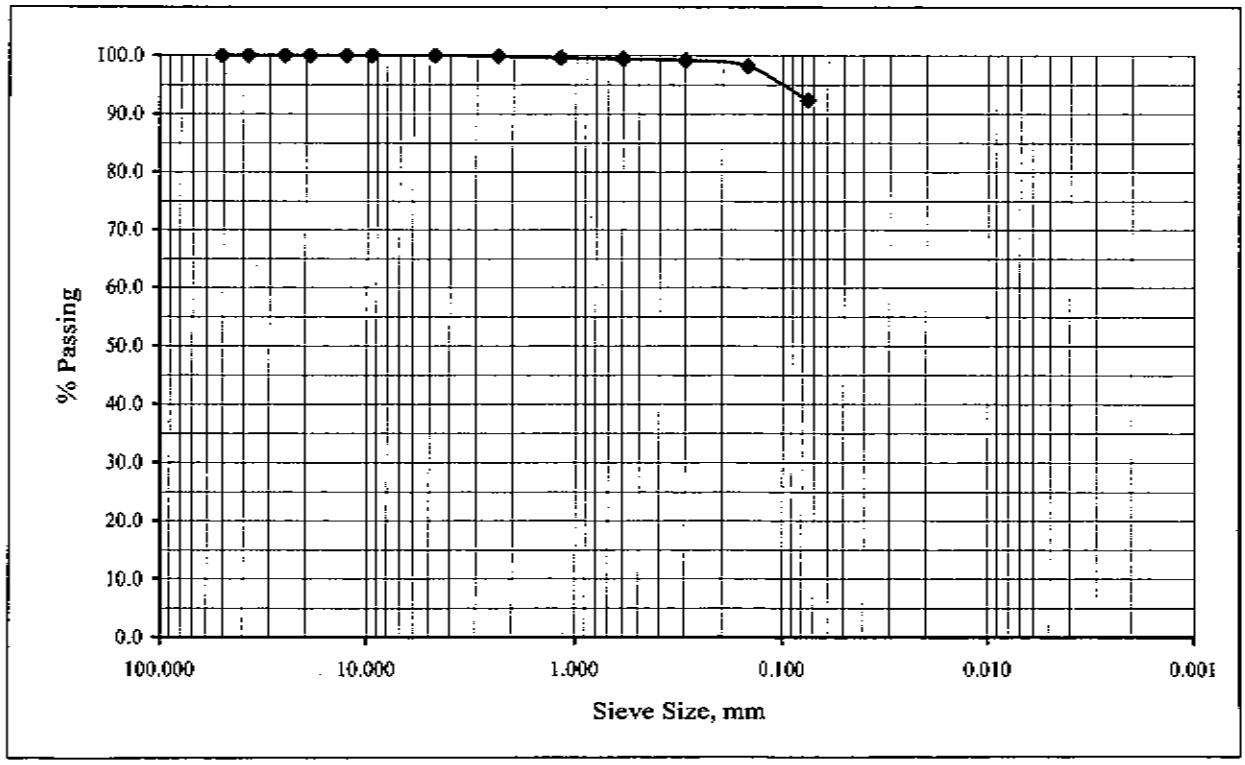
ASTM C117 & C136

Project Number: 544-07376
Project Name: Polk Street
Lab ID Number: LN6-09445
Sample ID: BH-1 Bulk 1 @ 0-5'

October 21,2009

Soil Classification: CL

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	100.0
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	99.8
#16	1.18	99.6
#30	0.60	99.4
#50	0.30	99.2
#100	0.15	98.2
#200	0.075	92.4



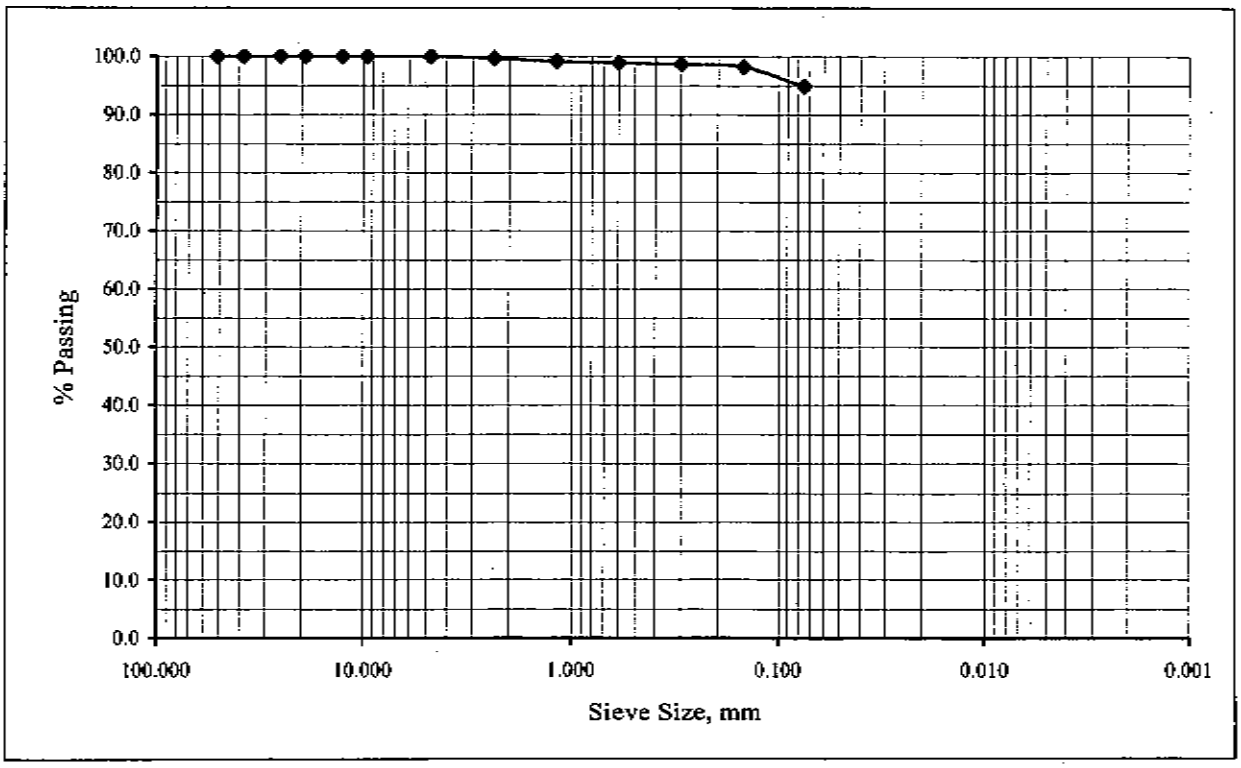
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 October 21,2009
Project Name: Polk Street
Lab ID Number: LN6-09445
Sample ID: BH-2 Bulk 2 @ 0-5' Soil Classification: CL

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	100.0
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	99.7
#16	1.18	99.2
#30	0.60	98.9
#50	0.30	98.7
#100	0.15	98.2
#200	0.075	94.9



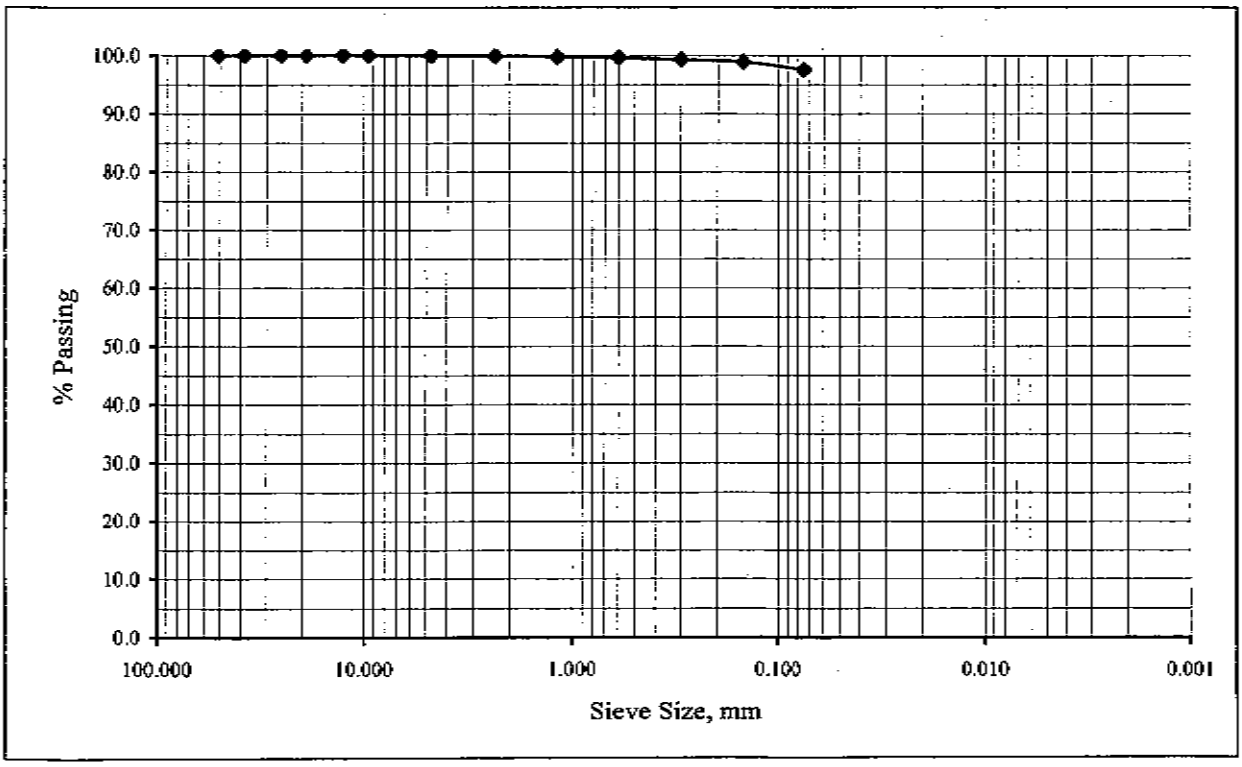
Sladden Engineering
450 Egan Avenue, Beaumont, CA 92223 (951) 845-7743 Fax (951) 845-8863

Gradation

ASTM C117 & C136

Project Number: 544-07376 October 21,2009
Project Name: Polk Street
Lab ID Number: LN6-09445
Sample ID: BH-3 Bulk 3 @ 0-5' Soil Classification: CL

Sieve Size, in	Sieve Size, mm	Percent Passing
2"	50.8	100.0
1 1/2"	38.1	100.0
1"	25.4	100.0
3/4"	19.1	100.0
1/2"	12.7	100.0
3/8"	9.53	100.0
#4	4.75	100.0
#8	2.36	100.0
#16	1.18	99.8
#30	0.60	99.6
#50	0.30	99.3
#100	0.15	98.9
#200	0.075	97.5



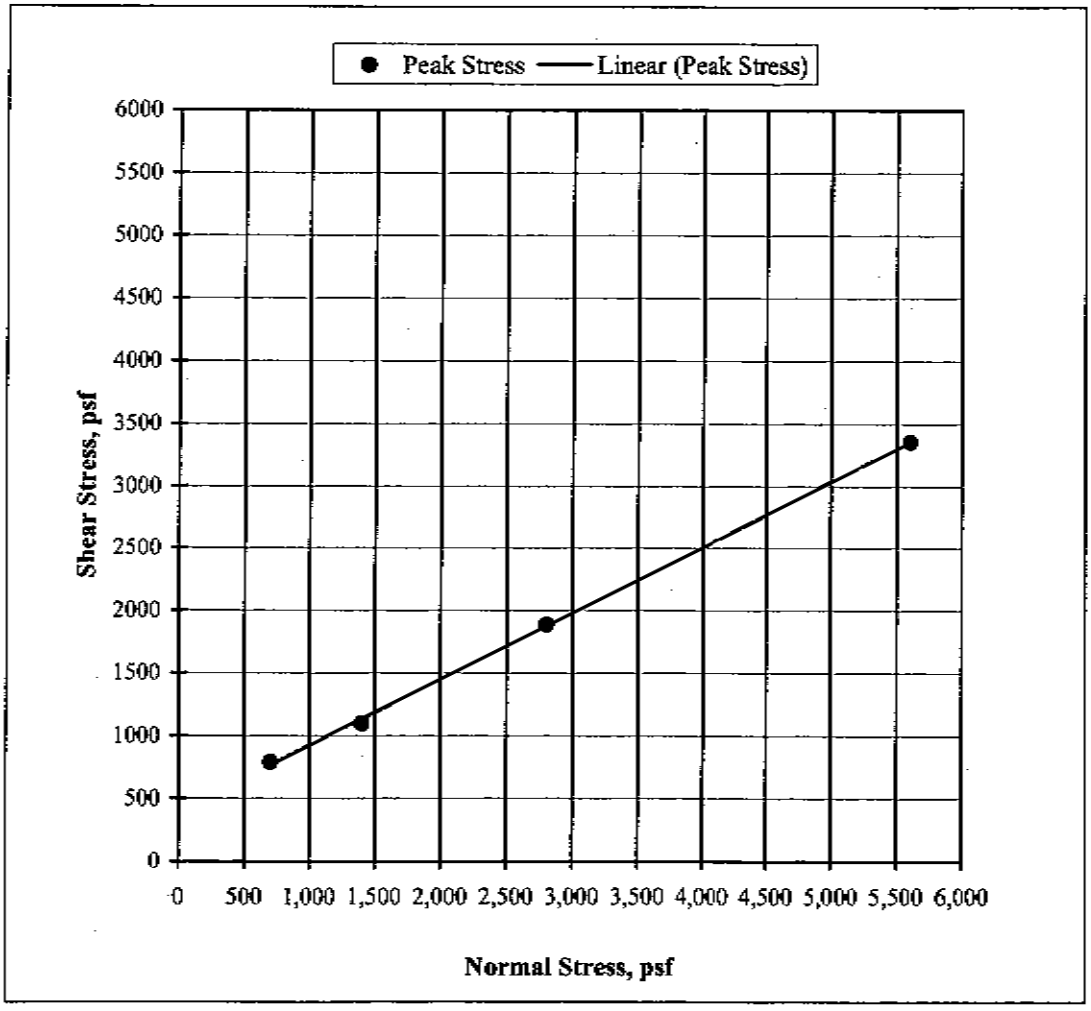
Direct Shear ASTM D 3080-90
(modified for unconsolidated, undrained conditions)

Job Number 544-07376 October 21, 2009

Job Name Polk Street
Lab ID No. LN6-09445
Sample ID BH-1 Bulk 1 @ 0-5'
Classification Olive Brown Silty Clay (CL)
Sample Type Remolded @ 90% of Maximum Density

Initial Dry Density: 102.6 pcf
Initial Mosture Content: 15.7 %
Peak Friction Angle (Ø): 28°
Cohesion (c): 390 psf

Test Results	1	2	3	4	Average
Moisture Content, %	24.1	24.1	24.1	24.1	24.1
Saturation, %	101.4	101.4	101.4	101.4	101.4
Normal Stress, psf	701	1,401	2,803	5,605	
Peak Stress, psf	789	1,097	1,886	3,355	



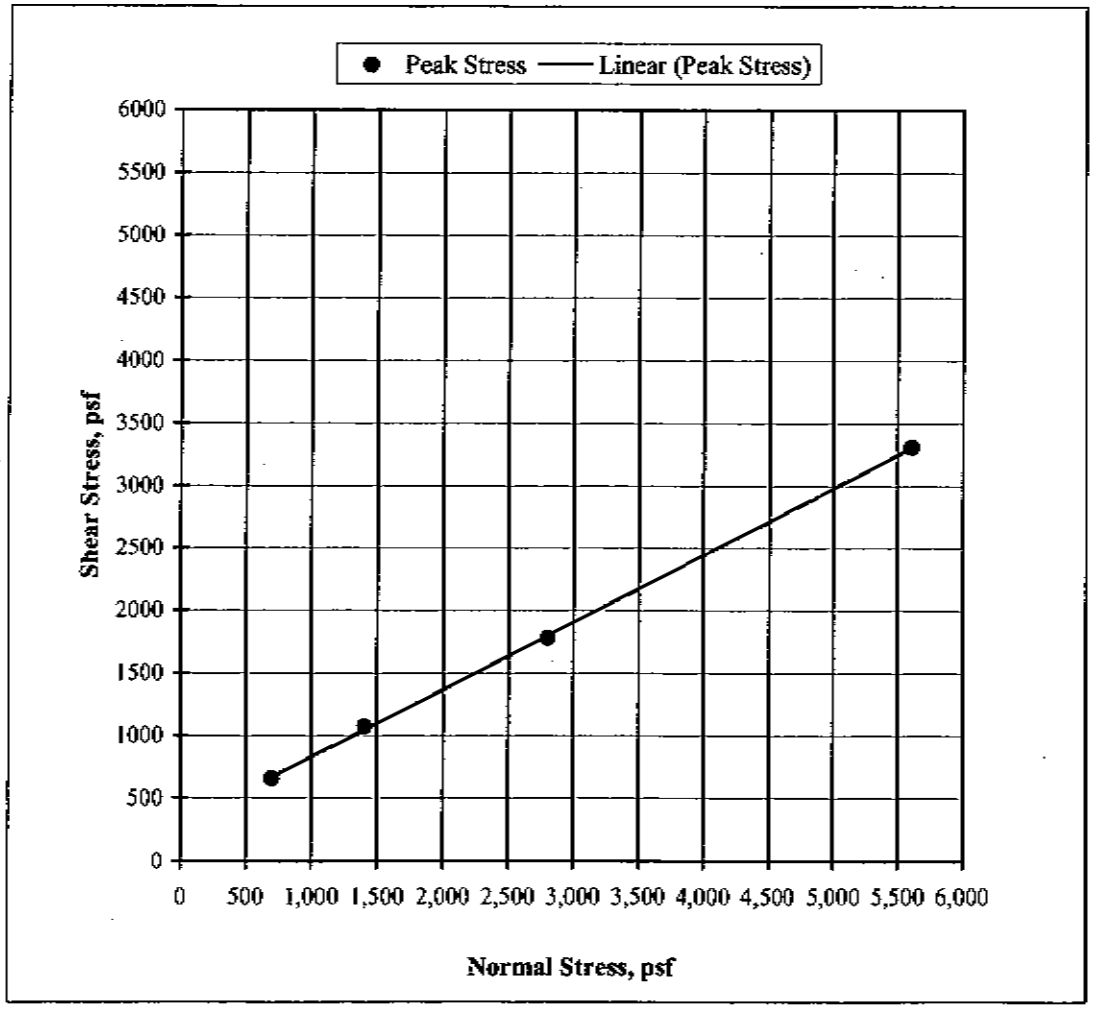
Direct Shear ASTM D 3080-90
(modified for unconsolidated, undrained conditions)

Job Number 544-07376 October 21, 2009

Job Name Polk Street
Lab ID No. LN6-09445
Sample ID BH-2 Bulk 2 @ 0-5'
Classification Olive Brown Silty Clay (CL)
Sample Type Remolded @ 90% of Maximum Density

Initial Dry Density: 98.2 pcf
Initial Mosture Content: 18.0 %
Peak Friction Angle (Ø): 28°
Cohesion (c): 290 psf

Test Results	1	2	3	4	Average
Moisture Content, %	28.0	28.0	28.0	28.0	28.0
Saturation, %	105.6	105.6	105.6	105.6	105.6
Normal Stress, psf	701	1,401	2,803	5,605	
Peak Stress, psf	658	1,075	1,776	3,311	



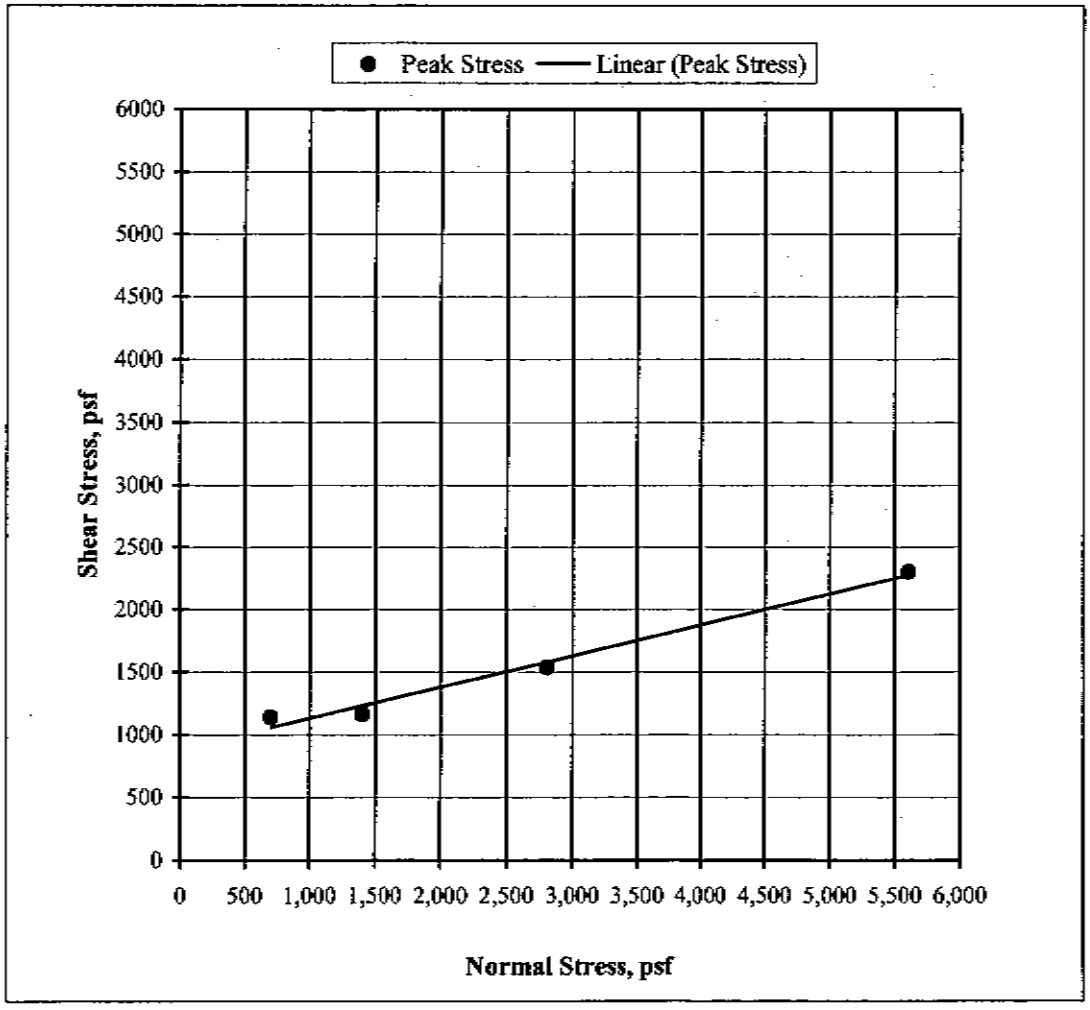
Direct Shear ASTM D 3080-90
(modified for unconsolidated, undrained conditions)

Job Number 544-07376 October 21, 2009

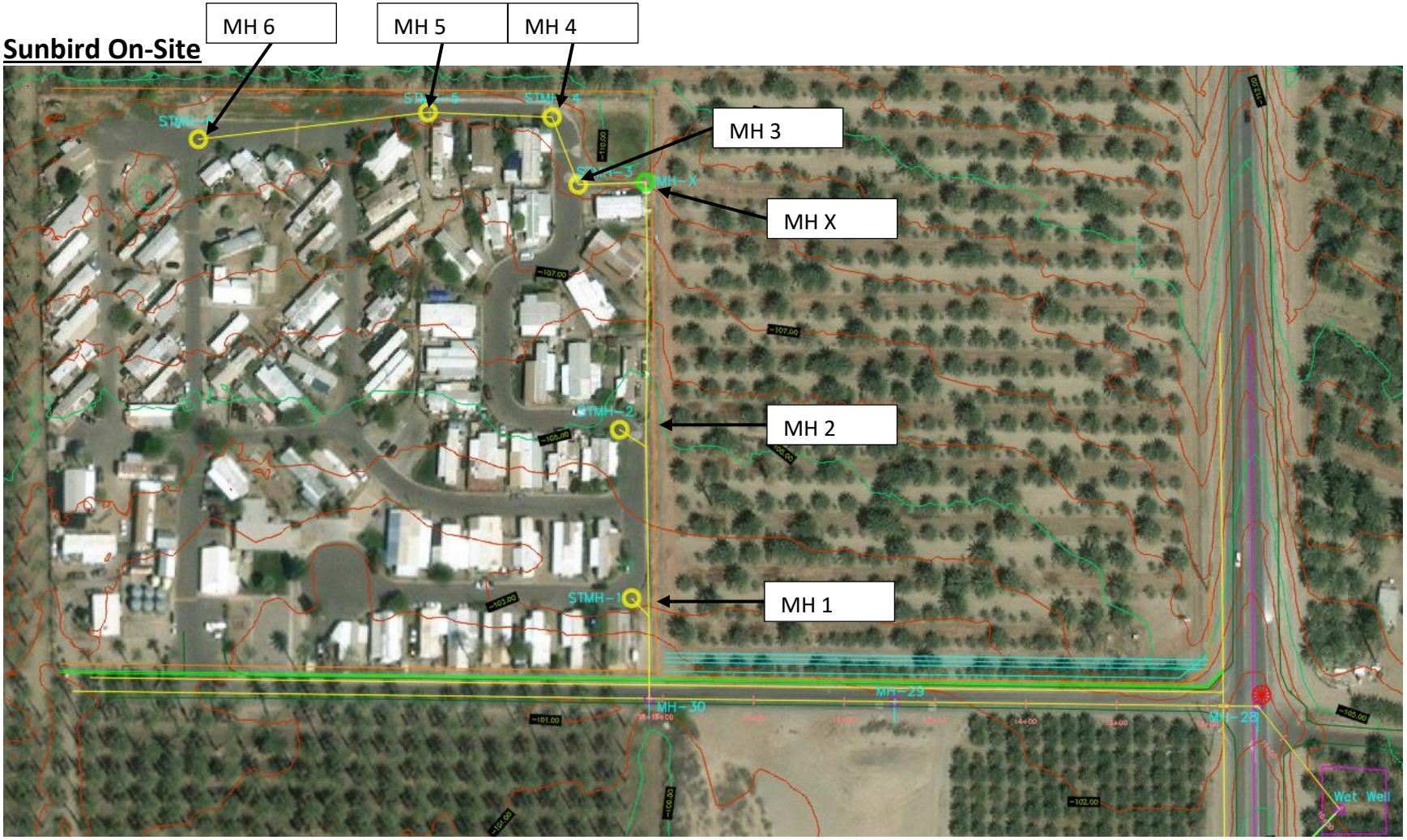
Job Name Polk Street
Lab ID No. LN6-09445
Sample ID BH-3 Bulk 3 @ 0-5'
Classification Gray Brown Silty Clay (CL)
Sample Type Remolded @ 90% of Maximum Density

Initial Dry Density: 97.7 pcf
Initial Mosture Content: 17.8 %
Peak Friction Angle (Ø): 14°
Cohesion (c): 880 psf

Test Results	1	2	3	4	Average
Moisture Content, %	28.8	28.8	28.8	28.8	28.8
Saturation, %	107.3	107.3	107.3	107.3	107.3
Normal Stress, psf	701	1,401	2,803	5,605	
Peak Stress, psf	1,140	1,162	1,535	2,303	



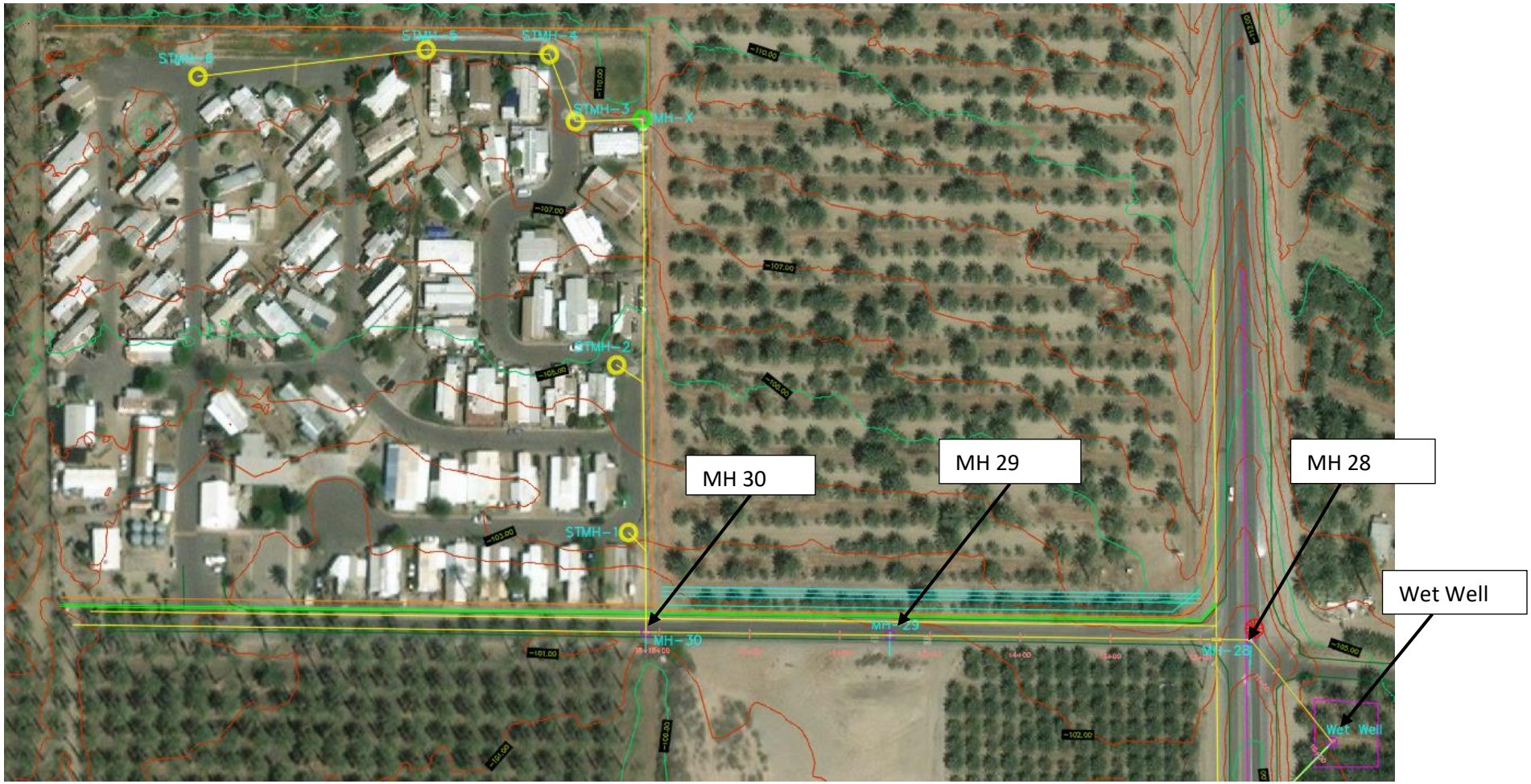
Sunbird On-Site



On site Septic Tank MH #	Surface Elev. (ft)	Trench Depth (ft)	Trench Width (ft)
6	-108.5	5.2	2.2
5	-109.0	5.7	2.7
4	-109.0	6.2	3.2
3	-108.5	7.0	4.0
MH- X	-108.5	7.3	4.3
MH 30	-101.3	17.2	14.2
2	-104.5	7.2	4.2
1	-103.5	5.2	2.2
Average		7.6	4.6

Echols Road

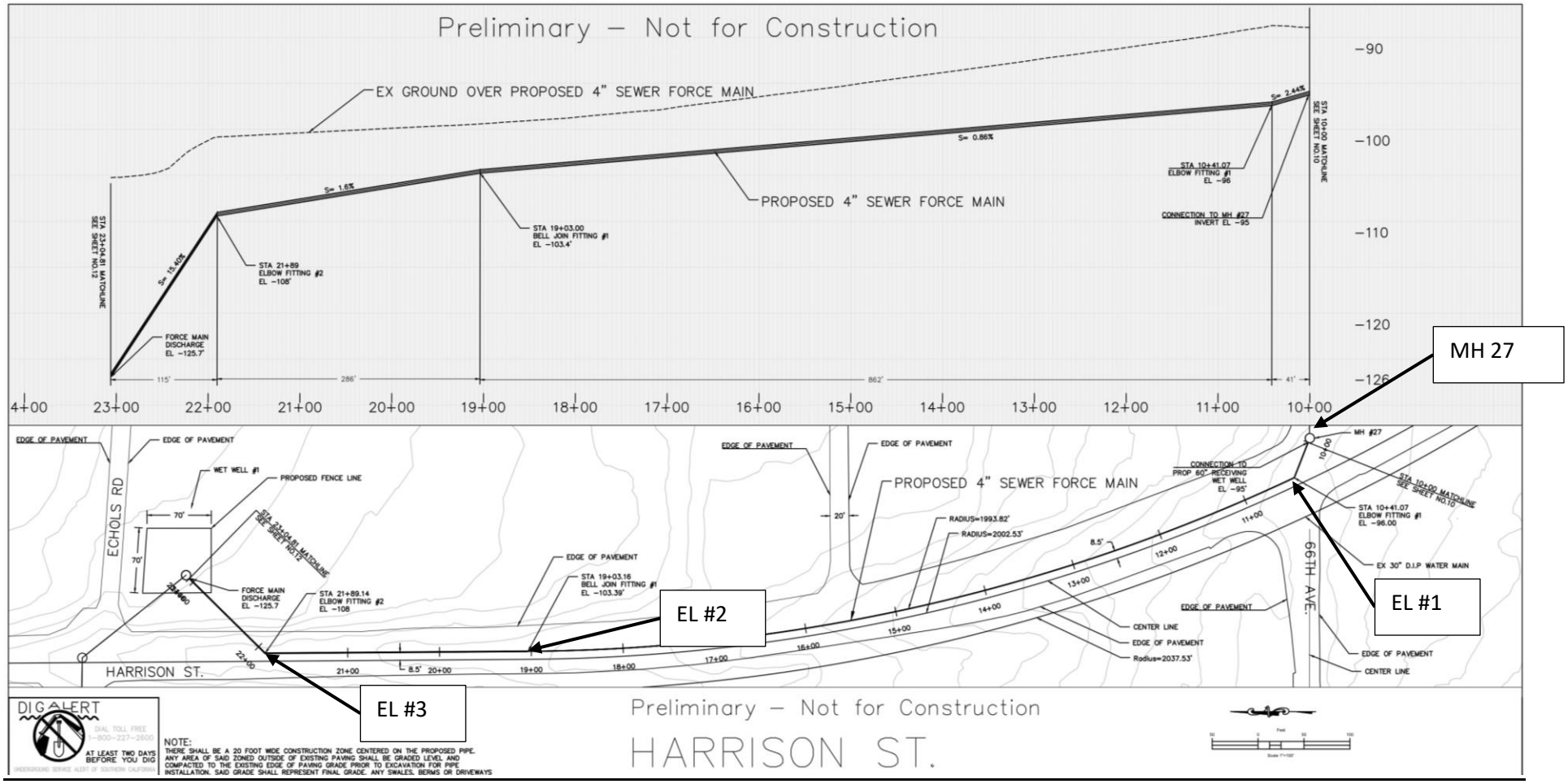
MH 28-30 & Wet Well



Prop. MH	Invert in (ft)	Invert out (ft)	Surface (ft)	Pipe Cover (ft)	Trench Depth (ft)	Trench Width (ft)
30	-117.0	-117.5	-101.3	16.8	19.0	16.0
29	-118.5	-118.6	-102.5	16.7	18.9	15.9
28	-120.1	-120.2	-101.6	19.2	21.4	18.4
Wet well	-120.7		-103.5	17.8	20.0	17.0
Average Cover				17.7	19.8	16.8

Harrison Street

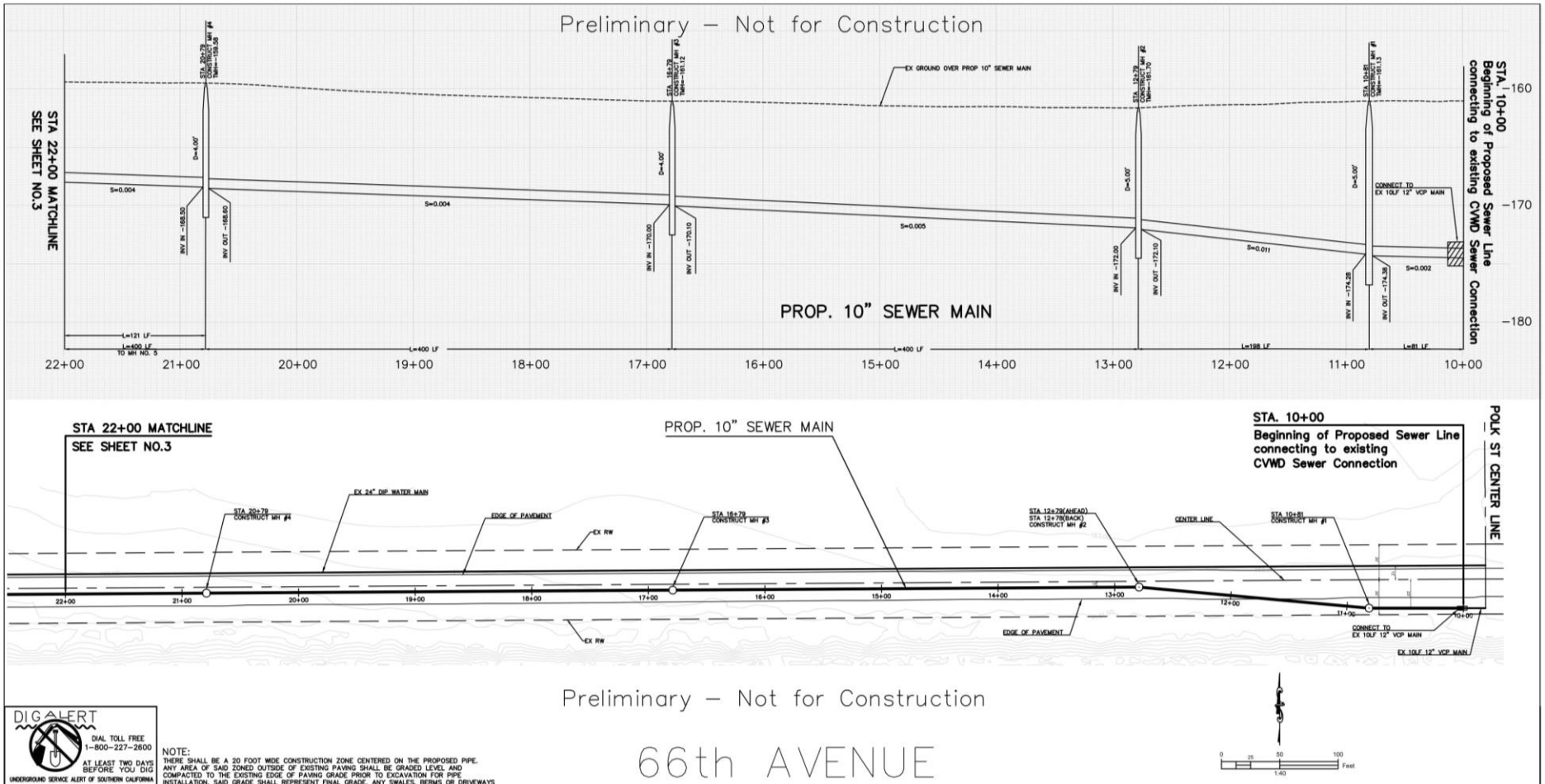
MH 27, Elevation #1-#3



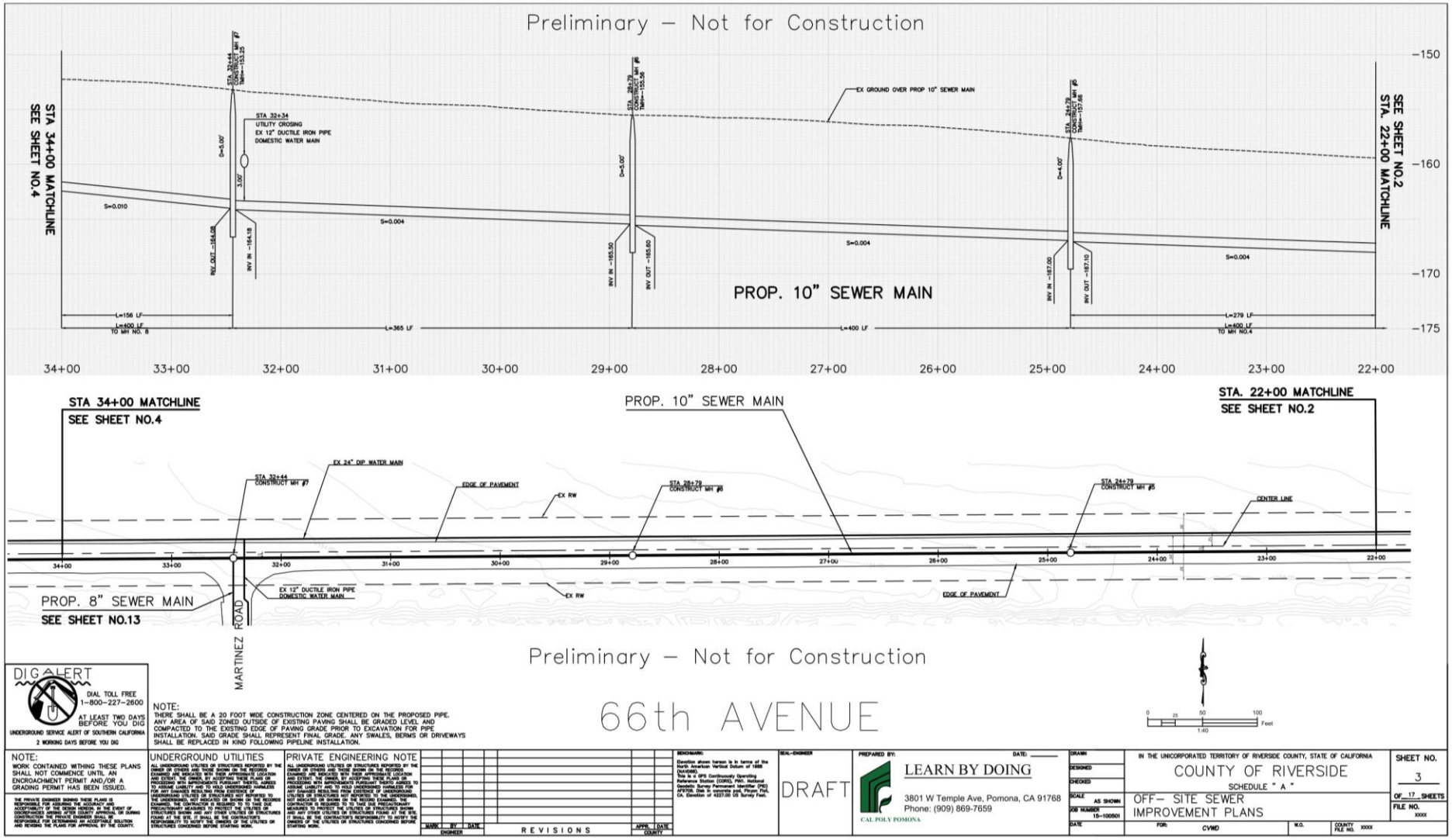
Nodes	Invert in (ft)	Invert out (ft)	Surface (ft)	Pipe Cover (ft)	Trench Depth (ft)	Trench Width (ft)
Pump Station	-120.7	-125.7	-103.5	17.9	20.2	17.2
EL #3	-108.0	-108.0	-99.5	8.2	10.5	7.5
EL #2	-103.4	-103.4	-98.5	4.6	6.9	3.9
EL #1	-96.0	-96.0	-87.5	8.2	10.5	7.5
MH 27	-95	-97.0	-87.7	8.4	10.7	7.7
Average Cover				9.4	11.8	8.8

66th Avenue

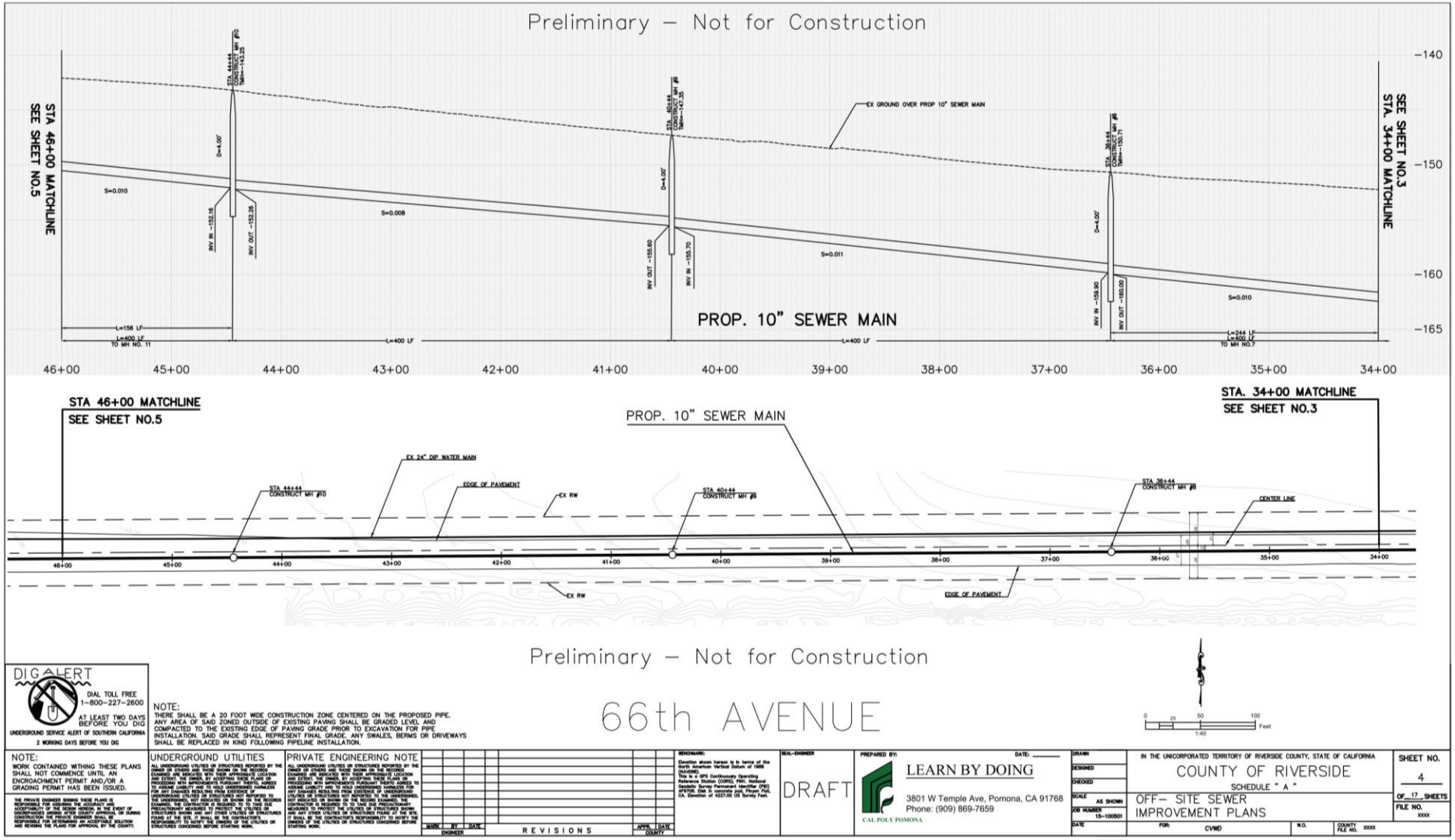
MH #1-#4



MH #5-#7


Preliminary – Not for Construction
STA 34+00 MATCHLINE
SEE SHEET NO.4
SEE SHEET NO.2
STA. 22+00 MATCHLINE
STA 32+34
UTILITY CROSING
EX 12" DUCTILE IRON PIPE
DOMESTIC WATER MAIN
EX GROUND OVER PROP 10" SEWER MAIN
PROP. 10" SEWER MAIN
S=0.010
S=0.004
INV OUT -164.08
INV IN -164.18
INV IN -165.50
INV OUT -165.60
INV IN -167.00
INV OUT -167.10
L=156 LF
L=400 LF
TO MH NO. 8
L=365 LF
L=400 LF
L=279 LF
L=400 LF
TO MH NO.4
-150
-160
-170
-175
34+00
33+00
32+00
31+00
30+00
29+00
28+00
27+00
26+00
25+00
24+00
23+00
22+00
STA 34+00 MATCHLINE
SEE SHEET NO.4
PROP. 10" SEWER MAIN
STA. 22+00 MATCHLINE
SEE SHEET NO.2
EX 24" DIP WATER MAIN
EDGE OF PAVEMENT
EX RW
CENTER LINE
EX 12" DUCTILE IRON PIPE
DOMESTIC WATER MAIN
PROP. 8" SEWER MAIN
SEE SHEET NO.13
MARTINEZ ROAD
Preliminary – Not for Construction
66th AVENUE
DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG
NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.
NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.
UNDERGROUND UTILITIES
PRIVATE ENGINEERING NOTE
MARK BY DATE
ENGINEER
REVISIONS
APPR. DATE
COUNTY
DRAFT
PREPARED BY:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER
IMPROVEMENT PLANS
SHEET NO.
3
OF 17 SHEETS
FILE NO.
XXXX
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX

MH #8-#10



DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF ANY DISCREPANCIES OR ERRORS IN THE DESIGN, OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED AND EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR DAMAGES RESULTING FROM ANY DISCREPANCY IN UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN ON THE RECORDS EXAMINED AND THOSE FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED AND EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR DAMAGES RESULTING FROM ANY DISCREPANCY IN UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN ON THE RECORDS EXAMINED AND THOSE FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a GPS Continuously Operating Reference Station (CORS) PID: DG0000 Designation: DG0000 Type: Global Positioning System (GPS) Order: (NG) AF8705. Due S remarks pos. Flryer Flat, CA. Elevation of 4227.00 US Survey Feet.

SEAL—ENGINEER
DRAFT

PREPARED BY:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DATE:

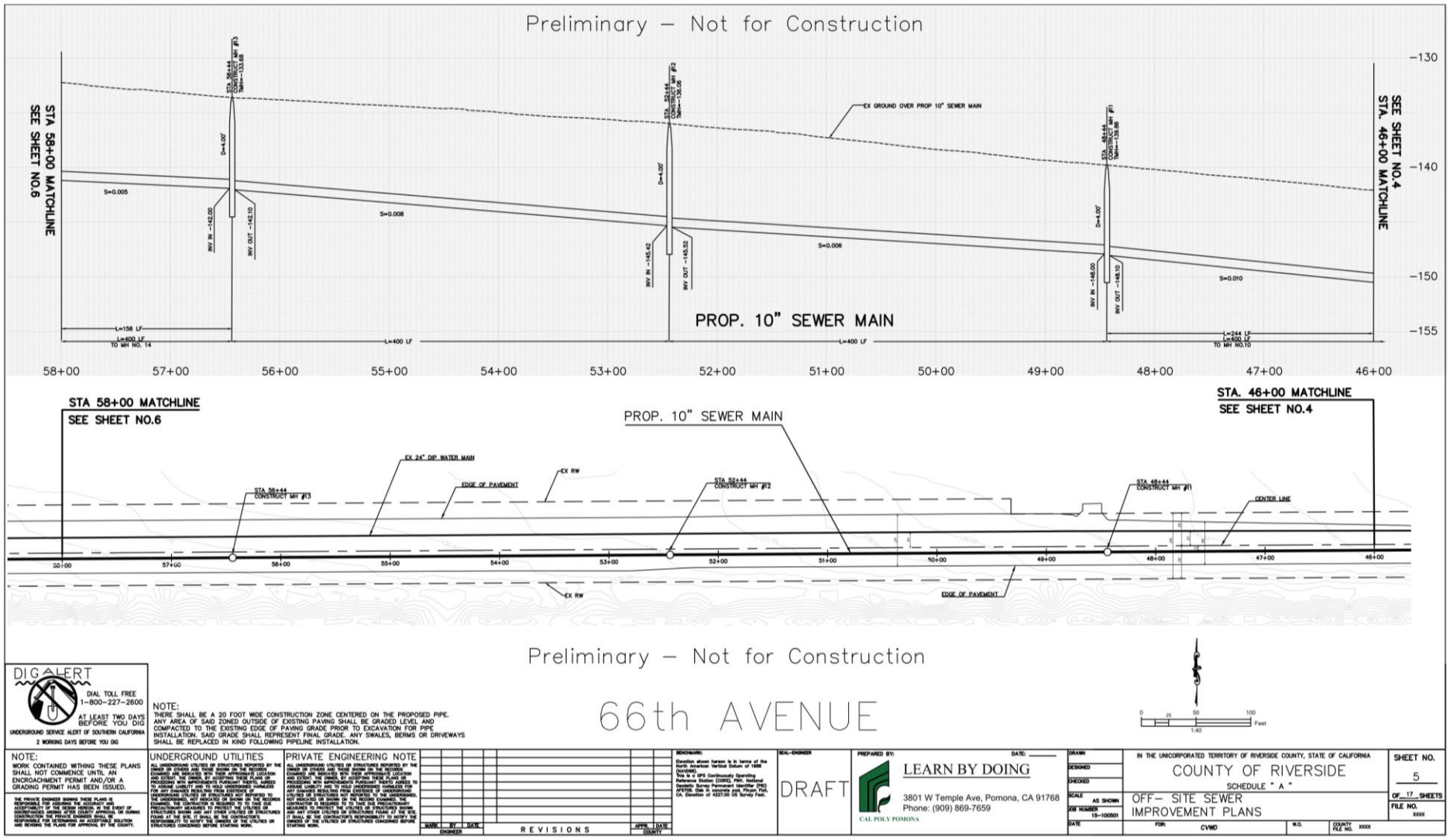
DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER
IMPROVEMENT PLANS

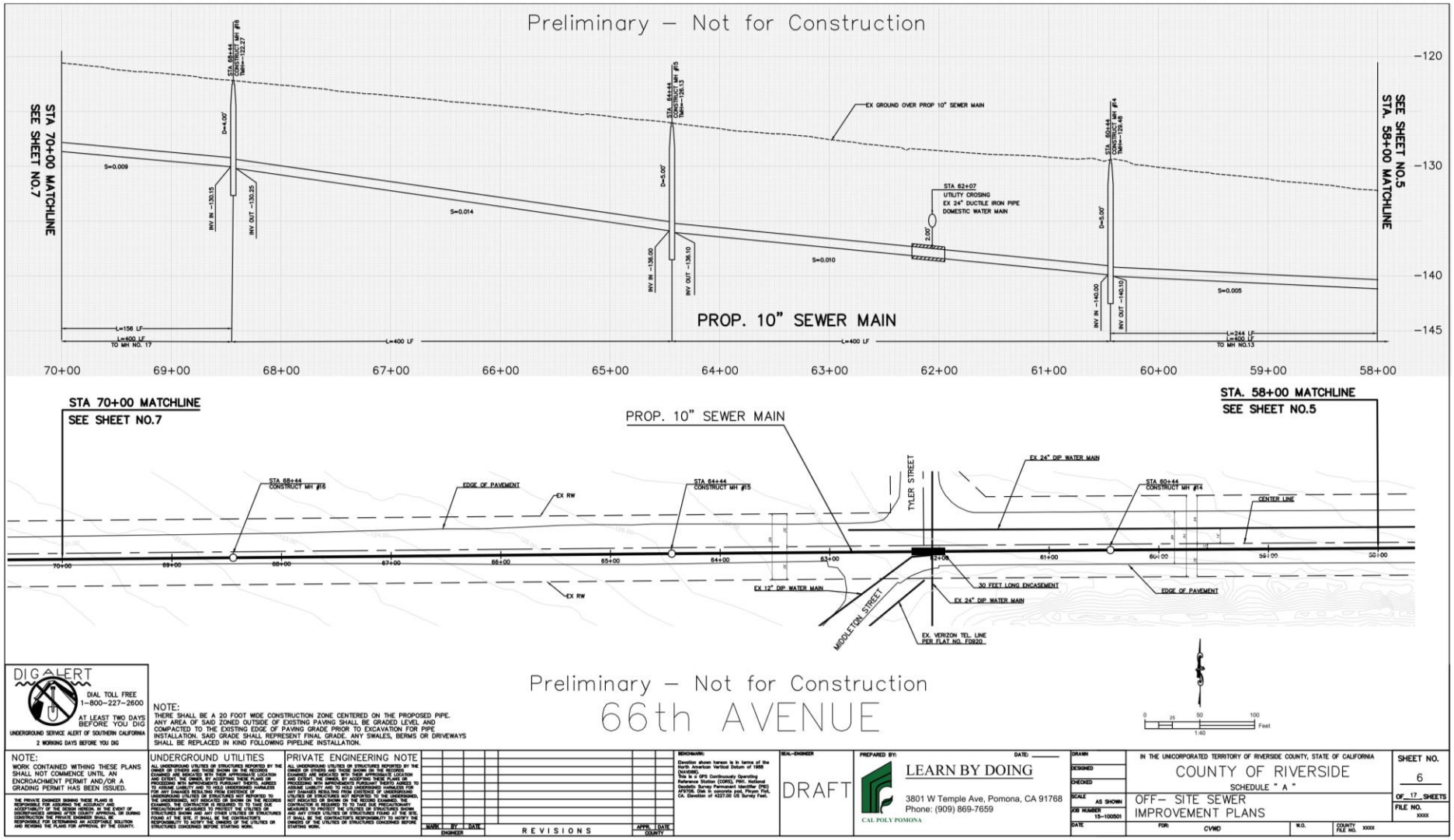
FOR: CVWD | W.O. | COUNTY FILE NO. XXXX

SHEET NO. 4 OF 17 SHEETS
FILE NO. XXXX

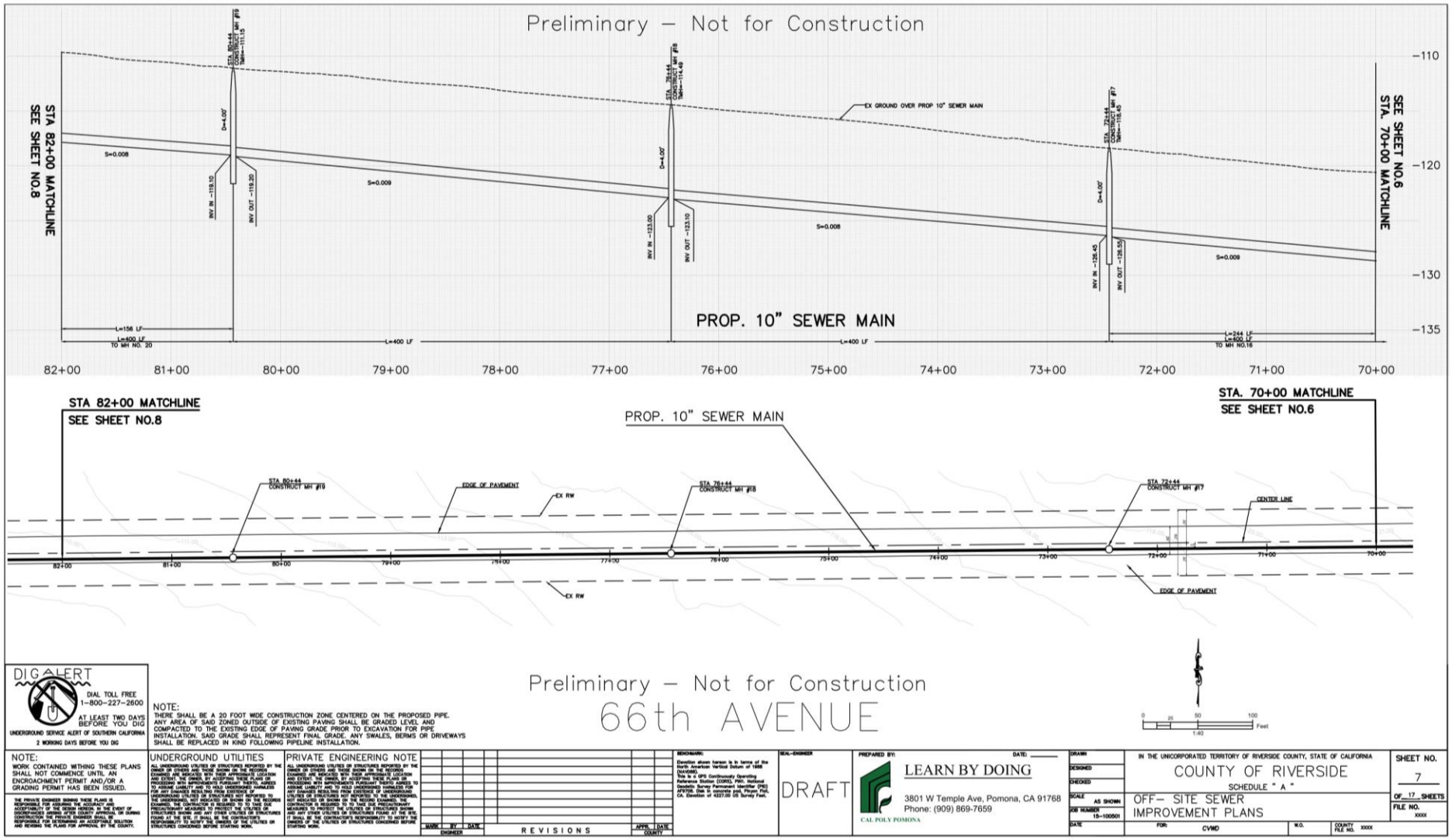
MH #11-#13


Preliminary – Not for Construction
STA 58+00 MATCHLINE
SEE SHEET NO.6
SEE SHEET NO.4
STA. 46+00 MATCHLINE
EX GROUND OVER PROP 10" SEWER MAIN
PROP. 10" SEWER MAIN
S=0.005
S=0.008
S=0.006
S=0.010
D=4.00'
INV IN -142.00
INV OUT -142.10
INV IN -145.42
INV OUT -145.52
INV IN -148.00
INV OUT -148.10
L=156 LF
L=400 LF
TO MH NO. 14
L=244 LF
TO MH NO.10
-130
-140
-150
-155
58+00
57+00
56+00
55+00
54+00
53+00
52+00
51+00
50+00
49+00
48+00
47+00
46+00
STA 58+00 MATCHLINE
SEE SHEET NO.6
STA. 46+00 MATCHLINE
SEE SHEET NO.4
PROP. 10" SEWER MAIN
EX 24" DIP WATER MAIN
EDGE OF PAVEMENT
EX RW
STA 56+44 CONSTRUCT MH #13
STA 52+44 CONSTRUCT MH #12
STA 48+44 CONSTRUCT MH #11
CENTER LINE
EX RW
EDGE OF PAVEMENT
Preliminary – Not for Construction
66th AVENUE
DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG
NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.
NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.
UNDERGROUND UTILITIES
PRIVATE ENGINEERING NOTE
REVISIONS
DRAFT
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
SHEET NO.
5
OF 17 SHEETS
FILE NO.
CVWD

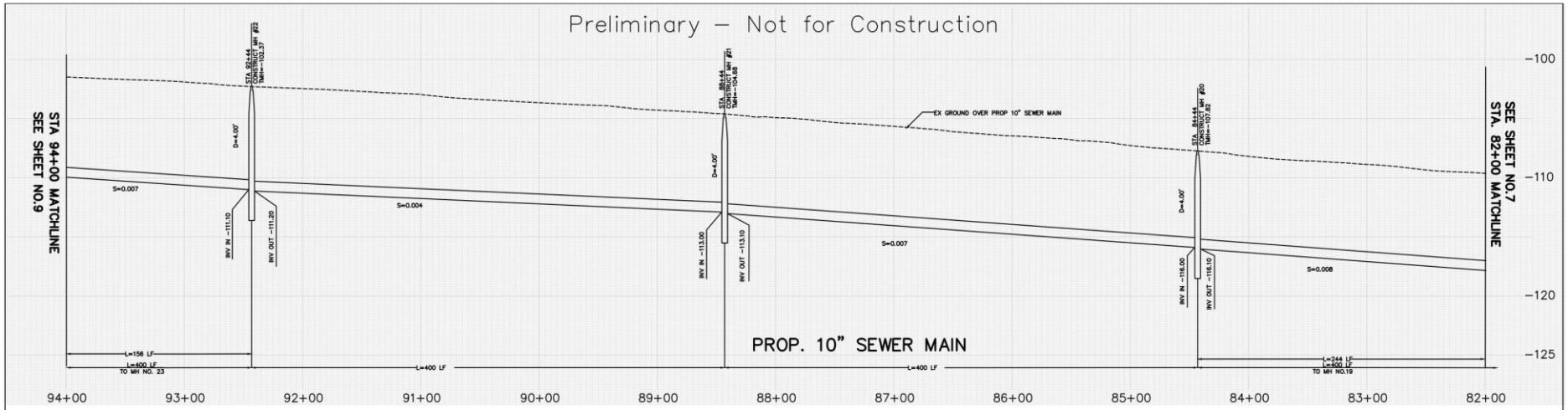
MH #14-#16

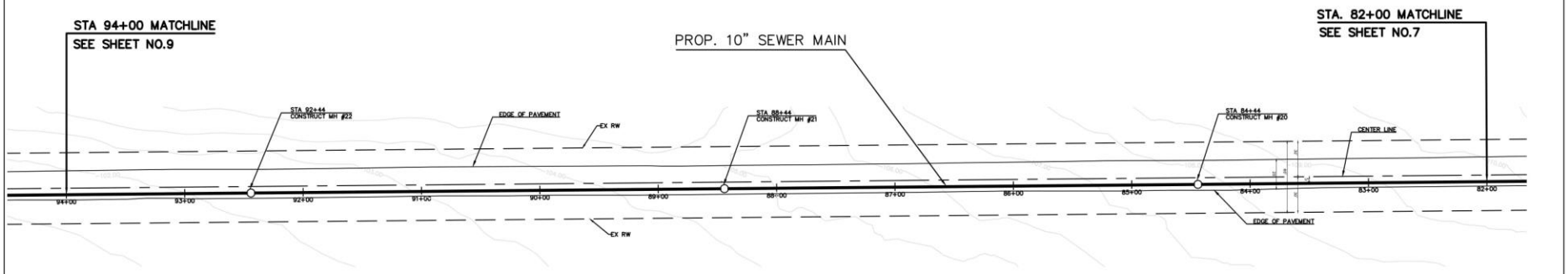

Preliminary – Not for Construction
STA 70+00 MATCHLINE
SEE SHEET NO.7
SEE SHEET NO.5
STA. 58+00 MATCHLINE
EX GROUND OVER PROP 10" SEWER MAIN
STA 62+07
UTILITY CROSING
EX 24" DUCTILE IRON PIPE
DOMESTIC WATER MAIN
PROP. 10" SEWER MAIN
S=0.009
S=0.014
S=0.010
S=0.005
L=156 LF
L=400 LF
TO MH NO. 17
L=244 LF
TO MH NO.13
70+00
69+00
68+00
67+00
66+00
65+00
64+00
63+00
62+00
61+00
60+00
59+00
58+00
-120
-130
-140
-145
STA 68+44
CONSTRUCT MH #16
STA 64+44
CONSTRUCT MH #15
STA 60+44
CONSTRUCT MH #14
EDGE OF PAVEMENT
EX RW
TYLER STREET
EX 24" DIP WATER MAIN
CENTER LINE
EX 12" DIP WATER MAIN
30 FEET LONG ENCASEMENT
MIDDLETON STREET
EX. VERIZON TEL. LINE
PER FLAT NO. FD820
Preliminary – Not for Construction
66th AVENUE
DIG ALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS
BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG
NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.
NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.
THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR GEOMETRIC ACCURACY AND ACCEPTABILITY OF THE DESIGN. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.
UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO AGREES TO INDEMNIFY AND HOLD THE COUNTY HARMLESS FROM AND AGAINST ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO AGREES TO INDEMNIFY AND HOLD THE COUNTY HARMLESS FROM AND AGAINST ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORD EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
MARK BY DATE
ENGINEER
REVISIONS
APPR. DATE
COUNTY
BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88)
Tie to NGS GPS Continuously Operating Reference Station (CORS), PM1, National Geodetic Survey Permanent Identifier (PID) AF5726. Disk in concrete post, Pinyon Flat, CA. Elevation of 4327.00 US Survey Feet.
SEAL-ENGINEER
DRAFT
PREPARED BY:
DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA
DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER
IMPROVEMENT PLANS
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX
SHEET NO. 6
OF 17 SHEETS
FILE NO. XXXX

MH #17-#19


Preliminary – Not for Construction
STA 82+00 MATCHLINE
SEE SHEET NO.8
SEE SHEET NO.6
STA. 70+00 MATCHLINE
EX GROUND OVER PROP 10" SEWER MAIN
PROP. 10" SEWER MAIN
S=0.008
S=0.009
S=0.008
S=0.009
INV IN -119.10
INV OUT -119.20
INV IN -123.00
INV OUT -123.10
INV IN -126.43
INV OUT -126.55
L=156 LF
L=400 LF
TO MH NO. 20
L=400 LF
L=400 LF
L=244 LF
L=400 LF
TO MH NO.16
-110
-120
-130
-135
82+00
81+00
80+00
79+00
78+00
77+00
76+00
75+00
74+00
73+00
72+00
71+00
70+00
STA 82+00 MATCHLINE
SEE SHEET NO.8
PROP. 10" SEWER MAIN
STA. 70+00 MATCHLINE
SEE SHEET NO.6
EDGE OF PAVEMENT
EX RW
CENTER LINE
EDGE OF PAVEMENT
EX RW
DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG
NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.
Preliminary – Not for Construction
66th AVENUE
0 25 50 100 Feet
1:40
NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.
THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN INDICIN. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR PROVIDING THE NECESSARY SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.
UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS ARE THOSE SHOWN ON THE RECORDS EXAMINED AND INDICATED WITH THEIR APPROXIMATE LOCATION ON THE PLANS. THE CONTRACTOR IS REQUIRED TO, BEFORE PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR THOSE SHOWN ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONSIDERED BEFORE STARTING WORK.
PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS ARE THOSE SHOWN ON THE RECORDS EXAMINED AND INDICATED WITH THEIR APPROXIMATE LOCATION ON THE PLANS. THE CONTRACTOR IS REQUIRED TO, BEFORE PROCEEDING WITH IMPROVEMENTS PURSUANT THERETO, AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR THOSE SHOWN ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONSIDERED BEFORE STARTING WORK.
MARK BY DATE
ENGINEER
REVISIONS
APPR. DATE
COUNTY
BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a GPS Continuously Operating Reference Station (CORS), PN11, National Geodetic Survey Permanent Identifier (PID) AF9705. Disk in concrete pipe, Pitzer Hall, CA. Elevation of 1227.00 US Survey Feet.
SEAL-ENGINEER
DRAFT
PREPARED BY:
DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA
DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE
IN THE UNICORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER
IMPROVEMENT PLANS
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX
SHEET NO.
7
OF 17 SHEETS
FILE NO.
XXXX

MH #20-#22





DIG ALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

Preliminary – Not for Construction

66th AVENUE

0 25 50 100 Feet
1:40

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREIN. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND ESTIMATE WITH ORIGINALLY ESTABLISHED PLANS. THE OWNER HEREBY AGREES TO FURNISH THE UNDERSIGNED AND TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, EXCEPT FOR THOSE WHICH ARE FOUND TO BE DAMAGED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND ESTIMATE WITH ORIGINALLY ESTABLISHED PLANS. THE OWNER HEREBY AGREES TO FURNISH THE UNDERSIGNED AND TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, EXCEPT FOR THOSE WHICH ARE FOUND TO BE DAMAGED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR	DATE

ENGINEER
COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the NAVD88 Vertical Datum of 1988 (NAVD88).
This is a CPS Continuously Operating Reference Station (CORS), PID#, National Geodetic Survey Permanent Identifier (PID) AF9706. Disk in concrete pad, Floyan Flat, CA. Elevation of 4227.00 US Survey Feet.

SEAL-ENGINEER
DRAFT

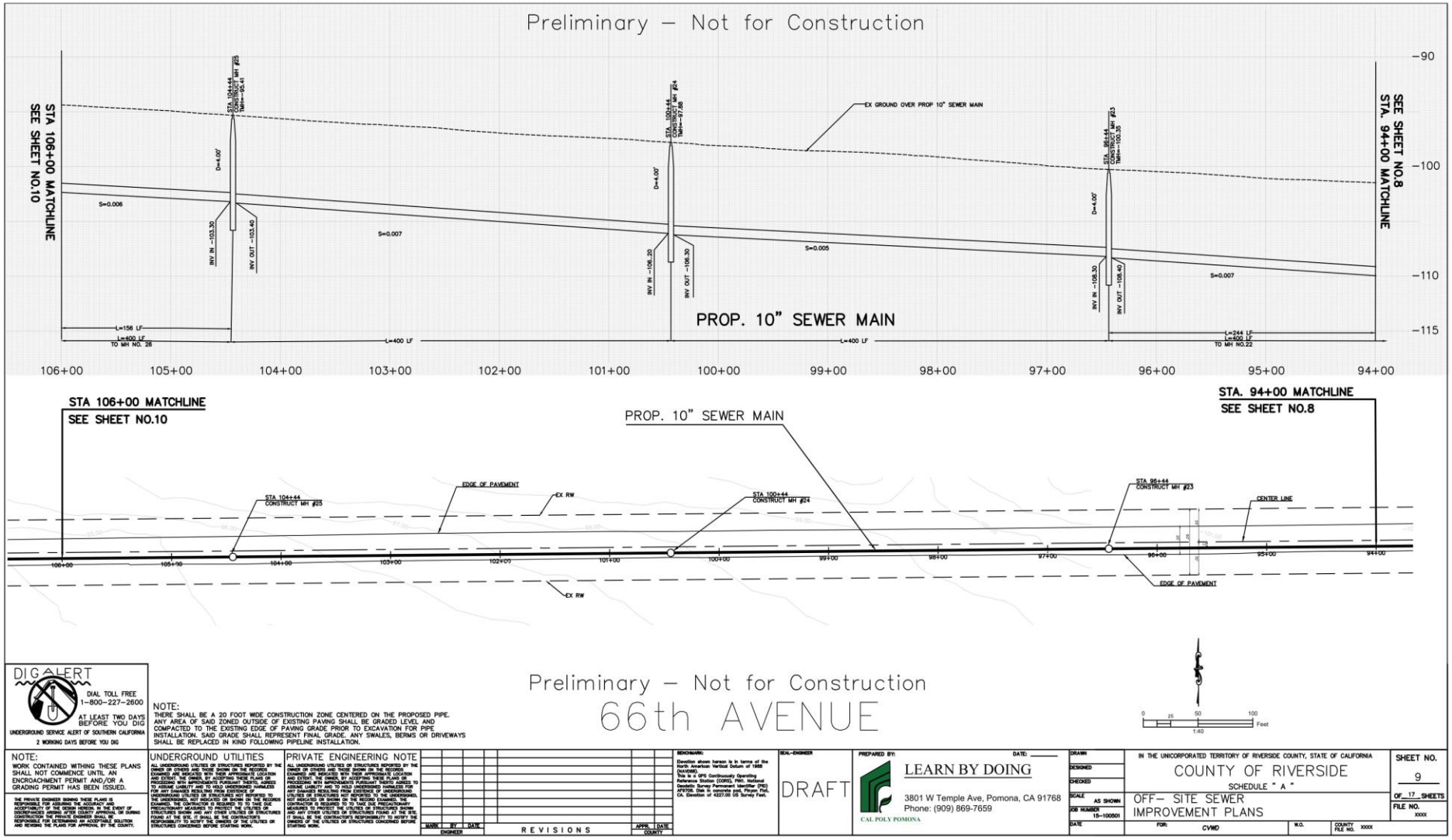
PREPARED BY:
DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE

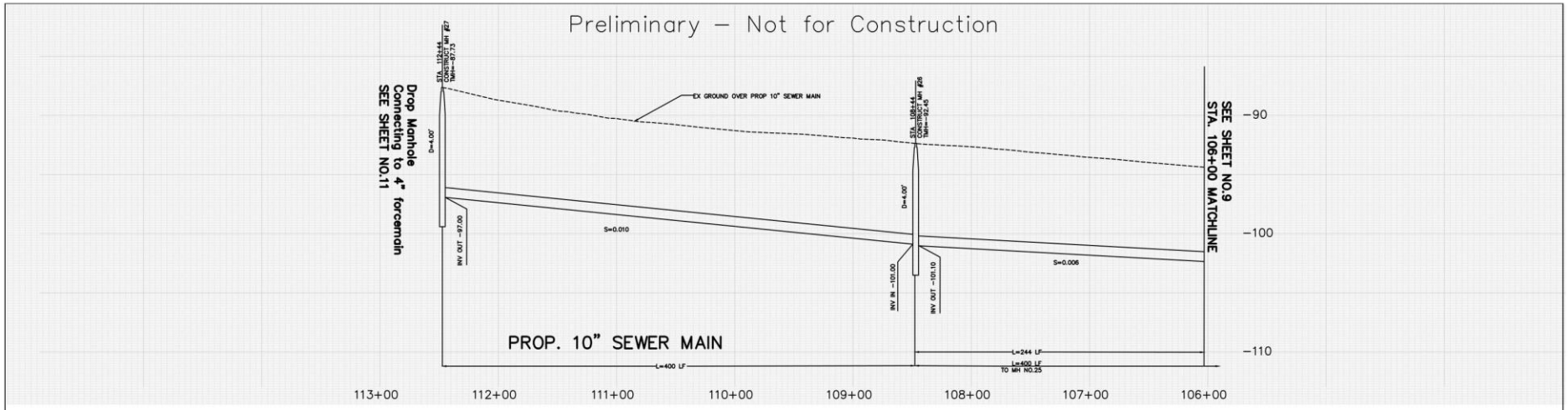
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX

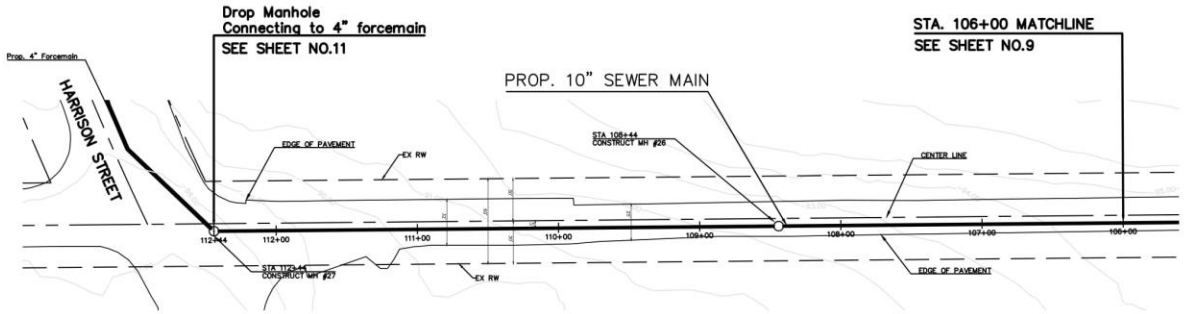
SHEET NO. 8 OF 17 SHEETS
FILE NO. XXXX

MH #23-#25


Preliminary – Not for Construction
STA 106+00 MATCHLINE
SEE SHEET NO.10
STA. 94+00 MATCHLINE
SEE SHEET NO.8
STA 104+44 CONSTRUCT MH #25
STA 100+44 CONSTRUCT MH #24
STA 96+44 CONSTRUCT MH #23
EX GROUND OVER PROP 10" SEWER MAIN
PROP. 10" SEWER MAIN
S=0.006
S=0.007
S=0.005
S=0.007
D=4.00'
INV IN -103.30
INV OUT -103.40
INV IN -106.20
INV OUT -106.30
INV IN -108.30
INV OUT -108.40
L=156 LF
L=400 LF
TO MH NO. 26
L=400 LF
L=400 LF
L=244 LF
L=400 LF
TO MH NO.22
-90
-100
-110
-115
106+00
105+00
104+00
103+00
102+00
101+00
100+00
99+00
98+00
97+00
96+00
95+00
94+00
EDGE OF PAVEMENT
EX RW
CENTER LINE
DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG
NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.
Preliminary – Not for Construction
66th AVENUE
0 25 50 100 Feet
1:40
NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.
THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.
UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND SIZE ON THE PLANS. THE CONTRACTOR SHALL BE REQUIRED TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR NOT INDICATED ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND SIZE ON THE PLANS. THE PRIVATE ENGINEER SIGNING THE PROCEEDING NOTE APPROVED ACCEPTABILITY SHALL BE REQUIRED TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR NOT INDICATED ON THE RECORDS EXAMINED. THE CONTRACTOR IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.
MARK BY DATE
ENGINEER
REVISIONS
APPR DATE
COUNTY
BENCHMARK:
Elevation shown hereon is in terms of the NAVD88 North American Vertical Datum of 1988 (NAVD88).
This is a OPS Continuously Operating Reference Station (CORS), PID#, National Geodetic Survey Permanent Identifier (PID) AF9706. Disk in concrete pad, Pitzyan Flat, CA. Elevation of 4327.00 US Survey Feet.
SEAL-ENGINEER
DRAFT
PREPARED BY:
DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA
DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX
SHEET NO. 9 OF 17 SHEETS
FILE NO. XXXX

MH #26-#27





DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

Preliminary – Not for Construction

66th AVENUE

0 25 50 100 Feet
1:40

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS ARE THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND SIZE. THE OWNER OR OTHERS REPORTING THE PLANS EXAMINED WITH OMISSIONS OR INCORRECT INFORMATION AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR INCORRECTLY REPORTED TO THE UNDERSIGNED. DURING THE CONSTRUCTION IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS ARE THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND SIZE. THE OWNER OR OTHERS REPORTING THE PLANS EXAMINED WITH OMISSIONS OR INCORRECT INFORMATION AGREES TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, OR INCORRECTLY REPORTED TO THE UNDERSIGNED. DURING THE CONSTRUCTION IS REQUIRED TO TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER
COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a CPS Continuously Operating Reference Station (CORS), 2GL, Ingleood Geodetic Survey Benchmark Identifier (PID) AF5705, Type/Monument: GPS, Pinyon Flat, CA. Elevation of 4327.00 US Survey Feet.

SEAL-ENGINEER
DRAFT

PREPARED BY:
DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE

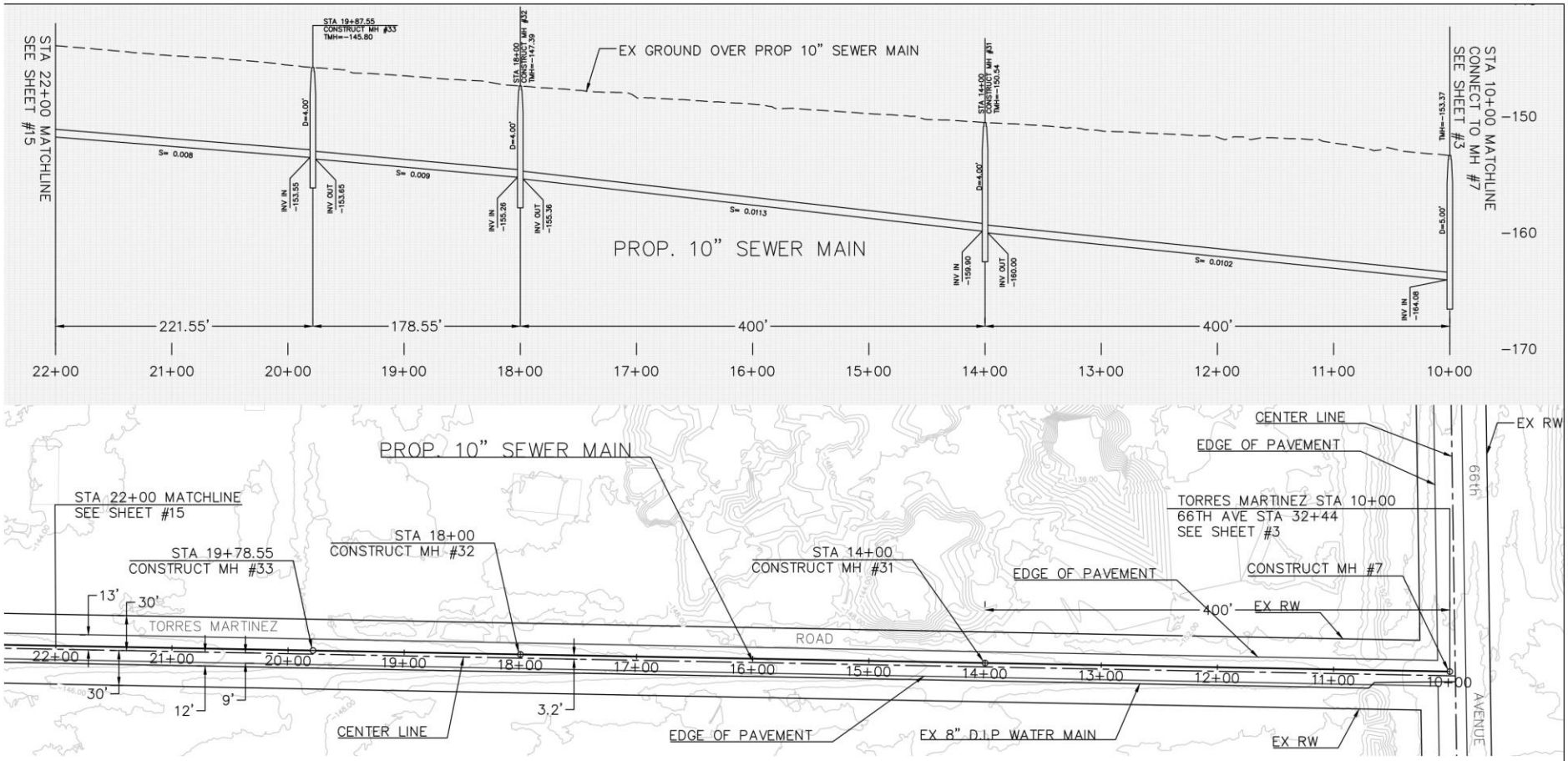
IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD
W.O.
COUNTY FILE NO. XXXX

SHEET NO. 10 OF 17 SHEETS
FILE NO. XXXX

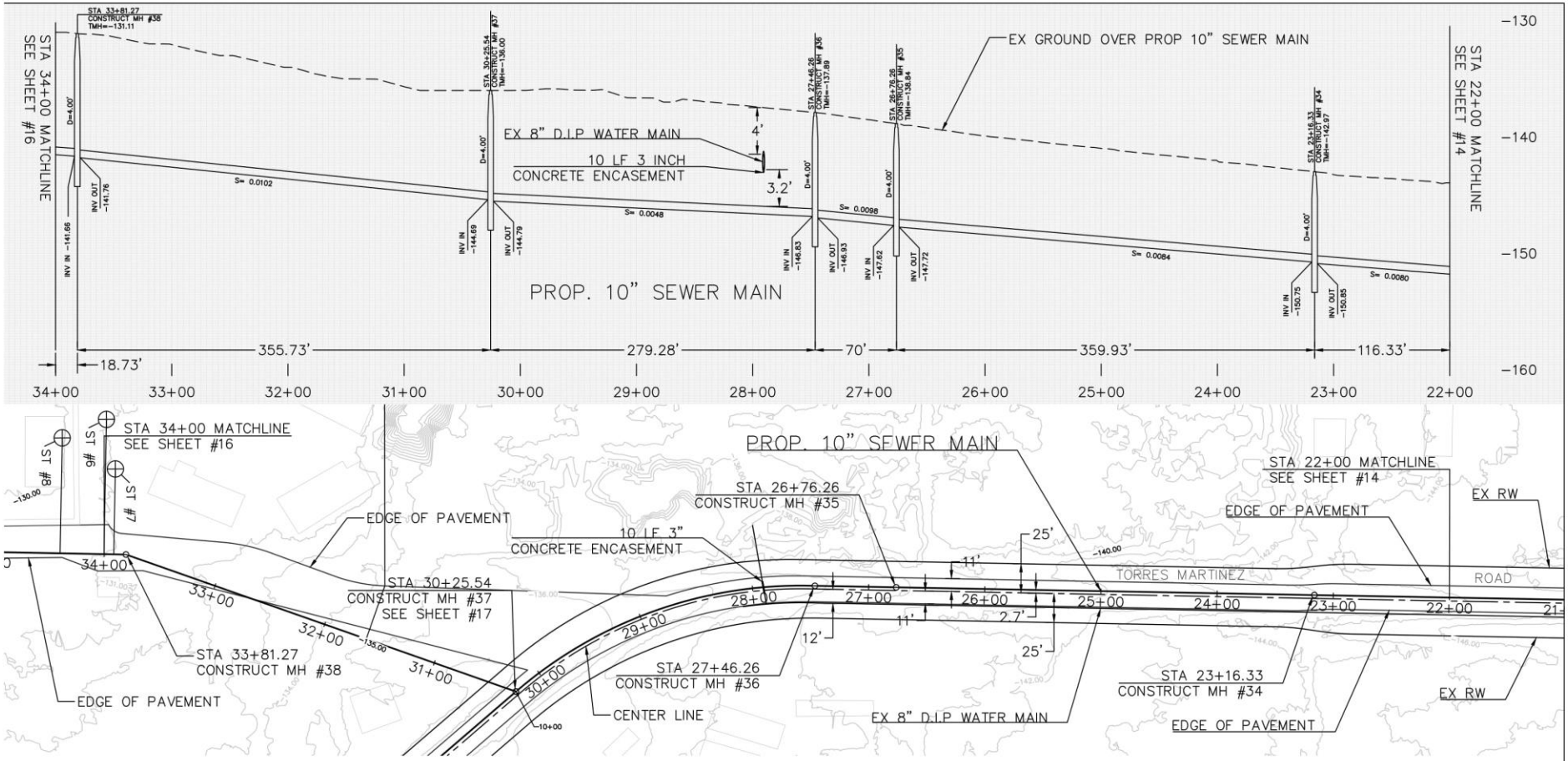
MH #	MH station	Trench Depth (ft)	Trench Width (ft)
EX	EX	15.0	12.0
1	10+81.00	13.4	10.4
2	12+79.10	11.8	8.8
3	16+79.10	10.4	7.4
4	20+79.10	10.4	7.4
5	24+79.10	10.8	7.8
6	28+79.10	11.4	8.4
7	32+44.10	12.3	9.3
8	36+44.10	10.7	7.7
9	40+44.10	9.8	6.8
10	44+44.10	10.4	7.4
11	48+44.10	9.6	6.6
12	52+44.10	10.9	7.9
13	56+44.10	9.8	6.8
14	60+44.10	12.0	9.0
15	64+44.10	11.4	8.4
16	68+44.10	9.4	6.4
17	72+44.10	9.5	6.5
18	76+44.10	10.0	7.0
19	80+44.10	9.4	6.4
20	84+44.10	9.7	6.7
21	88+44.10	9.8	6.8
22	92+44.10	10.2	7.2
23	96+44.10	9.5	6.5
24	100+44.10	9.8	6.8
25	104+44.10	9.4	6.4
26	108+44.10	10.1	7.1
27	112+44.10	10.7	7.7
Average		10.63	7.63

Martinez Road

MH #7, MH #31-#33



MH #34-#38



DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

Preliminary – Not for Construction

TORRES MARTINEZ ROAD

Feet
50 0 50 100
Scale 1" = 40'

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR THE DESIGN AND ENSURING THE ACCEPTABILITY OF THE DESIGN RESIDS IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES

ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED, THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO PROVIDE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE

ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO PROVIDE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a CPS Continuously Operating Reference Station (CORS), PM1. National Geodetic Survey Permanent Identifier (PID) AF8735. Disk in concrete pad, Pinyon Flat, CA. Elevation of 4227.00 US Survey Feet.

SEAL-ENGINEER

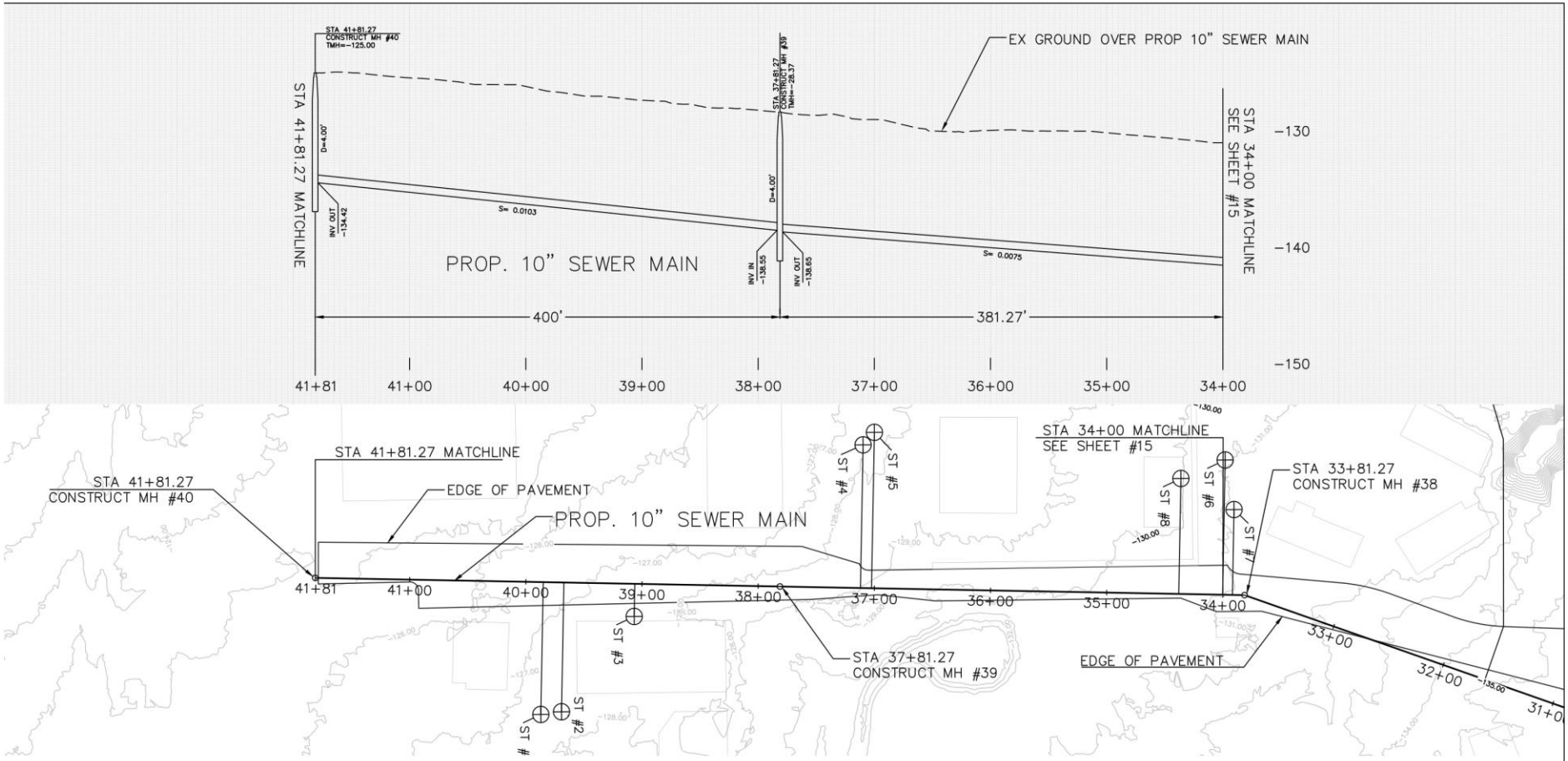
PREPARED BY: DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE 9/23/2016

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD

SHEET NO. 14 OF 16 SHEETS
FILE NO.

MH #39-#40



DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

Preliminary – Not for Construction

TORRES MARTINEZ ROAD

Feet
50 0 50 100
Scale 1" = 40'

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR THE DESIGN AND FOR THE ACCEPTABILITY OF THE DESIGN RATHER IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO PROVIDE THE NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO PROVIDE THE NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a CPS Continuously Operating Reference Station (CORS), PM1. National Geodetic Survey Permanent Identifier (PID) AF8735. Site is a concrete pad, Pinyon Flat, CA. Elevation of 4227.00 US Survey Feet.

SEAL-ENGINEER

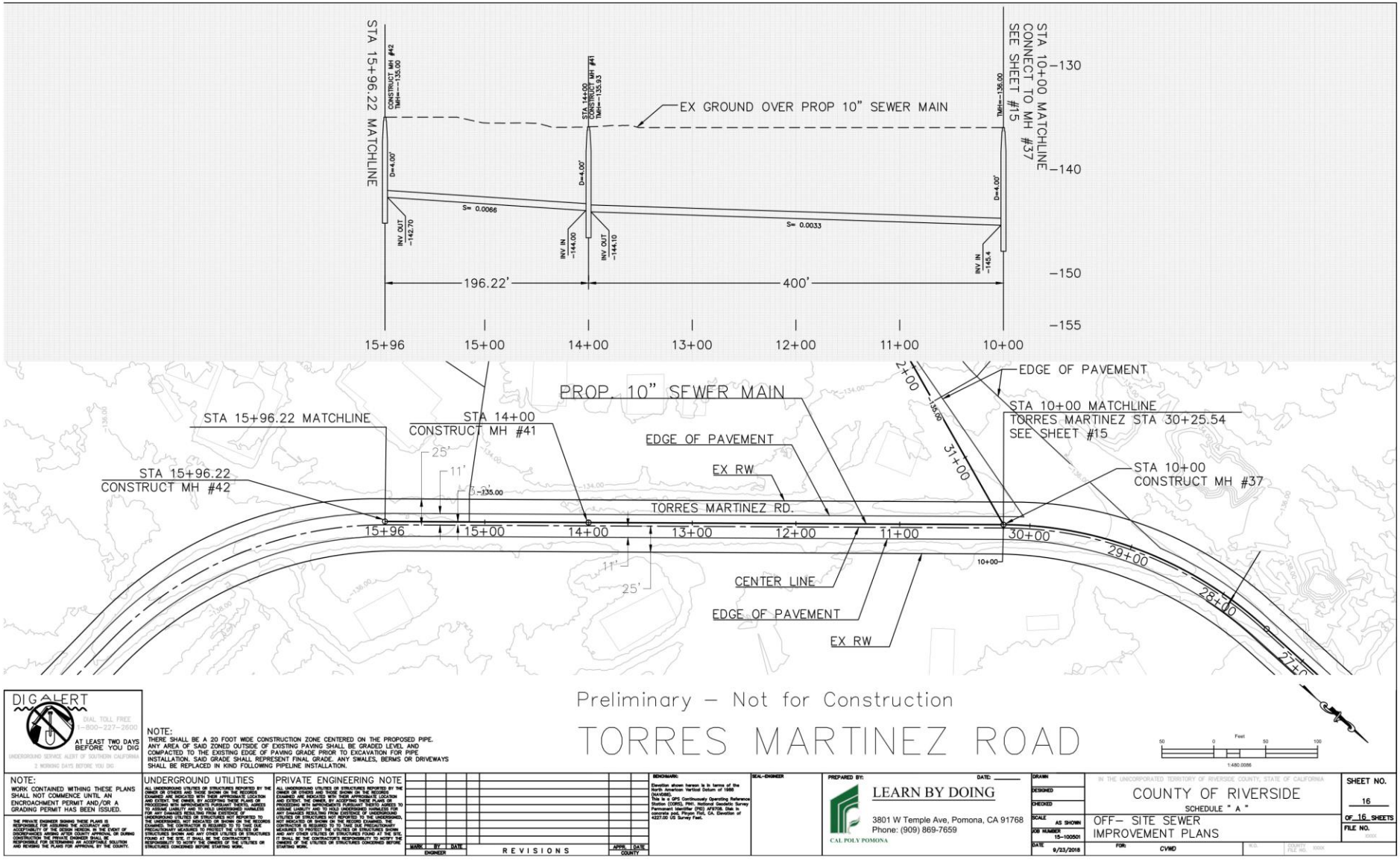
PREPARED BY: DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE 9/23/2016

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD

SHEET NO. 15 OF 16 SHEETS
FILE NO.

MH #41-#42



DIGALERT
DIAL TOLL FREE 1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA
2 WORKING DAYS BEFORE YOU DIG

NOTE:
THERE SHALL BE A 20 FOOT WIDE CONSTRUCTION ZONE CENTERED ON THE PROPOSED PIPE. ANY AREA OF SAID ZONED OUTSIDE OF EXISTING PAVING SHALL BE GRADED LEVEL AND COMPACTED TO THE EXISTING EDGE OF PAVING GRADE PRIOR TO EXCAVATION FOR PIPE INSTALLATION. SAID GRADE SHALL REPRESENT FINAL GRADE. ANY SWALES, BERMS OR DRIVEWAYS SHALL BE REPLACED IN KIND FOLLOWING PIPELINE INSTALLATION.

Preliminary – Not for Construction

TORRES MARTINEZ ROAD

Feet 50 0 50 100
1:480.0086

NOTE:
WORK CONTAINED WITHING THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR THE DESIGN WORK AND ASSUMES THE RESPONSIBILITY OF THE DESIGN WORK IN THE EVENT OF DISCREPANCIES ARISING AFTER COUNTY APPROVAL OR DURING CONSTRUCTION. THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE COUNTY.

UNDERGROUND UTILITIES
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED, THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

PRIVATE ENGINEERING NOTE
ALL UNDERGROUND UTILITIES OR STRUCTURES REPORTED BY THE OWNER OR OTHERS AND THOSE SHOWN ON THE RECORDS EXAMINED ARE INDICATED WITH THEIR APPROXIMATE LOCATION AND EXTENT. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO INDEMNIFY AND HOLD UNDERSIGNED HARMLESS TO ASSUME LIABILITY AND TO HOLD UNDERSIGNED HARMLESS FOR ANY DAMAGES RESULTING FROM EXISTENCE OF UNDERGROUND UTILITIES OR STRUCTURES NOT REPORTED TO THE UNDERSIGNED, NOT INDICATED OR SHOWN ON THE RECORDS EXAMINED. THE OWNER, BY ACCEPTING THESE PLANS OR PERMITS, AGREES TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES SHOWN AND ANY OTHER UTILITIES OR STRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK.

MARK	BY	DATE	REVISIONS	APPR.	DATE

ENGINEER — COUNTY

BENCHMARK:
Elevation shown hereon is in terms of the North American Vertical Datum of 1988 (NAVD88).
This is a CPS Continuously Operating Reference Station (CORS), PM1, National Geodetic Survey Permanent Identifier (PID) AF8735. Disk is in concrete pad, Pinyon Flat, CA. Elevation of 4227.00 US Survey Feet.

SEAL-ENGINEER

PREPARED BY: DATE:
LEARN BY DOING
3801 W Temple Ave, Pomona, CA 91768
Phone: (909) 869-7659
CAL POLY POMONA

DRAWN
DESIGNED
CHECKED
SCALE AS SHOWN
JOB NUMBER 15-100501
DATE 9/23/2018

IN THE UNINCORPORATED TERRITORY OF RIVERSIDE COUNTY, STATE OF CALIFORNIA
COUNTY OF RIVERSIDE
SCHEDULE " A "
OFF- SITE SEWER IMPROVEMENT PLANS
FOR: CVWD

SHEET NO. 16 OF 16 SHEETS
FILE NO.

MH #	MH station	Trench Depth (ft)	Trench Width (ft)
7	10+00	12.3	9.3
31	14+00	10.9	7.9
32	18+00	9.4	6.4
33	19+87.55	9.3	6.3
34	23+16.33	9.3	6.3
35	26+76.26	10.3	7.3
36	27+46.26	10.4	7.4
37	30+25.54	10.2	7.2
38	33+81.27	12.1	9.0
39	37+81.27	11.7	8.7
40	41+81.27	10.9	7.9
37	10+00	10.3	7.3
41	14+00	8.7	5.7
42	15+96.22	8.5	5.5
Average		10.29	7.29